

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

**PREQUALIFICATION**

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

**REQUESTS FOR AUTHORIZATION TO BID**

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

**WHO CAN BID ?**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**ADDENDUMS AND REVISIONS TO THE PROPOSAL FORMS**

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

# 2P

RETURN WITH BID

Proposal Submitted By
Name
Address
City

## Letting REVIEW & INSPECTION

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. 68201  
TAZEWELL County  
Section (90-11)R-2;90(13,14,14-1)R-1  
Route FAI 74  
Project ACIM-744(234)94  
District 4 Construction Funds

PLEASE MARK THE APPROPRIATE BOX BELOW:

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

Prepared by

F

Checked by

(Printed by authority of the State of Illinois)

---

---

## 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 \_\_\_\_\_

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

**Contract No. 68201  
TAZEWELL County  
Section (90-11)R-2;90(13,14,14-1)R-1  
Project ACIM-744(234)94  
Route FAI 74  
District 4 Construction Funds**

**This project consists of the reconstruction of the westbound lanes of I-74 and associated arterial streets from North Main Street to Washington Street in East Peoria. This work includes bridge removal and replacement, earth excavation, pavement/ramp removal and replacement, storm sewer, permanent and temporary erosion control, retaining walls, traffic signals, signing and lighting.**

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

**RETURN WITH BID**

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

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

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

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

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

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

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

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

Item \_\_\_\_\_

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

County \_\_\_\_\_

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

BD 354 (Rev. 11/2001)

**RETURN WITH BID**

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

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

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

**Schedule of Combination Bids**

Combination No.	Sections Included in Combination	Combination Bid	
		Dollars	Cents

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

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
MX030199	TEMP PAVEMENT	SQ M	12,378.000				
MX030216	P CUL REM 300	METER	42.000				
MX030217	P CUL REM 375	METER	31.000				
MX030218	P CUL REM 450	METER	44.000				
MX030345	LT WT CELL CONC FILL	CU M	51.700				
MX030396	FILL EX STORM SEWERS	CU M	99.500				
MX030472	FORM LINER G & F SURF	SQ M	1,492.300				
MX032083	GDRL AGG EROS CONT	M TON	350.000				
MX032134	BRACED EXCAVATION	CU M	506.000				
MX032138	PIPE ELBOW 600	EACH	6.000				
MX032186	PIPE ELBOW 300	EACH	25.000				
MX032188	CLASS SI CONC SPL	CU M	154.000				
MX032693	REM TEMP CONC BAR SO	METER	3,019.000				
MX033104	PIPE ELBOW 450	EACH	12.000				
MX033109	DRILL/SET SOLDIER PIL	CU M	749.000				



ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
MX033182	APPLY DUST SUP AGENTS	UNIT	1,676.000				
MX033183	SOIL STABILIZERS	KG	46,268.000				
MX033192	AGGREGATE SUBBASE	M TON	39,026.000				
MX033194	WHITEWASH	SQ M	46,448.000				
MX033447	PIPE CULV REMOV 600	METER	45.000				
MX033450	CONC BAR DBL FACE SPL	CU M	45.000				
MX033456	N-INTRU DET POLE 9.1	EACH	1.000				
MX033460	WET TEM PM TAP T3 100	METER	342.000				
MX033462	REM/DISP TMP C BAR SO	METER	708.000				
MX033531	CL B PATCH SPL	SQ M	107.000				
MX033532	AGGREGATE SPECIAL	M TON	5.000				
MX203010	SPECIAL EXCAVATION	CU M	11,470.000				
MX406M20	LEV BIND MM SUPER N70	M TON	44.000				
MX406022	BC SC SUPER "D" N50	M TON	544.000				
MX406024	BC SC SUPER "D" N70	M TON	3,607.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
MX406066	P BCSC SUPER "E" N90	M TON	3,905.000				
MX406214	BCBC SUP IL-19.0 N50	M TON	544.000				
MX406216	BCBC SUP IL-19.0 N70	M TON	6,836.000				
MX406248	P BCBC SUP IL19.0 N90	M TON	5,845.000				
MX406295	BCBC SUPER IL19.0L LE	M TON	14,288.000				
MX440215	PAVED DITCH REMOV SPL	SQ M	380.000				
MX500133	FLO BRG FIXED 1850KN	EACH	4.000				
MX500325	FL BRG GD EXP 1500KN	EACH	16.000				
MX500335	FL BRG GD EXP 2000KN	EACH	8.000				
MX504002	F&E PPC B T-BM 1829	METER	380.000				
MX509025	ALUM RAILING TY H SPL	METER	117.000				
MX550070	STORM SEW A 1 750 EQ	METER	32.000				
MX602350	MAN A 1.2D FLAT SL TP	EACH	1.000				
MX602751	INL-MN G-1 1.2D SPL	EACH	5.000				
MX602756	INL-MN G-1 1.5D SPL	EACH	22.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
MX637112	CONC BAR TRANS MOD	METER	10.000				
MX704005	TEMP CON BAR (PERM)	METER	106.800				
MX704200	REM TEMP CONC BARRIER	METER	1,470.000				
MX720100	TEMP SIGN PANEL ASBLY	SQ M	60.000				
MX721010	COMP TEMP SIGN OVLAY	SQ M	35.000				
MX733010	OSS CAN 2CS 0.90X1.68	METER	9.000				
MX871055	FOCC62.5/125 MM12SM12	METER	1,516.000				
MX873027	ELCBL C GROUND 6 1C	METER	177.000				
MX877017	STL COMB MAA&P 15.85	EACH	1.000				
MX877020	STL COMB MAA&P 16.76	EACH	3.000				
MX878030	CONC FDN TY E 900D	METER	25.000				
MZ008830	DRIL SHAFT/SOIL 915	METER	25.500				
MZ008880	DRIL SHAFT/SOIL 1830	METER	1.000				
MZ008930	DRIL SHAFT/ROCK 760	METER	21.000				
MZ008980	DRIL SHAFT/ROCK 1830	METER	17.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
MZ008990	DRIL SHAFT/SOIL 1980	METER	5.000				
MZ017205	DOWEL BARS 38	EACH	4,313.000				
MZ021500	EXPANSION JOINT 75	METER	118.800				
MZ022400	FAB REINF ELAS TROUGH	METER	36.900				
MZ022800	FENCE REMOVAL	METER	137.000				
MZ047300	PROTECTIVE SHIELD	SQ M	2,959.000				
M2010110	TREE REMOV 6-15	UNIT	267.000				
M2010210	TREE REMOV OVER 15	UNIT	176.000				
M2010500	TREE REMOV HECTARES	HA	1.000				
M2011000	TEMPORARY FENCE	METER	1,703.000				
M2020010	EARTH EXCAVATION	CU M	64,865.000				
M2021200	REM & DISP UNS MATL	CU M	3,460.000				
M2021400	SUB GRAN MAT A	M TON	11,751.000				
M2021500	SUB GRAN MAT B	M TON	6,512.000				
M2040800	FURNISHED EXCAV	CU M	12,165.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M2070220	POROUS GRAN EMBANK	CU M	2,831.000				
M2080250	TRENCH BACKFILL SPL	CU M	2,104.000				
M2101000	GEOTECH FAB F/GR STAB	SQ M	39,015.000				
M2113100	TOPSOIL F & P 100	SQ M	48,636.000				
M2500110	SEEDING CL 1A	HA	4.000				
M2500210	SEEDING CL 2A	HA	2.600				
M2500312	SEEDING CL 4A	HA	3.100				
M2500322	SEEDING CL 5A	HA	0.400				
M2500400	NITROGEN FERT NUTR	KG	644.000				
M2500500	PHOSPHORUS FERT NUTR	KG	644.000				
M2500600	POTASSIUM FERT NUTR	KG	644.000				
M2500700	AGR GROUND LIMESTONE	M TON	33.000				
M2510120	MULCH METHOD 2	M TON	4.000				
M2510130	MULCH METHOD 3	M TON	11.700				
M2510630	EROSION CONTR BLANKET	SQ M	39,120.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF PRICES  
CONTRACT  
NUMBER - 68201

State Job # - C-94-010-02  
PPS NBR - 4-01814-0400  
County Name - TAZEWELL - -  
Code - 179 - -  
District - 4 - -  
Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
ACIM-0744/234/094

Route  
FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M2800250	TEMP EROS CONTR SEED	KG	12,713.000				
M2800400	PERIMETER EROS BAR	METER	6,195.000				
M2810707	STONE DUMP RIP CL A4	SQ M	551.000				
M2820200	FILTER FABRIC	SQ M	2,201.000				
M2850400	ARTICUL BLOCK REV MAT	SQ M	2,012.000				
M3113100	SUB GRAN MAT SPL	CU M	557.000				
M3511100	AGG BASE CSE B 100	SQ M	520.000				
M3530250	PCC BSE CSE 250	SQ M	10,055.000				
M3530300	PCC BSE CSE 300	SQ M	92.000				
M3540250	PCC BASE CSE W 250	SQ M	525.000				
M3540300	PCC BASE CSE W 300	SQ M	181.000				
M4060085	PCC SURF REM BUTT JT	SQ M	137.000				
M4060200	BIT MATLS PR CT	M TON	92.900				
M4060300	AGG PR CT	M TON	247.900				
M4060980	BIT SURF REM BUTT JT	SQ M	418.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M4060985	BIT SUR RM BUTT JT SP	SQ M	1,571.000				
M4060990	TEMPORARY RAMP	SQ M	284.000				
M4080400	INCIDENTAL BIT SURF	M TON	3.000				
M4202255	PCC PVT 250 JOINTED	SQ M	22,582.000				
M4205000	BR APPR PAVT	SQ M	727.000				
M4205050	BR APPROACH PAVT SPL	SQ M	586.000				
M4205200	PROTECTIVE COAT	SQ M	91,358.000				
M4210290	CON REINF PCC PVT 290	SQ M	18,305.000				
M4214290	PVT REINFORCEMENT 290	SQ M	18,305.000				
M4217072	LUG SYSTEM COMP 7.2	EACH	2.000				
M4230200	PCC DRIVEWAY PAVT 200	SQ M	286.000				
M4240100	PC CONC SIDEWALK 100	SQ M	137.000				
M4400025	BIT SURF REM 25	SQ M	24,929.000				
M4400040	BIT SURF REM 40	SQ M	39,807.000				
M4400050	BIT SURF REM 50	SQ M	21.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M4400075	BIT SURF REM 75	SQ M	1,754.000				
M4401000	BIT SURF REM VAR DP	SQ M	9,383.000				
M4402000	PAVEMENT REM	SQ M	25,777.000				
M4402020	CURB REM	METER	300.000				
M4402040	COMB CURB GUTTER REM	METER	1,502.000				
M4402050	SIDEWALK REM	SQ M	46.000				
M4402200	BIT MEDIAN SURF REMOV	SQ M	362.000				
M4402280	CONC BARRIER REMOV	METER	67.000				
M4402530	PAVED SHLD REMOVAL	SQ M	14,809.000				
M4402600	PCC SHOULDER REMOVAL	SQ M	342.000				
M4405000	PAVED DITCH REMOVAL	METER	1,237.000				
M4426225	CL B PATCH T2 250	SQ M	709.000				
M4426250	CL B PATCH T2 375	SQ M	1,491.000				
M4426450	CL B PATCH T4 375	SQ M	113.000				
M4429400	SAW CUTS	METER	3,215.000				



ILLINOIS DEPARTMENT OF TRANSPORTATION  
SCHEDULE OF PRICES  
CONTRACT  
NUMBER - 68201

State Job # - C-94-010-02  
PPS NBR - 4-01814-0400  
County Name - TAZEWELL - -  
Code - 179 - -  
District - 4 - -  
Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
ACIM-0744/234/094

Route  
FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M4430020	STRIP REF CR CON TR	METER	5,768.000				
M4812000	AGGREGATE SHLDS B	M TON	3,231.000				
M4820000	BIT SHOULDERS	M TON	3,289.000				
M4820200	BIT SHOULDERS 200	SQ M	514.000				
M4820250	BIT SHOULDERS 250	SQ M	570.000				
M4830250	PCC SHOULDERS 250	SQ M	7,617.000				
M4830290	PCC SHOULDERS 290	SQ M	8,312.000				
M5010240	CONC REM	CU M	122.200				
M5010465	SLOPE WALL REMOV	SQ M	306.000				
M5010522	PIPE CULVERT REMOV	METER	260.000				
M5020100	STRUCTURE EXCAVATION	CU M	2,552.000				
M5020400	ROCK EXC STRUCT	CU M	22.300				
M5030030	PREF JOINT SEAL 64	METER	58.500				
M5030105	NEOPRENE EXPAN JT 50	METER	80.000				
M5030300	CLASS MS CONC	CU M	41.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M5030350	CONC STRUCT	CU M	2,615.000				
M5030360	CONC SUP-STR	CU M	2,335.800				
M5030390	BR DECK GROOVING	SQ M	8,544.000				
M5030450	PROTECTIVE COAT	SQ M	10,666.000				
M5030710	FORM CONC REP =< 125	SQ M	4.000				
M5041219	F&E P P CON I-BM 1219	METER	695.500				
M5041372	F&E P P CON I-BM 1372	METER	352.000				
M5050105	F & E STRUCT STEEL	L SUM	1.000				
M5050405	F & E STRUCT STEEL	KG	3,290.000				
M5050410	STRUCT STEEL REMOV	KG	1,540.000				
M5070207	TREATED TIMBER LAG	SQ M	23.000				
M5070209	UNTREATED TIMBER LAG	SQ M	1,371.000				
M5070213	FUR SOLDIER PILES BU	METER	1,160.400				
M5070215	FUR SOLDIER PILES WS	METER	233.300				
M5080105	REINFORCEMENT BARS	KG	2,140.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M5080205	REINF BARS, EPOXY CTD	KG	538,840.000				
M5110100	SLOPE WALL 100	SQ M	2,965.000				
M5110200	SLOPE WALL 150	SQ M	107.000				
M5120160	F STL PILE HP310X79	METER	132.000				
M5120166	F STL PILE HP310X94	METER	292.000				
M5120170	F STL PILE HP310X110	METER	504.000				
M5120175	F STL PILE HP310X125	METER	603.500				
M5120180	F STL PILE HP360X108	METER	524.500				
M5120190	F STL PILE HP360X132	METER	186.000				
M5120210	F STL PILE HP360X174	METER	627.000				
M5120315	DRIVE STL PILE	METER	2,868.500				
M5120460	TEST PIL ST HP310X79	EACH	2.000				
M5120475	TEST PIL ST HP310X125	EACH	1.000				
M5120480	TEST PIL ST HP360X108	EACH	1.000				
M5120490	TEST PIL ST HP360X132	EACH	2.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M5120510	TEST PIL ST HP360X174	EACH	1.000				
M542E112	PRC FL-END SEC 300	EACH	25.000				
M542E120	PRC FL-END SEC 450	EACH	3.000				
M542E128	PRC FL-END SEC 600	EACH	7.000				
M542E136	PRC FL-END SEC 750	EACH	4.000				
M542E536	PRC FL ES EQ RS 750	EACH	1.000				
M542E628	PRCF ES EL EQRS 600	EACH	1.000				
M542F012	MET END SEC 300	EACH	12.000				
M542I055	P CUL CL A 2 900	METER	29.000				
M542U425	P CUL CL D 2 450 TEM	METER	4.000				
M5422120	P CUL 1 RC-A ERS 600	METER	39.000				
M5429910	CONCRETE COLLAR	CU M	3.500				
M5500030	STORM SEW CL A 1 300	METER	396.000				
M5500050	STORM SEW CL A 1 450	METER	107.000				
M5500065	STORM SEW CL A 1 600	METER	23.500				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M5500070	STORM SEW CL A 1 675	METER	6.000				
M5500075	STORM SEW CL A 1 750	METER	77.000				
M5500430	STORM SEW CL A 2 300	METER	364.000				
M5500450	STORM SEW CL A 2 450	METER	189.500				
M5500465	STORM SEW CL A 2 600	METER	1,056.000				
M5500475	STORM SEW CL A 2 750	METER	128.000				
M5500485	STORM SEW CL A 2 900	METER	38.500				
M5500495	STORM SEW CL A 2 1050	METER	15.000				
M5500515	STORM SEW CL A 2 1650	METER	45.500				
M5500830	STORM SEW CL A 3 300	METER	64.500				
M5500865	STORM SEW CL A 3 600	METER	42.500				
M5500875	STORM SEW CL A 3 750	METER	161.000				
M5501230	STORM SEW CL A 4 300	METER	17.500				
M5501275	STORM SEW CL A 4 750	METER	16.500				
M5510025	STORM SEWER REM 300	METER	20.500				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M5510035	STORM SEWER REM 375	METER	31.000				
M5510040	STORM SEWER REM 400	METER	46.000				
M5510060	STORM SEWER REM 600	METER	45.500				
M5510070	STORM SEWER REM 750	METER	42.000				
M5510080	STORM SEWER REM 900	METER	6.500				
M5510105	STORM SEWER REM 1500	METER	1.000				
M5510110	STORM SEWER REM 1650	METER	2.000				
M5870020	BRIDGE SEAT SEALER	SQ M	115.000				
M5900100	EPOXY CRACK SEALING	METER	34.000				
M5910100	GEOCOMPOSITE WALL DR	SQ M	781.000				
M6010080	FRENCH DRAINS	CU M	29.000				
M6010125	PIPE DRAINS 300	METER	256.000				
M6010130	PIPE DRAINS 375	METER	10.500				
M6010135	PIPE DRAINS 450	METER	122.000				
M6010605	PIPE UNDERDRAINS 100	METER	3,433.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M6010610	PIPE UNDERDRAINS 150	METER	153.000				
M6010705	PIPE UNDERDRN 100 SP	METER	1,502.000				
M6010710	PIPE UNDERDRN 150 SP	METER	2.000				
M6021405	MAN A 1.2D T1F OL	EACH	3.000				
M6021410	MAN A 1.2D T1F CL	EACH	21.000				
M6021445	MAN A 1.2D T9F&G	EACH	2.000				
M6021485	MAN A 1.2D T37G	EACH	6.000				
M6021610	MAN A 1.5D T1F CL	EACH	12.000				
M6021805	MAN A 1.8D T1F OL	EACH	2.000				
M6021810	MAN A 1.8D T1F CL	EACH	2.000				
M6021845	MAN A 1.8D T9F&G	EACH	1.000				
M6023005	MAN SP 1.2D	EACH	1.000				
M6060010	CLASS SI CONC OUTLET	CU M	28.000				
M6060260	CONC GUTTER TA	METER	181.000				
M6060270	CONC GUTTER TA MOD	METER	843.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M6060500	COMB CC&G TB15.30	METER	871.000				
M6060600	COMB CC&G TB15.45	METER	33.000				
M6060700	COMB CC&G TB15.60	METER	4,381.000				
M6062100	COMB CC&G TM15.15	METER	22.700				
M6062400	COMB CC&G TM15.60	METER	18.200				
M6063600	CONC MEDIAN SURF 100	SQ M	2,133.300				
M6064100	CONC MED TSB15.30	SQ M	374.000				
M6064800	CONC MED TSM	SQ M	12.000				
M6066000	CORRUGATED MED	SQ M	57.100				
M6300100	SPBGR TY A	METER	259.080				
M6320030	GUARDRAIL REMOV	METER	1,283.000				
M6330610	REM & RE-ERECT SPBGR	METER	1,291.000				
M6370120	CONC BAR DBL FACE MOD	METER	566.000				
M6370140	CONC BAR SIN FACE MOD	METER	1,372.000				
M6371055	CONC BARRIER BASE	SQ M	61.000				



ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M6420015	SHOULDER RUMBLE STRIP	METER	19,079.500				
M6640100	CH LK FENCE 1.2	METER	192.000				
M6640120	CH LK FENCE 1.8	METER	29.000				
M6640650	CH LK GATE 1.8X2.4 SL	EACH	1.000				
M6641920	CH LK FENCE REMOV	METER	165.000				
M6641930	CH LK FENCE REM & RE	METER	187.000				
M7030100	SHORT-TERM PAVT MKING	METER	24,195.000				
M7030220	TEMP PVT MK LINE 100	METER	12,568.000				
M7030240	TEMP PVT MK LINE 150	METER	1,400.000				
M7030250	TEMP PVT MK LINE 200	METER	527.000				
M7030510	PAVT MARK TAPE T3 L&S	SQ M	98.000				
M7030520	PAVT MARK TAPE T3 100	METER	29,947.000				
M7030540	PAVT MARK TAPE T3 150	METER	749.000				
M7030550	PAVT MARK TAPE T3 200	METER	52.000				
M7030560	PAVT MARK TAPE T3 300	METER	218.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M7030580	PAVT MARK TAPE T3 600	METER	163.000				
M7030610	TEMP PT PAVT MK L&S	SQ M	9.000				
M7030620	TEMP PT PM LINE 100	METER	98.000				
M7030650	TEMP PT PM LINE 600	METER	21.000				
M7031000	WORK ZONE PAVT MK REM	SQ M	6,166.000				
M7040100	TEMP CONC BARRIER	METER	1,470.000				
M7040200	REL TEMP CONC BARRIER	METER	156.000				
M7040300	REL TEMP CONC BAR SO	METER	564.000				
M7040400	TEMP CON BAR (ST OWN)	METER	1,302.000				
M7200100	SIGN PANEL T1	SQ M	15.000				
M7200200	SIGN PANEL T2	SQ M	19.000				
M7200300	SIGN PANEL T3	SQ M	298.000				
M7210100	SIGN PANEL OVERLAY	SQ M	4.000				
M7210105	SIGN PANEL OVERLAY SP	SQ M	61.000				
M7240330	REMOV SIGN PANEL T3	SQ M	13.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M7240730	RELOC SIGN PANEL T3	SQ M	49.000				
M7270100	STR STL SIN SUP BA	KG	8,840.000				
M7280100	TELES STL SIN SUPPORT	METER	5.000				
M7290100	METAL POST TY A	METER	9.000				
M7290200	METAL POST TY B	METER	8.000				
M7300100	WOOD SIN SUPPORT	METER	134.000				
M7330050	OVHD SIN STR-SPAN T1S	METER	23.000				
M7340100	CONC FOUNDATION	CU M	33.400				
M7340200	DRILL SHAFT CONC FDN	CU M	31.600				
M7800100	THPL PVT MK LTR & SYM	SQ M	59.200				
M7800105	THPL PVT MK LINE 100	METER	5,550.000				
M7800115	THPL PVT MK LINE 150	METER	1,442.800				
M7800120	THPL PVT MK LINE 200	METER	945.000				
M7800125	THPL PVT MK LINE 300	METER	579.000				
M7800140	THPL PVT MK LINE 600	METER	106.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M7800600	EPOXY PVT MK LTR-SYM	SQ M	41.000				
M7800605	EPOXY PVT MK LN 100	METER	1,030.000				
M7800615	EPOXY PVT MK LN 150	METER	444.000				
M7800620	EPOXY PVT MK LN 200	METER	472.000				
M7800625	EPOXY PVT MK LN 300	METER	81.000				
M7800640	EPOXY PVT MK LN 600	METER	93.000				
M7802010	POLYUREA PM T1 LN 100	METER	29,917.000				
M7802015	POLYUREA PM T1 LN 150	METER	4,361.000				
M7802020	POLYUREA PM T1 LN 200	METER	4,668.000				
M7802030	POLYUREA PM T1 LN 300	METER	510.000				
M7802060	POLYUREA PM T1 LN 600	METER	23.000				
M7830100	PAVT MARKING REMOVAL	SQ M	391.000				
M8100240	CON T 30 PVC	METER	33.000				
M8100260	CON T 50 PVC	METER	3,431.000				
M8100280	CON T 75 PVC	METER	880.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M8100290	CON T 90 PVC	METER	64.000				
M8101450	CON P 50 PVC	METER	344.000				
M8101470	CON P 75 PVC	METER	32.000				
M8101480	CON P 90 PVC	METER	107.000				
M8110130	CON AT ST 25 GALVS	METER	344.000				
M8110190	CON AT ST 90 GALVS	METER	6.000				
M8120210	CON EMB STR 25 PVC	METER	17.000				
M8120230	CON EMB STR 50 PVC	METER	67.000				
M8120250	CON EMB STR 75 PVC	METER	386.000				
M8130120	JBX SS AS 150X150X100	EACH	41.000				
M8130415	JBX SS ES 300X300X200	EACH	8.000				
M8131500	JBX NM ES 675X400X300	EACH	3.000				
M8150200	TR & BKFIL F ELECT WK	METER	3,158.200				
M8150205	TR & BKFIL ELEC W SPL	METER	8.400				
M8170030	EC C XLP USE 1C 8	METER	1,609.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M8170040	EC C XLP USE 1C 6	METER	2,991.000				
M8170050	EC C XLP USE 1C 4	METER	1,807.000				
M8170060	EC C XLP USE 1C 2	METER	5,400.000				
M8170090	EC C XLP USE 1C 3/0	METER	45.000				
M8300415	LT P A 13.5MH 2.4DA	EACH	4.000				
M8301815	LP A TB 13.5MH 2.4DA	EACH	8.000				
M8360100	LIGHT POLE FDN 600	METER	30.000				
M8370100	LT TOWER FDN	METER	62.600				
M8731220	ELCBL C SIGNAL 14 3C	METER	63.000				
M8731240	ELCBL C SIGNAL 14 5C	METER	853.000				
M8731250	ELCBL C SIGNAL 14 7C	METER	244.000				
M8731510	ELCBL C LEAD 18 3PR	METER	33.600				
M8731800	ELCBL C SERV 6 2C	METER	177.000				
M8750510	TS POST GALVS 4.85	EACH	3.000				
M8770760	STL COMB MAA&P 11.58	EACH	2.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M8780100	CONC FDN TY A	METER	2.700				
M8780200	CONC FDN TY D	METER	2.200				
M8780300	CONC FDN TY E 600D	METER	5.500				
M8780400	CONC FDN TY E 750D	METER	3.000				
M8860100	DET LOOP T1	METER	49.000				
M8860400	DET LOOP SPL	METER	45.700				
X0301840	DRILL-GROUT #35 T-BAR	EACH	1,308.000				
X0321809	PERMANENT GRND ANCHOR	EACH	204.000				
X0322050	RAISD REF PM REFL REM	EACH	299.000				
X0323073	CLEAN EX PAVT EDGE JT	UNIT	6.300				
X0323481	VIDEO VEH DET 4 CAM	EACH	2.000				
X0323639	INSTAL BOLARD/LUMINAR	EACH	4.000				
X0323677	STREET SWEEPING	HOUR	1,167.000				
X0323678	DUST CONTROL PADS	EACH	62.000				
X0323713	RADIO INTER SYS LOCAL	EACH	2.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
X0323778	DRAINAGE SCUPPERS T1	EACH	16.000				
X0323779	DRAINAGE SCUPPERS T2	EACH	2.000				
X0323830	DRAINAGE SCUPPR DS-11	EACH	14.000				
X0323920	POLE MT EQUIP CAB TB	EACH	1.000				
X0323921	POLE MT EQUIP CAB TC	EACH	1.000				
X0323959	FORM LINER MOCKUP	EACH	1.000				
X0323968	HIGHWAY-RAIL INFO SGN	EACH	1.000				
X0323970	UNPASS LUMINAIRE IO	EACH	24.000				
X0323971	HI-MAST LUMINAIRE IO	EACH	49.000				
X0323989	REIN TEMP SN PANEL AS	EACH	39.000				
X0323997	SIGN SUP PARAPT MT TI	EACH	2.000				
X0324134	BATT BACKUP SYS/CABNT	EACH	3.000				
X0324946	CONC COLLAR C1	EACH	1.000				
X0349800	CONC HDWL - P UNDR RM	EACH	2.000				
X0504200	CONCRETE HEADWALL	EACH	3.000				



ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
X0976500	END SECTIONS REMOVED	EACH	19.000				
X4207500	CONCRETE PVT WARRANTY	L SUM	1.000				
X6020065	INLETS TG-1 DBL (SPL)	EACH	6.000				
X6040490	FR & GRATES T20 IO	EACH	13.000				
X6330100	REM-RE TR B TM T1 SPL	EACH	4.000				
X6700410	ENGR FLD OFF A SPL	CAL MO	24.000				
X6700600	ENGR FIELD LAB SPL	CAL MO	24.000				
X7011015	TR C-PROT EXPRESSWAYS	L SUM	1.000				
X7015000	CHANGEABLE MESSAGE SN	CAL MO	84.000				
X8300645	LT P G 13.5MH 4.5DA	EACH	1.000				
X8350100	LIGHT TOWER (IO)	EACH	9.000				
X8800020	SH LED 1F 3S MAM	EACH	18.000				
X8800035	SH LED 1F 3S BM	EACH	7.000				
X8800038	SH LED 1F 4S MAM	EACH	1.000				
X8800040	SH LED 1F 5S BM	EACH	4.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
X8810610	PED SH LED 1F BM	EACH	2.000				
Z0000100	ABANDON EX CULVERT	EACH	1.000				
Z0002600	BAR SPLICERS	EACH	514.000				
Z0007900	BUTT JOINTS	EACH	1.000				
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.000				
Z0018800	DRAINAGE SYSTEM	L SUM	1.000				
Z0024478	FLEX DELINEATORS	EACH	309.000				
Z0030020	IMP ATTEN FRD NAR TL2	EACH	3.000				
Z0030030	IMP ATTEN FRD NAR TL3	EACH	3.000				
Z0030255	IMP ATTN TEMP FRN TL2	EACH	3.000				
Z0030350	IMP ATTN REL NRD TL3	EACH	1.000				
Z0031405	JACK & SHOR EX GIRDER	L SUM	1.000				
Z0048665	RR PROT LIABILITY INS	L SUM	1.000				
Z0050000	REM REIN IMPACT ATTEN	EACH	1.000				
Z0064540	SEEPAGE COLLAR	EACH	23.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
Z0076600	TRAINEES	HOUR	4,000.000		0.800		3,200.000
28000300	TEMP DITCH CHECKS	EACH	95.000				
28000500	INLET & PIPE PROTECT	EACH	290.000				
50100300	REM EXIST STRUCT N1	EACH	1.000				
50100400	REM EXIST STRUCT N2	EACH	1.000				
50100500	REM EXIST STRUCT N3	EACH	1.000				
50104400	CONC HDWL REM	EACH	33.000				
50104710	REM EXIST BEARINGS	EACH	10.000				
50104800	REM EXIST CONC DECK	L SUM	1.000				
50300100	FLOOR DRAINS	EACH	7.000				
50300310	ELAST BEARING ASSY T1	EACH	12.000				
50300320	ELAST BEARING ASSY T2	EACH	28.000				
50300330	ELAST BEARING ASSY T3	EACH	4.000				
50500505	STUD SHEAR CONNECTORS	EACH	24,458.000				
50500715	JACK & REM EX BEARING	EACH	30.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
50600300	CLEAN PAINT STEEL BR	L SUM	1.000				
50606400	C&D LEAD PT CL RES	L SUM	1.000				
51500100	NAME PLATES	EACH	7.000				
54244805	INLET BOX 542501	EACH	1.000				
54246205	INLET BOX 542526	EACH	1.000				
60100060	CONC HDWL FOR P DRAIN	EACH	29.000				
60240301	INLETS TB T8G	EACH	1.000				
60240303	INLETS TB T9F&G	EACH	3.000				
60240324	INLETS TB T20F&G	EACH	2.000				
60241900	INLETS TG-1 SPL	EACH	61.000				
60242400	INLETS SPL	EACH	7.000				
60247132	DR STR T1A W/1 T20F&G	EACH	15.000				
60255500	MAN ADJUST	EACH	7.000				
60260100	INLETS ADJUST	EACH	1.000				
60260500	INLETS ADJ NEW T3F&G	EACH	7.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
60403400	GRATES TA	EACH	5.000				
60500040	REMOV MANHOLES	EACH	2.000				
60500060	REMOV INLETS	EACH	40.000				
60500105	FILL MANHOLES	EACH	2.000				
60500305	FILL INLETS	EACH	2.000				
60603300	GUTTER OUTLET	EACH	3.000				
60900215	TY C INLET BOX 609001	EACH	5.000				
60900315	TY D INLET BOX 609006	EACH	1.000				
60900515	CONC THRUST BLOCKS	EACH	30.000				
61000115	TY E INLET BOX 610001	EACH	5.000				
61000225	TY F INLET BOX 610001	EACH	1.000				
63100045	TRAF BAR TERM T2	EACH	5.000				
63100085	TRAF BAR TERM T6	EACH	1.000				
63100167	TR BAR TRM T1 SPL TAN	EACH	8.000				
63500105	DELINEATORS	EACH	42.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
66600105	FUR ERECT ROW MARKERS	EACH	10.000				
66700205	PERM SURV MKRS T1	EACH	12.000				
67100100	MOBILIZATION	L SUM	1.000				
70101800	TRAF CONT & PROT SPL	L SUM	1.000				
70103817	TR CONT SURVEILL SPL	CAL DA	440.000				
72400100	REMOV SIN PAN ASSY TA	EACH	17.000				
72400200	REMOV SIN PAN ASSY TB	EACH	65.000				
72400500	RELOC SIN PAN ASSY TA	EACH	7.000				
72400600	RELOC SIN PAN ASSY TB	EACH	4.000				
73600100	REMOV OH SIN STR-SPAN	EACH	2.000				
73600200	REMOV OH SIN STR-CANT	EACH	1.000				
73602000	REM OVHD SN STR-BR MT	EACH	1.000				
73700100	REM GR-MT SIN SUPPORT	EACH	23.000				
73700200	REM CONC FDN-GR MT	EACH	23.000				
73700300	REM CONC FDN-OVHD	EACH	5.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
78100100	RAISED REFL PAVT MKR	EACH	977.000				
78100300	REPLACEMENT REFLECTOR	EACH	79.000				
78200500	BARRIER WALL MARKERS	EACH	117.000				
78201000	TERMINAL MARKER - DA	EACH	10.000				
78300200	RAISED REF PVT MK REM	EACH	640.000				
80400100	ELECT SERV INSTALL	EACH	2.000				
80500200	SERV INSTALL TY B	EACH	1.000				
80500205	SERV INSTALL TY B MOD	EACH	2.000				
81400100	HANDHOLE	EACH	1.000				
81400200	HD HANDHOLE	EACH	1.000				
81400400	CONC HANDHOLE	EACH	21.000				
81400600	CONC DBL HANDHOLE	EACH	2.000				
82102400	LUM SV HOR MT 400W	EACH	19.000				
82500530	LT CONT CBRCS 100-240	EACH	1.000				
82500560	LT CONT CBRCS 200-480	EACH	1.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 68201

State Job # - C-94-010-02  
 PPS NBR - 4-01814-0400  
 County Name - TAZEWELL - -  
 Code - 179 - -  
 District - 4 - -  
 Section Number - (90-11)R-2;90(13,14,14-1)R-1

Project Number  
 ACIM-0744/234/094

Route  
 FAI 74

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
82500605	LT CONTROL PC RELAY	EACH	1.000				
84100110	REM TEMP LIGHT UNITS	EACH	4.000				
84200500	REM EX LT UNIT SALV	EACH	16.000				
84200600	REM EX LT U NO SALV	EACH	45.000				
84200800	POLE FOUNDATION RM	EACH	61.000				
85700200	FAC T4 CAB	EACH	1.000				
86301000	TERMINAL FACILITY	EACH	1.000				
86400100	TRANSCEIVER - FIB OPT	EACH	2.000				
88200110	TS BACKPLATE LOUVERED	EACH	20.000				
88800100	PED PUSH-BUTTON	EACH	2.000				
89000200	TEMP TR SIG INSTALL	L SUM	1.000				
89502375	REMOV EX TS EQUIP	EACH	1.000				
89502380	REMOV EX HANDHOLE	EACH	8.000				
89502385	REMOV EX CONC FDN	EACH	8.000				



CONTRACT NUMBER

68201

THIS IS THE TOTAL BID

\$ \_\_\_\_\_

**NOTES:**

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

## RETURN WITH BID

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

#### I. GENERAL

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

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

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

#### II. ASSURANCES

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

##### B. Felons

1. The Illinois Procurement Code provides:

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

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

##### C. Conflicts of Interest

1. The Illinois Procurement Code provides in pertinent part:

Section 50-13. Conflicts of Interest.

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

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

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

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

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

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

## RETURN WITH BID

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

### **D. Negotiations**

1. The Illinois Procurement Code provides in pertinent part:

Section 50-15. Negotiations.

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

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

### **E. Inducements**

1. The Illinois Procurement Code provides:

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

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

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

1. The Illinois Procurement Code provides:

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

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

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

1. The Illinois Procurement Code provides:

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

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

### **H. Confidentiality**

1. The Illinois Procurement Code provides:

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

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

## RETURN WITH BID

### **I. Insider Information**

1. The Illinois Procurement Act provides:

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

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

### **III. CERTIFICATIONS**

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

#### **B. Bribery**

1. The Illinois Procurement Code provides:

Section 50-5. Bribery.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## RETURN WITH BID

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**G. Debt Delinquency**

1. The Illinois Procurement Code provides:

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

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

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

1. The Illinois Procurement Code provides:

Section 50-60(c).

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

**I. ADDENDA**

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

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

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

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

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

---

---

---

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

**TO BE RETURNED WITH BID**

**IV. DISCLOSURES**

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

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

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

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

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

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

**C. Disclosure Form Instructions**

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

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

**CERTIFICATION STATEMENT**

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

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

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

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

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

\_\_\_\_\_  
Date

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

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

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

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

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

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

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

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

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

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

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

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

---



---



RETURN WITH BID/OFFER

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form A Financial Information & Potential Conflicts of Interest Disclosure

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

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

DISCLOSURE OF FINANCIAL INFORMATION

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

FOR INDIVIDUAL (type or print information)

NAME:

ADDRESS

Type of ownership/distributable income share:

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

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

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

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

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

**RETURN WITH BID/OFFER**

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

---

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

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

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

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

---

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

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

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

---

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

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

---

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

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

---

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

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

---

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

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

---

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

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

**RETURN WITH BID/OFFER**

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

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

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

**APPLICABLE STATEMENT**

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

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

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

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

**NOT APPLICABLE STATEMENT**

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

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

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

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

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

RETURN WITH BID/OFFER

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

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

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

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

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

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

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

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

**THE FOLLOWING STATEMENT MUST BE SIGNED**

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

## **RETURN WITH BID**

### **SPECIAL NOTICE TO CONTRACTORS**

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

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

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



**RETURN WITH BID**

**Contract No. 68201  
TAZEWELL County  
Section (90-11)R-2;90(13,14,14-1)R-1  
Project ACIM-744(234)94  
Route FAI 74  
District 4 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. 68201  
TAZEWELL County  
Section (90-11)R-2;90(13,14,14-1)R-1  
Project ACIM-744(234)94  
Route FAI 74  
District 4 Construction Funds**

PROPOSAL SIGNATURE SHEET

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

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

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

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

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

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

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

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

RETURN WITH BID



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

Item No.
Letting Date

KNOW ALL MEN BY THESE PRESENTS, That We

as PRINCIPAL, and

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

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

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

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

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

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

Notary Certification for Principal and Surety

STATE OF ILLINOIS,
COUNTY OF

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

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

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

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

My commission expires Notary Public

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

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

# PROPOSAL ENVELOPE



## PROPOSALS

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

Item No.	Item No.	Item No.

Submitted By:

Name:
Address:
Phone No.

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

Engineer of Design and Environment - Room 323  
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. 68201  
TAZEWELL County  
Section (90-11)R-2;90(13,14,14-1)R-1  
Project ACIM-744(234)94  
Route FAI 74  
District 4 Construction Funds**



**Illinois Department of Transportation**



## NOTICE TO BIDDERS

- 1. TIME AND PLACE OF OPENING BIDS.** Sealed proposals for the improvement described herein will be received by the Department of Transportation at the Harry R. Hanley Building, 2300 South Dirksen Parkway, in Springfield, Illinois until 10:00 o'clock a.m., April 29, 2005. All bids will be gathered, sorted, publicly opened and read in the auditorium at the Department of Transportation's Harry R. Hanley Building shortly after the 10:00 a.m. cut off time.
- 2. DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 68201  
TAZEWELL County  
Section (90-11)R-2;90(13,14,14-1)R-1  
Project ACIM-744(234)94  
Route FAI 74  
District 4 Construction Funds**

**This project consists of the reconstruction of the westbound lanes of I-74 and associated arterial streets from North Main Street to Washington Street in East Peoria. This work includes bridge removal and replacement, earth excavation, pavement/ramp removal and replacement, storm sewer, permanent and temporary erosion control, retaining walls, traffic signals, signing and lighting.**

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

By Order of the  
Illinois Department of Transportation

Timothy W. Martin, Secretary

BD 351 (Rev. 01/2003)

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

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

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

SUPPLEMENTAL SPECIFICATIONS

<u>Std. Spec. Sec.</u>	<u>Page No.</u>
101 Definition of Terms .....	1
105 Control of Work .....	2
205 Embankment .....	3
251 Mulch .....	4
281 Riprap.....	5
282 Filter Fabric for Use With Riprap .....	8
285 Concrete Revetment Mats.....	10
311 Granular Subbase .....	14
351 Aggregate Base Course.....	15
440 Removal of Existing Pavement and Appurtenances .....	16
442 Pavement Patching .....	17
449 Removal and Replacement of Preformed Elastomeric Compression Joint Seal .....	18
481 Aggregate Shoulders .....	19
501 Removal of Existing Structures .....	20
503 Concrete Structures .....	21
505 Steel Structures .....	22
506 Cleaning and Painting Metal Structures .....	25
508 Reinforcement Bars .....	26
512 Piling .....	27
540 Box Culverts.....	28
589 Elastic Joint Sealer .....	30
602 Catch Basin, Manhole, Inlet, Drainage Structures and Valve Vault Construction, Adjustment and Reconstruction .....	31
603 Adjusting Frames and Grates of Drainage and Utility Structures .....	32
610 Shoulder Inlets with Curb .....	33
665 Woven Wire Fence .....	34
669 Removal and Disposal of Regulated Substances .....	35
671 Mobilization .....	36
702 Work Zone Traffic Control Devices .....	37
1003 Fine Aggregates .....	38
1004 Coarse Aggregate .....	39
1005 Stone, Concrete Blocks and Broken Concrete for Erosion Protection, Sediment Control and Rockfill .....	42
1006 Metals .....	46
1007 Timber and Preservative Treatment .....	49
1012 Hydrated Lime .....	50
1020 Portland Cement Concrete .....	51
1021 Concrete Admixtures .....	58
1022 Concrete Curing Materials .....	59
1024 Nonshrink Grout .....	61
1041 Brick .....	63
1043 Precast Reinforced Concrete Manhole Sections and Adjusting Rings.....	64
1056 Preformed Flexible Gaskets and Mastic Joint Sealer for Sewer and Culvert Pipe .....	66
1059 Elastic Joint Sealers .....	67
1060 Waterproofing Materials .....	68
1069 Pole and Tower .....	69
1070 Foundation and Breakaway Devices .....	70
1077 Post and Foundation .....	72
1080 Fabric Materials .....	73
1081 Materials For Planting .....	76
1083 Elastomeric Bearings .....	77
1094 Overhead Sign Structures .....	78
1103 Portland Cement Concrete Equipment .....	79

RECURRING SPECIAL PROVISIONS

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

<u>CHECK SHEET #</u>	<u>PAGE NO.</u>
1 X State Required Contract Provisions All Federal-aid Construction Contracts (Eff. 2-1-69) (Rev. 10-1-83) ....	80
2 X Subletting of Contracts (Federal-aid Contracts) (Eff. 1-1-88) (Rev. 5-1-93).....	82
3 X EEO (Eff. 7-21-78) (Rev. 11-18-80) .....	83
4 Specific Equal Employment Opportunity Responsibilities NonFederal-aid Contracts (Eff. 3-20-69) (Rev. 1-1-94) .....	94
5 Required Provisions - State Contracts (Eff. 4-1-65) (Rev. 4-1-93).....	100
6 Reserved .....	105
7 X Asphalt Quantities and Cost Reviews (Eff. 7-1-88).....	106
8 X National Pollutant Discharge Elimination System Permit (Eff. 7-1-94) (Rev. 1-1-03).....	107
9 Haul Road Stream Crossings, Other Temporary Stream Crossings and In-Stream Work Pads (Eff. 1-2-92) (Rev. 1-1-98) .....	108
10 Construction Layout Stakes Except for Bridges (Eff. 1-1-99) (Rev. 1-1-02).....	109
11 X Construction Layout Stakes (Eff. 5-1-93) (Rev. 1-1-02).....	112
12 Use of Geotextile Fabric for Railroad Crossing (Eff. 1-1-95) (Rev. 1-1-97).....	115
13 Asphaltic Emulsion Slurry Seal and Fibrated Asphaltic Emulsion Slurry Seal (Eff. 8-1-89) (Rev. 2-1-97) ....	117
14 Bituminous Surface Treatments Half-Smart (Eff. 7-1-93) (Rev. 1-1-97) .....	123
15 X Quality Control/Quality Assurance of Bituminous Concrete Mixtures (Eff. 1-1-00) (Rev. 3-1-05) .....	129
16 Subsealing of Concrete Pavements (Eff. 11-1-84) (Rev. 2-1-95).....	148
17 X Bituminous Surface Removal (Cold Milling) (Eff. 11-1-87) (Rev. 10-15-97).....	152
18 X Resurfacing of Milled Surfaces (Eff. 10-1-95) .....	154
19 PCC Partial Depth Bituminous Patching (Eff. 1-1-98).....	155
20 Patching with Bituminous Overlay Removal (Eff. 10-1-95) (Rev. 7-1-99) .....	157
21 Reserved .....	159
22 X Protective Shield System (Eff. 4-1-95) (Rev. 1-1-03).....	160
23 Polymer Concrete (Eff. 8-1-95) (Rev. 3-1-05).....	162
24 X Controlled Low-Strength Material (CLSM) (Eff. 1-1-90) (Rev. 3-1-05).....	164
25 Pipe Underdrains (Eff. 9-9-87) (Rev. 1-1-98).....	169
26 X Guardrail and Barrier Wall Delineation (Eff. 12-15-93) (Rev. 1-1-97) .....	170
27 Bicycle Racks (Eff. 4-1-94) (Rev. 1-1-97) .....	175
28 Reserved .....	177
29 Reserved .....	178
30 Reserved .....	179
31 X Night Time Inspection of Roadway Lighting (Eff. 5-1-96).....	180
32 Reserved .....	181
33 X English Substitution of Metric Bolts (Eff. 7-1-96).....	182
34 X English Substitution of Metric Reinforcement Bars (Eff. 4-1-96) (Rev. 1-1-03).....	183
35 Polymer Modified Emulsified Asphalt (Eff. 5-15-89) (Rev. 1-1-04).....	185
36 Corrosion Inhibitor (Eff. 3-1-80) (Rev. 7-1-99) .....	187
37 Quality Control of Concrete Mixtures at the Plant-Single A (Eff. 8-1-00) (Rev. 1-1-04) .....	188
38 Quality Control of Concrete Mixtures at the Plant-Double A (Eff. 8-1-00) (Rev. 1-1-04) .....	194
39 X Quality Control/Quality Assurance of Concrete Mixtures (Eff. 4-1-92) (Rev. 3-1-05).....	202
40 X Traffic Barrier Terminal Type 1, Special (Eff. 8-1-94) (Rev. 1-1-03) .....	215
41 Reserved .....	216
42 X Segregation Control of Bituminous Concrete (Eff. 7-15-97).....	217
43 Reserved .....	220

## TABLE OF CONTENTS

LOCATION OF PROJECT .....	1
DESCRIPTION OF PROJECT .....	1
DATES OF COMPLETION PLUS WORKING DAYS .....	1
FAILURE TO COMPLETE WORK ON TIME .....	2
INCENTIVE PAYMENT PLAN .....	2
COOPERATION WITH UTILITY .....	4
I-74 MAINLINE PEAK TRAFFIC PERIODS .....	4
WORKING RESTRICTIONS .....	5
SPECIAL EVENTS .....	9
COOPERATION WITH OTHER CONTRACTORS .....	10
TRAFFIC CONTROL PLAN .....	10
SHALE AND COAL MATERIAL .....	13
FILL EXISTING STORM SEWERS .....	13
END SECTION TO BE REMOVED .....	16
CONCRETE HEADWALL FOR PIPE UNDERDRAIN REMOVAL .....	16
TEMPORARY EROSION CONTROL SEEDING .....	17
SUB-BASE GRANULAR MATERIAL (SPECIAL) .....	17
TOPSOIL EXCAVATION AND PLACEMENT (SPECIAL) .....	17
AGGREGATE SPECIAL .....	18
PORTLAND CEMENT CONCRETE BASE COURSE 250 MM AND PORTLAND CEMENT CONCRETE BASE COURSE WIDENING 250 MM .....	18
PAVED DITCH REMOVAL, SPECIAL .....	19
BITUMINOUS MEDIAN SURFACE REMOVAL .....	19
CONCRETE BARRIER REMOVAL .....	20
PORTLAND CEMENT CONCRETE SHOULDER REMOVAL .....	20
CLASS B PATCHES (SPECIAL) .....	21
REMOVAL OF EXISTING STRUCTURES .....	21
REMOVAL OF THE EXISTING BEARINGS .....	22
REMOVAL OF THE EXISTING CONCRETE DECK .....	22
PIPE CULVERT REMOVAL .....	23
CONCRETE HEADWALL REMOVAL .....	23
STRUCTURAL STEEL REMOVAL .....	24
JACK AND REMOVE EXISTING BEARINGS .....	24
JACKING AND SHORING EXISTING GIRDERS .....	25
CONCRETE COLLAR, CULVERT NO. 1 .....	26
SLOPEWALL 150 .....	27
METAL END SECTIONS .....	27
PIPE ELBOWS .....	27



MANHOLES, TYPE A, 1.2M DIAMETER, FLAT SLAB TOP .....	28
MANHOLES, SPECIAL, 1.2 M DIAMETER .....	28
INLETS, SPECIAL .....	29
DRAINAGE STRUCTURES, TYPE 1A WITH ONE TYPE 20 FRAME AND GRATE .....	29
FRAMES AND GRATES, TYPE 20, INSTALL ONLY .....	29
CONCRETE HEADWALL .....	30
CLASS SI CONCRETE (OUTLET) .....	30
CLASS SI CONCRETE, SPECIAL .....	31
CONCRETE GUTTER, TYPE A (MODIFIED) .....	31
CONCRETE MEDIAN TYPE SM .....	31
CONCRETE THRUST BLOCKS.....	32
LIGHTWEIGHT CELLULAR CONCRETE FILL.....	32
REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINAL, TYPE I SPECIAL .....	35
CONCRETE BARRIER TRANSITION (MODIFIED).....	35
CHAIN LINK FENCE REMOVAL .....	36
CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED .....	36
HIGHWAY-RAIL INFORMATION SIGN.....	37
OVERHEAD SIGN STRUCTURES - SPECIAL.....	40
RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL .....	41
EXISTING INTERCONNECT, BLACKJACK.....	41
PROCEDURE FOR SUBMITTAL AND RESPONSE TO PLAN QUESTIONS.....	42
SERVICE INSTALLATION, TYPE B (MODIFIED).....	44
CONCRETE HANDHOLE .....	44
CONCRETE DOUBLE HANDHOLE .....	45
LIGHT POLE, GALVANIZED STEEL, 13.5 M M. H., 4.5 M DAVIT ARM .....	45
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE .....	46
TEMPORARY TRAFFIC SIGNALS .....	46
TEMPORARY TRAFFIC SIGNAL INSTALLATION (WEST BOUND RAMPS) .....	47
REMOVE EXISTING HANDHOLE.....	48
REMOVE EXISTING CONCRETE FOUNDATION.....	48
ABANDON EXISTING CULVERT.....	48
PRESTAGE SITE CONSTRUCTION MEETINGS.....	49
REMOVAL OF ABANDONED UNDERGROUND UTILITIES .....	49
NATIONWIDE 404 PERMIT REQUIREMENTS .....	49
BORROW AND FURNISHED EXCAVATION.....	50
EMBANKMENT .....	50
STONE DUMPED RIPRAP CLASS A4 .....	51
PROOF ROLLING.....	51
TEMPORARY PAVEMENT .....	51

BITUMINOUS BASE COURSE 250 MM (10").....	52
BITUMINOUS BASE COURSE WIDENING .....	52
PLACEMENT OF BITUMINOUS SURFACE COURSES .....	52
BITUMINOUS SURFACE COURSE SURFACE TESTS .....	52
BITUMINOUS SURFACE REMOVAL, 25 MM (1") .....	52
BITUMINOUS SURFACE REMOVAL, 40 MM (1½") .....	52
BITUMINOUS SURFACE REMOVAL, 75 MM (3") .....	52
BITUMINOUS SURFACE REMOVAL, VARIABLE DEPTH.....	55
PROTECTION OF FRAMES AND LIDS OF UTILITY STRUCTURES.....	58
PAVEMENT DRAINAGE AFTER COLD MILLING .....	58
CLASS B PATCHES, TYPE II, 375 MM .....	58
REFLECTIVE CRACK CONTROL TREATMENT.....	59
BITUMINOUS SHOULDER RESURFACING CONSTRUCTED SIMULTANEOUSLY WITH MAINLINE PAVING.....	59
SEEPAGE COLLAR .....	60
PIPE CULVERTS.....	60
BACKFILL - PIPE CULVERTS.....	60
INLETS, TYPE G-1, SPECIAL.....	60
INLETS, TYPE G-1, DOUBLE, SPECIAL.....	61
INLET-MANHOLE, TYPE G-1, 1.2 M (4') DIAMETER.....	61
INLET-MANHOLE, TYPE G-1, 1.5 M (5') DIAMETER.....	62
GUARDRAIL AGGREGATE EROSION CONTROL .....	62
FLEXIBLE DELINEATOR MAINTENANCE .....	62
FLEXIBLE DELINEATORS.....	63
PERMANENT SURVEY MARKER, TYPE 1, BRIDGE PLACEMENT .....	64
SPEEDING PENALTY .....	64
TRENCH AND BACKFILL, SPECIAL FOR CONDUIT INSTALLATION BENEATH BITUMINOUS SHOULDERS.....	64
TERMINAL FACILITY .....	65
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18.....	66
DETECTOR LOOP, SPECIAL FOR TRAFFIC COUNTERS .....	66
GRANULAR AGGREGATE COURSES .....	67
RAP MATERIALS - CRUSHED STEEL SLAG .....	67
SELF-CONSOLIDATING CONCRETE FOR CAST-IN-PLACE CONCRETE ITEMS .....	67
DUST CONTROL.....	70
COMPLIANCE WITH LOCAL LAWS, ORDINANCES AND REGULATIONS (CITY OF EAST PEORIA) .....	74

OVERSIZED LOADS ..... 74

EQUIPMENT OPERATIONS ..... 74

COORDINATION MEETINGS ..... 75

RIGHT OF WAY RESTRICTIONS ..... 75

NOISE RESTRICTIONS (RESIDENTIAL ONLY) ..... 75

UTILITY REMOVAL ..... 75

FORMAL PARTNERING..... 76

PROGRESS SCHEDULE ..... 76

PROSECUTION OF WORK ..... 79

SIGN FACE..... 79

REPLACEMENT OF UNSUITABLE MATERIAL ..... 80

TRENCH BACKFILL, SPECIAL ..... 80

GEOTECHNICAL FABRIC FOR GROUND STABILIZATION ..... 84

SUB-BASE GRANULAR MATERIAL, TYPE A AND SUB-BASE GRANULAR MATERIAL, TYPE B..... 84

BITUMINOUS BASE COURSE AND BITUMINOUS BASE COURSE WIDENING ..... 84

EXISTING BITUMINOUS MIXES CONTAINING STEEL SLAG..... 85

EXTENDED LIFE PAVEMENT (30 YEAR)..... 85

WHITEWASHING BITUMINOUS CONCRETE BASE OR SUBBASE..... 88

PAVEMENT REINFORCEMENT ..... 89

WARRANTY FOR CONCRETE PAVEMENTS (BDE) ..... 89

METRIC PAVEMENT DIMENSIONS..... 95

TYPE A FINAL FINISH OF PORTLAND CEMENT CONCRETE PAVEMENT WITH VARIABLY SPACED TINIING ..... 95

BRIDGE APPROACH PAVEMENT (SPECIAL)..... 96

EXPANSION JOINT 75 MM (3") ..... 97

LONGITUDINAL CONSTRUCTION JOINTS..... 97

BRACED EXCAVATION..... 97

EXCAVATION FOR STRUCTURES..... 98

FORM LINER LIMESTONE SURFACE, FORM LINER GRID & FIN SURFACE, FORM LINER PARAPET SURFACE ..... 98

INSTALL BOLLARD AND LUMINAIRES ..... 103

SILICONE JOINT SEALER AT BOLLARDS..... 106

SURFACE PREPARATION AND PAINTING OF GALVANIZED STEEL TRAFFIC STRUCTURES ..... 109

GALVANIZED STEEL TRAFFIC STRUCTURES..... 121

ALUMINUM RAILING, TYPE H, SPECIAL ..... 121

ALUMINUM RAILING, TYPE L, SPECIAL..... 121

PERMANENT GROUND ANCHORS .....	122
DRIVING STEEL H-PILES.....	133
STORM SEWER REMOVAL .....	135
PIPE UNDERDRAIN .....	135
CONCRETE BARRIER .....	136
SHOULDER RUMBLE STRIPS .....	139
ENGINEER'S FIELD OFFICE, TYPE A (SPECIAL) .....	140
FORMED CONCRETE REPAIR.....	143
DRILLED SHAFTS.....	145
DRAINAGE SYSTEM.....	154
FLOATING BEARINGS.....	155
FABRIC REINFORCED ELASTOMERIC TROUGH.....	158
CLEANING AND PAINTING CONTACT SURFACE AREAS OF EXISTING STEEL STRUCTURES.....	159
CLEANING AND PAINTING NEW METAL STRUCTURES .....	164
CLEANING AND PAINTING EXISTING STEEL STRUCTURES .....	170
CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES.....	190
FABRIC REINFORCED ELASTOMERIC MAT.....	212
DRILLED SOLDIER PILE RETAINING WALL.....	212
REMOVAL OF EXISTING NON COMPOSITE BRIDGE DECKS.....	219
BITUMINOUS CONCRETE SURFACE COURSE (BDE).....	219
BITUMINOUS EQUIPMENT, SPREADING AND FINISHING MACHINE (BDE) .....	220
BRIDGE DECK CONSTRUCTION (BDE) .....	220
BUTT JOINTS (BDE) .....	222
COARSE AGGREGATE FOR TRENCH BACKFILL, BACKFILL AND BEDDING (BDE) .....	222
CONCRETE ADMIXTURES (BDE) .....	228
CURING AND PROTECTION OF CONCRETE CONSTRUCTION (BDE) .....	232
DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE) .....	239
EPOXY PAVEMENT MARKING (BDE) .....	246
EROSION AND SEDIMENT CONTROL DEFICIENCY DEDUCTION (BDE) .....	247
EXPANSION JOINTS (BDE).....	247
FLAGGER VESTS (BDE) .....	248
FREEZE-THAW RATING (BDE).....	248
FURNISHED EXCAVATION (BDE) .....	248
MULTILANE PAVEMENT PATCHING (BDE).....	249
NOTCHED WEDGE LONGITUDINAL JOINT (BDE).....	250
ORGANIC ZINC RICH PAINT SYSTEM.....	251
PARTIAL PAYMENTS (BDE).....	254
PAVEMENT AND SHOULDER RESURFACING (BDE) .....	255
PAVEMENT THICKNESS DETERMINATION FOR PAYMENT (BDE).....	256

PAYMENTS TO SUBCONTRACTORS (BDE) .....	263
PERSONAL PROTECTIVE EQUIPMENT (BDE) .....	263
PLASTIC BLOCKOUTS FOR GUARDRAIL (BDE) .....	264
POLYUREA PAVEMENT MARKING (BDE) .....	264
PORTABLE CHANGEABLE MESSAGE SIGNS (BDE) .....	270
PORTLAND CEMENT (BDE).....	271
PORTLAND CEMENT CONCRETE (BDE) .....	271
PORTLAND CEMENT CONCRETE PATCHING (BDE) .....	272
PRECAST CONCRETE PRODUCTS (BDE).....	275
PRECAST, PRESTRESSED CONCRETE MEMBERS (BDE).....	276
PUBLIC CONVENIENCE AND SAFETY (BDE) .....	277
RAISED REFLECTIVE PAVEMENT MARKERS (BRIDGE) (BDE).....	278
RAP FOR USE IN BITUMINOUS CONCRETE MIXTURES (BDE).....	278
REMOVE AND RE-ERECT STEEL PLATE BEAM GUARDRAIL AND TRAFFIC BARRIER TERMINALS (BDE).....	281
SEEDING AND SODDING (BDE).....	282
SUBGRADE PREPARATION (BDE) .....	284
SUPERPAVE BITUMINOUS CONCRETE MIXTURES (BDE).....	284
SUPERPAVE BITUMINOUS CONCRETE MIXTURES (LOW ESAL) (BDE).....	291
SURFACE TESTING OF PAVEMENTS (BDE) .....	295
SUSPENSION OF SLIPFORMED PARAPETS (BDE) .....	301
TEMPORARY EROSION CONTROL (BDE) .....	302
TRAFFIC BARRIER TERMINALS (BDE) .....	303
TRAFFIC CONTROL DEFICIENCY DEDUCTION (BDE) .....	304
TRAINING SPECIAL PROVISIONS .....	304
TRANSIENT VOLTAGE SURGE SUPPRESSION (BDE).....	307
TRUCK BED RELEASE AGENT (BDE) .....	308
WEIGHT CONTROL DEFICIENCY DEDUCTION.....	308
WORK ZONE SPEED LIMIT SIGNS (BDE) .....	309
WORK ZONE TRAFFIC CONTROL DEVICES (BDE) .....	310
SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE) .....	311
STEEL COST ADJUSTMENT (BDE).....	312
STORM WATER POLLUTION PREVENTION PLAN.....	316

## STATE OF ILLINOIS

---

### SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2002, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," 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 74 (I-74), Section (90-11)R-2,90(13,14,14-1)R-1 in Tazewell County and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

#### LOCATION OF PROJECT

The project is located along the existing I-74 beginning just west of the bridge over TP&W Railroad and extends easterly 2.5 kilometers (1.6 miles) to east of the Washington Street interchange in East Peoria.

#### DESCRIPTION OF PROJECT

The project consists of the reconstruction of the westbound lanes of I-74 and associated arterial streets from North Main Street to Washington Street. This work includes bridge removal and replacement, earth excavation, pavement/ramp removal and replacement, storm sewer, permanent and temporary erosion control, retaining walls, traffic signals, signing and lighting. The work also includes the pavement overlay from the intersection of the Washington Street interchange easterly to Pinecrest Drive.

#### DATES OF COMPLETION PLUS WORKING DAYS

Effective January 27, 2005

The Contractor shall schedule his/her operations so as to complete implementation of Stage 3 traffic control, closing the existing I-74 westbound lanes and directing westbound I-74 traffic to the eastbound lanes and shoulder no later than 11:59 PM on April 1, 2006 simultaneously with other Stage 3 contractors.

The Contractor shall schedule her/his operations so as to complete all work, except work in Plan Set 4 and as specified below, and open all roadways to traffic no later than 11:59 p.m. on November 17, 2006. The Contractor will be allowed 30 working days, after the November 17, 2006 completion date to complete the work within Plan Set 4, punch list item, and any miscellaneous clean-up within Plan Sets 1, 2, and 3.

Only punch list and clean up work within the limits of plan set 1, 2 and 3 which can be performed without lane closure will be allowed after the November 17, 2006 completion date.

The Contractor should note that these completion dates are based on an expedited work schedule.

#### **FAILURE TO COMPLETE WORK ON TIME**

Effective January 27, 2005

Should the Contractor fail to complete all work on the April 1, 2006 completion date as specified in the Special Provision for "Dates of Completion Plus Working Days", or within such extended time allowed by the Department, the Contractor shall be liable to the Department in the amount of \$10,000, not as a penalty but as liquidated and ascertained damages for each calendar day beyond the date of completion or extended time as may be allowed. Such damages may be deducted by the Department from any monies due the Contractor.

Should the Contractor fail to complete all work within plan set 1, 2 and 3 on or before the November 17, 2006 completion date as specified in the Special Provision for "Dates of Completion Plus Working Days", or within such extended time allowed by the Department, the Contractor shall be liable to the Department in the amount of \$10,000, not as a penalty but as liquidated and ascertained damages for each calendar day beyond the date of completion or extended time as may be allowed.

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

A calendar day is every day on the calendar and starts at 12:00 midnight and ends at the following 12:00 midnight, twenty-four hours later. Liquidated damages will not be assessed for any day less than twenty-four hours.

Should the Contractor fail to complete all work within Plan Set 4 punch list items, and any associated clean up with plan sets 1, 2 ND 3 within 30 working days after the November 17, 2006, Section 108.09 of the Standard Specifications shall apply.

#### **INCENTIVE PAYMENT PLAN**

Effective January 27, 2005

The Contractor shall be entitled to an incentive payment for completing necessary contract items and safely opening all roadways to traffic on November 17, 2006 in accordance with the requirements of the Special Provision "Date of Completion Plus Working Days."

The incentive payment shall be paid at the rate of \$10,000 per calendar day for each day prior to the November 17, 2006 completion date, as indicated in TABLE A. The maximum payment under this incentive plan will be limited to 30 calendar days.

TABLE A

<u>Date Completed</u>	<u>Incentive Payment</u>	<u>Date Completed</u>	<u>Liquidated Damages</u>
November 17, 2006	*	November 17, 2006	*
November 16, 2006	\$10,000	November 18, 2006	\$10,000
November 15, 2006	\$20,000	November 19, 2006	\$20,000
November 14, 2006	\$30,000	November 20, 2006	\$30,000
November 13, 2006	\$40,000	November 21, 2006	\$40,000
November 12, 2006	\$50,000	November 22, 2006	\$50,000
November 11, 2006	\$60,000	November 23, 2006	\$60,000
November 10, 2006	\$70,000	November 24, 2006	\$70,000
November 9, 2006	\$80,000	November 25, 2006	\$80,000
November 8, 2006	\$90,000	November 26, 2006	\$90,000
November 7, 2006	\$100,000	November 27, 2006	\$100,000
November 6, 2006	\$110,000	November 28, 2006	\$110,000
November 5, 2006	\$120,000	November 29, 2006	\$120,000
November 4, 2006	\$130,000	November 30, 2006	\$130,000
November 3, 2006	\$140,000	December 1, 2006	\$140,000
November 2, 2006	\$150,000		**
November 1, 2006	\$160,000		
October 31, 2006	\$170,000		
October 30, 2006	\$180,000		
October 29, 2006	\$190,000		
October 28, 2006	\$200,000		
October 27, 2006	\$210,000		
October 26, 2006	\$220,000		
October 25, 2006	\$230,000		
October 24, 2006	\$240,000		
October 23, 2006	\$250,000		
October 22, 2006	\$260,000		
October 21, 2006	\$270,000		
October 20, 2006	\$280,000		
October 19, 2006	\$290,000		
October 18, 2006	\$300,000		

\* The Completion Date specified in the contract.

\*\* The liquidated damages shall be charged until work is completed.

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

Should the Contractor be delayed in the commencement, prosecution or completion of the work for any reason, there shall be no extension of the incentive payment completion date even though there may be granted an extension of time for completion of the work. No incentive will be paid if the Contractor fails to complete the work before the specified completion date.



Failure by the Contractor to complete all work as specified above before November 17, 2006 shall release and discharge the State, the Department and all of its officers, agents and employees from any and all claims and demands for payment of any incentive amount or damages arising from the refusal to pay an incentive amount.

## **COOPERATION WITH UTILITY**

The Contractor shall coordinate his/her operations with AmerenCILCO for the installation of electrical ducts in the excavation of the Pier 3 extension for S.N. 090-0009. The ducts will be placed after the construction of the extension foundation and before/during the placement of the backfill for the Pier.

## **I-74 MAINLINE PEAK TRAFFIC PERIODS**

Effective January 27, 2005

Due to the high traffic volumes on the I-74 mainline, two lanes shall be open to westbound traffic Monday through Friday except legal holidays between the hours of 6:15 AM to 8:30 AM and two lanes shall be open to eastbound traffic Monday through Friday except legal holidays between the hours of 2:45 PM to 5:30 PM. Legal holidays shall be as defined in Article 107.09 of the Standard Specifications.

The I-74 Main Line Peak Traffic period restrictions to require two lanes (as opposed to one lane) in the direction of travel during the defined applicable peak traffic period shall not apply to the following locations for the indicated construction period:

- I-74 eastbound between Ramp L-1 exit ramp and Ramp L-2 entrance ramp.
- I-74 westbound between Ramp L-4 entrance ramp and the westbound cross over at Sta. 154+800 in Stage 3A.
- I-74 westbound between Ramp L-4 and approximately Station 155+500 in Stage 3B.
- I-74 eastbound and westbound from the east end of the project to Station 154+780 while the pavement is being patched.

Any lane less than 3.3 m wide shall be considered obstructed.

At the time Contract 68201 is awarded, Contracts 68195 and 68199 will already be in progress.

Failure to Open Traffic Lanes to Traffic: Should the Contractor fail to completely open traffic lanes to traffic in accordance with the limitations specified above, the Contractor shall be liable to the Department in the amount of \$10,000 for any portion of the first hour lanes are closed or obstructed and \$2,500 every 15 minutes thereafter not as a penalty but as liquidated and ascertained damages. Such damages will be deducted by the Department from the monies due the Contractor. These damages shall apply during the contract time including any extensions of the contract time.

In fixing the damages as set out herein, the desire is to establish a certain mode of calculation for the work because the Department's actual loss, in the event of delay, cannot be

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

## **WORKING RESTRICTIONS**

Effective January 27, 2005

### GENERAL

The stage construction and traffic control for this contract and other concurrent corridor construction contracts are designed to function as a single unit. The implementation and removal of traffic control must occur simultaneously at times. Any proposed changes to the proposed staging must be considered carefully as they may affect the overall project traffic control. Any proposed traffic control changes must be submitted to the Engineer in writing along with documentation of coordination with all other contractors as listed in the Special Provision entitled "Cooperation With Other Contractors". Any request for changes that have not been coordinated with all other project contractors will be rejected. All changes must be approved by the Engineer prior to implementation.

If the Contractor(s) elects to change the proposed staging and/or traffic control plan, the Contractor(s) shall incur all additional costs to facilitate the change. These may include, but are not limited to supplemental excavation, temporary pavement, temporary concrete barrier, temporary sheeting, and temporary signing or striping. No additional payment will be made for any staging or traffic control alterations, modifications or additions initiated by the Contractor(s).

For any change, the number of traffic lanes must not be less than those shown in the Maintenance of Traffic (MOT) plans of Contract 68201 and Stage 3 concurrent corridor contracts for each sub-stage represented within their respective MOT plans.

A minimum of one lane in each direction must be maintained at all times on the I-74 mainline. A minimum lane width of 3.3 m shall be maintained on all I-74 lanes open to traffic. A minimum lane width of 3.6 m shall be maintained on all ramps open to traffic. Lanes shall be clear, unobstructed and free of channelizing devices or other obstacles. See special provision entitled "I-74 Mainline Peak Traffic Periods" for additional working restriction.

The I-74 westbound lanes from west of the TP&W RR (station 152+446) to East of the Washington Street Interchange approximately at station 154+970 shall be constructed in the calendar year 2006 as shown in the plans.

Removal, delivery and erection of bridge beams specifically for the following bridges:

- I-74 WB Bridge over Main Street
- I-74 WB Bridge over Washington Street
- I-74 WB Bridge over Camp Street, TP&W RR and Farm Creek Runoff Canal
- Ramp K-2 Bridge over Main Street

shall be limited to either weekends or 6:00 PM to 6:00 AM on weekdays. The Contractor may temporarily stop traffic on North Main Street, Camp Street and Washington Street for 20 minutes at a time on weekends or 6:00 p.m. to 6:00 a.m. on weekdays to remove or set beams.

Access to WB and EB Mainline ramps shall be maintained during the 20-minute closure.

The expense of weekend or nighttime erection or removal shall not be paid for separately but shall be included in the cost of the pay items associated with the work.

Temporarily stopping traffic or closures for the removal or erection of beams will not be permitted at any time during the holiday period for legal holidays as specified in Article 107.09 of the Standard Specifications or other periods specified in the special provision entitled "Special Events."

A minimum of one lane (3.3 m minimum width) in each direction must be maintained on North Main Street during off peak hour with the exception of temporary short-term closures to remove and set bridge beams and to perform milling and temporary bituminous placement. Temporary lane closures on North Main Street shall not be allowed during peak hours. The peak hour definition on North Main Street is Monday to Friday between 7:00 AM to 8:15 AM and between 3:30 PM to 5:30 PM.

Failure to Open Traffic Lanes to Traffic: Should the Contractor fail to open North Main Street to two (2) lanes of traffic following the temporary short term lane closure within the peak traffic hour period in accordance with the limitations specified above, the contractor shall be liable to amount of \$10,000 for any portion of the first hour lanes are closed or obstructed and \$2,500 every 15 minutes thereafter not as a penalty but as liquidated and ascertained damages. Such damages will be deducted by the Department from the monies due the Contractor. These damages shall apply during the contract time including any extensions of the contract time.

Washington Street under the I-74 WB Bridge shall be open to at least one lane of traffic (3.1 Minimum) in each direction at all times.

A minimum of one (1) lane of traffic shall be maintained on westbound Camp Street under the I-74 mainline Bridge and two(2) lanes of traffic shall be maintained on eastbound Camp Street under the I-74 mainline bridge at all times.

Special attention is called to Article 105.08 of the Standard Specifications regarding "Cooperation Between Contractors."

"Winter shutdown" as shown in the plans shall be implemented no later than 11:59 PM on November 18, 2005. See special provision entitled "Dates of Completion Plus Working Days".

Temporarily stopping traffic or closures for the removal or erection of beams will not be permitted at any time during the holiday period for legal holidays as specified in Article 107.09 of the Standard Specifications or other periods specified in the special provision entitled "Special Events."

All lanes shall be open to traffic on legal holidays as defined in Article 107.09 of the Standard Specifications. Any lane less than 3.1 m wide shall be considered obstructed.

Guardrail located in Plan Set 4 from eastbound Sta. 155+041.9 to 155+387.25 and westbound Sta. 154+989.8 to 155+455.65 shall be removed and replaced within the same work day. At these two locations the edge of shoulder drop off presents a severe hazard. For this reason any guardrail removed shall be replaced within the same work day. In the event the Contractor is not able to complete each location in a work day a temporary connection between the existing and proposed guardrail may be installed at no cost to the Department.

PRE-STAGE 3 (Award Date through March 31, 2006)

In the period between the award date and March 31, 2006, the Contractor will be allowed to perform work as outlined in the plans for pre-stage 3 work within the following constraints and as specified elsewhere in the special provisions:

- The Contractor may implement traffic control directing eastbound I-74 traffic onto the outside eastbound shoulder so as to permit the placement of temporary concrete barrier along the I-74 eastbound lanes between March 1, 2006 and March 31, 2006. A minimum of two lanes in the I-74 eastbound direction must be maintained at all times with the exception of a minimum of one lane in the I-74 eastbound direction between Ramp L-1 exit ramp to Ramp L-2 entrance ramp must be maintained at all times.
- From award date to November 18, 2005, the contractor shall coordinate with ongoing contracts 68195, 68199 any traffic closure that will impact any placement of traffic control.
- The contractor may implement traffic control to close off existing Ramp 20 (north bound Main Street to westbound I-74) to facilitate construction of the crash investigation site (CIS-I-74-09A) 5 calendar days prior to the implementation of Stage 3A construction schedule for March 31, 2006.
- The Contractor shall not implement traffic control closing the existing I-74 westbound lanes and directing westbound I-74 traffic to the eastbound lanes until April 1, 2006.
- See special provision entitled "I-74 Mainline Peak Traffic Periods" for additional restrictions.
- No lane closures will be permitted on I-74 ramps that are open to traffic except as noted herein.
- The Contractor shall maintain construction lane widths that will allow for safe and efficient removal of snow. On non-interstate roadways with 2 or more lanes in each direction, a minimum lane width of 3.3 m shall be maintained at all times through the winter period. On all other non-interstate roadways, a minimum lane width of 3.3 m must be maintained at all times.
- All cold milled surfaces shall be overlaid prior to winter shutdown. All manholes shall be adjusted to the elevation of the pavement to ease in plowing snow, and re-adjusted to finish grade in the spring. The initial manhole adjustment will be paid for at the contract unit price and any re-adjustment, as directed by the Engineer, will be paid for in accordance with Article 109.04.

STAGE 3 (April 1, 2006 to November 17, 2006)

In the period between April 1, 2006 and November 17, 2006, the contractor will be allowed to perform work as outlined in the plans within the following constraints and as specified elsewhere in the special provisions:

- Existing ramp 21 (westbound I-74 to northbound Main Street) shall remain open at all times throughout stage 3A and their sub-stages. Temporary ramp 19 shall be open prior to closing Ramp 21.
- In Stage 3B. Temporary Ramp 19 shall remain open to traffic until proposed Ramp J-3 is opened. Temporary signals at the Intersection of Ramp 19 and Main Street shall be operable prior to opening Ramp 19 to traffic.
- Proposed Ramp J-3 shall remain open to traffic throughout the remainder of the project. Permanent signals at the intersection of Ramp J-3 and Main Street shall be operable prior to opening Ramp 19 to traffic.
- Intersection of Main Street/Altorfer Lane to remain open at all times with one lane in each direction on Altorfer Lane. A minimum of one southbound lane shall be maintained at all time on the Frontage Road as shown in the Maintenance of Traffic.
- Removal and construction of the proposed pavement at the Main Street/Altorfer Lane intersection shall be limited to 30 Calendar Days. Removal and replacement of pavement in Area "E" as shown in the Maintenance of Traffic shall be limited to a weekend period beginning on Friday at 6:00 PM and ending the following Monday at 5:00 AM.
- National Street Intersection with Main Street shall remain open to traffic at all times. One lane in each direction shall be maintained during non working hours.
- Ramp L-3 shall remain open to Washington Street traffic during Stage 3A of Plan set 2.
- For any change, the number of traffic lanes provided must not be less than those shown in the Maintenance of Traffic (MOT) Plans.
- Any change must provide on and off ramp access equal to or greater than that shown in the plans at each stage or sub-stage at each interchange.
- If the Contractor(s) elects to change the proposed staging and/or traffic control plan, the Contractor(s) shall incur all additional costs to facilitate the change. These may include, but are not limited to supplemental excavation, temporary pavement, temporary concrete barrier, temporary sheeting, and temporary signing or striping. No additional payment will be made for any staging or traffic control alterations, modifications or additions initiated by the Contractor(s).
- For any change, the number of traffic lanes must not be less than those shown in the Maintenance of Traffic (MOT) plans of Contract 68201 and Stage 3 concurrent corridor contracts for each sub-stage represented within their respective MOT plans.

- A minimum of one lane (3.3m minimum width) in each direction must be maintained at all times on the I-74 mainline.
- See special provision entitled “I-74 Mainline Peak Traffic Periods” for additional restrictions.

### **SPECIAL EVENTS**

Effective January 17, 2005

#### East Peoria Festival of Lights Parade

The East Peoria Festival of Lights Parade events are tentatively scheduled for the following dates:

November 26, 2005                      November 25, 2006

The Contractor shall be responsible for verifying the actual dates.

In addition to the requirements of Article 107.09, the contractor shall submit to the Engineer a schedule of the work happening during the week leading to the Parade event, who in turn will provide it to the City of East Peoria 14 days before the aforementioned event.

#### IHSA BASKETBALL TOURNAMENTS

The IHSA Boy’s Basketball Tournaments are tentatively scheduled for the following dates:

March 9-11, 2006      March 16-18, 2006      March 8-10, 2007      March 15-17, 2007

The Contractor shall be responsible for verifying the actual dates.

In addition to the requirements of Article 107.09, construction operations shall not impede or interfere with any traffic as noted herein during the 2006 IHSA Boy’s Basketball Tournaments.

The minimum number of I-74 lanes shall be as indicated in the maintenance of traffic plans during the tournament dates.

#### IHSA STATE SOFTBALL TOURNAMENTS

The IHSA State Softball Tournaments are tentatively scheduled for the following dates:

June 2-4, 2006                      June 9-11, 2006

The Contractor shall be responsible for verifying the actual dates.

In addition to the requirements of Article 107.09, construction operations shall not impede or interfere with any traffic as noted herein during the 2006 IHSA Softball Tournaments. Two I-74 lanes in each direction shall be open to traffic with the exception listed on special provision entitled “I-74 Mainline Peak Traffic Periods”.

**COOPERATION WITH OTHER CONTRACTORS**

Effective July 15, 2003

Revised July 7, 2004

Contract 68195 for the reconstruction of the Riverfront Drive interchange in East Peoria was let on April 25, 2003 and has a completion date of November 18, 2005.

Contract 68199 for the reconstruction of the eastbound lanes of I-74 in East Peoria was let on June 11, 2004 and has a completion date of November 18, 2005.

Contract 68308 for the construction of the temporary informational signing throughout the project was let on March 7, 2003 and has a completion date of November 30, 2006.

Contract 68308 for the construction of the temporary informational signing throughout the project was let on March 7, 2003 and has a completion date of November 30, 2006.

Contract 68226 for the implementation of the Intelligent Transportation System throughout the project was let on January 17, 2003.

Contract 68228 for supplying precast bridge bollards and luminaires for decorative lighting along I-74 from West of Sterling to East of Washington was let on January 18, 2002 and has a completion date of October 31, 2005.

Contract 68231 for supplying the high mast poles for lighting along I-74 from West of Sterling to East of Washington was let on July 30, 2004 and has a completion date of October 31, 2006.

Contract 68408 for supplying the luminaires for lighting along I-74 from West of Sterling to East of Washington was let on July 30, 2004 and has a completion date of October 31, 2006.

**TRAFFIC CONTROL PLAN**

Effective January 31, 2002

Revised July 7, 2004

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

Special attention is called to Section 701 and Articles 107.09 and 107.14 of the Standard Specifications for Road and Bridge Construction and the following Highway Standards relating to traffic control.

701006	701101	701106	701201	701301	701306
701400	701401	701402	701406	701411	701416
701421	701422	701426	701446	701501	701502
701601	701602	701701	701801	702001	

The governing factor in the execution and staging of work for this project is to provide the motoring public with the safest possible travel conditions through the construction zone. The Contractor shall arrange his/her operations to keep the closing of lanes and/or ramps to a minimum.

The Contractor shall be responsible for the proper location, installation, and arrangement of all traffic control devices. Special attention shall be given to existing warning signs and guide signs during all construction operations. Warning signs and existing guide signs with down arrows shall be kept consistent with the barricade placement at all times. The Contractor shall immediately remove, completely cover or turn from the motorist's view all signs which are inconsistent with lane assignment patterns.

The Contractor shall coordinate all traffic control work on this project with adjoining contracts, including barricade placement necessary to provide a uniform traffic detour pattern. When directed by the Engineer, the Contractor shall remove all traffic control devices, which were furnished, installed, or maintained by him/her under this contract. All traffic control devices shall remain in place until specific authorization for relocation or removal is received from the Engineer

Temporary lighting as shown on the plans shall be in place and operational before the existing permanent lighting is taken out of service so that lighting is provided on all I-74 roadways and ramps throughout the duration of this contract.

Existing temporary lighting and/or permanent lighting along the I-74 mainline and ramps that are under traffic shall remain operational until the proposed permanent lighting is operational. Proposed permanent lighting along a roadway shall be operational when any lanes of the proposed roadway are opened to traffic.

The Contractor will notify the Engineer in writing at least ten calendar days prior to any activities that will disrupt normal traffic flow. This will include road closures, lane closures, short-term I-74 closures and lane shifts.

The contractor will notify the Engineer in writing ten calendar days prior to activities that reduce any vertical and horizontal clearances. The Contractor shall maintain the following minimum clearances:

I-74 Bridge Over Main Street = 4.343 m  
I-74 Bridge over Camp Street = 4.826 m  
I-74 Bridge over Washington Street = 5.994 m

Traffic Control Surveillance shall be in accordance with the special provision entitled Traffic Control Surveillance (Special).

On I-74 and ramps, where edge of pavement drop offs are in excess of 75 mm (3"), the Contractor will be required to keep the adjacent lane or shoulder closed at their expense or install temporary concrete barrier along the drop off. When a segment of I-74 is closed to traffic, contractor trucks and other vehicles shall not enter and exit from lanes open to mainline I-74 traffic when access is available from the adjacent interchanges.

When access to an area is not available except from the mainline I-74 traffic, contractor trucks and other vehicles will be permitted to enter and/or leave the I-74 mainline traffic at locations permitted by the Engineer provided such locations do not pose a safety hazard or disruption to mainline I-74 traffic.



All vehicles, materials and equipment parked or stored during non-working hours within 5.5 m (18 ft) from a I-74 or ramp pavement that is open to traffic shall be protected by guardrail or temporary concrete barrier or other man-made barriers. No vehicles, materials or equipment shall be parked or stored within 1.2 m (4 ft) of the backside of guardrail.

A flagger will be required at locations where trucks and other vehicles are entering and/or leaving the I-74 mainline or ramp traffic. A pair of 1.2 m (48 in.) signs shall be located 450 m (1500 ft) in advance stating "TRUCKS ENTERING (LEAVING) ON RIGHT (LEFT)." In addition, if two or more I-74 lanes are open to traffic, a pair of 1.2 m (48 in.) signs shall be located 300 m (1000 ft) in advance stating "MERGE RIGHT (LEFT)" signs. All required warning signs and flaggers shall be at the Contractor's expense.

At road closure locations where Type III barricades are installed in a manner that will not allow Contractor access to the project without relocation of one or more of the barricades, the arrangement of the barricades at the beginning of each work day may be relocated, when approved by the Engineer, in the manner shown on Highway Standard 702001 for Road Closed to Through Traffic. "Road Closed" signs (R11-2), supplemented by "Except Authorized Vehicles" signs (R3-I101), shall be mounted on both the near-right and far-left barricade(s). At the end of each workday the barricades shall be returned to their in-line positions. This work will be considered included in the contract, and no extra compensation will be allowed.

If the Contractor elects to gap the permanent and/or temporary guardrail or concrete barrier at locations not shown on the plans, any additional guardrail, concrete barrier, sand module impact attenuator(s) or other approved end treatment(s) shall be at the Contractor's expense. The Engineer shall approve the location of gaps in guardrail or concrete barrier not shown on the plans prior to implementation.

Temporary concrete barrier shall be in place prior to beginning the removal of existing bridge piers, abutments, or removing guardrail attached to same. Temporary concrete barrier shall be in place to separate opposing I-74 mainline traffic at locations prior to permitting opposing traffic on the roadway.

A portable changeable message sign will be required for westbound direction of travel on I-74. The sign(s) shall be placed and operating in advance of the project limit one week prior to the start of construction. As work ensues, the sign(s) shall be relocated and operating in advance of the first operation requiring a lane closure, detours or as directed herein, and/or as directed by the Engineer. The construction traffic control devices shall be installed in locations where they do not block or impede other traffic control devices, or sidewalks.

The number of open traffic lanes shown on the plans for each stage of construction shall be maintained at all times.

When a segment of I-74 is closed to traffic, contractor trucks and other vehicles shall not be permitted to enter and exit from lanes open to mainline I-74 traffic when access is available from the adjacent interchange(s).

The Contractor shall install construction traffic control devices in locations where they do not block or impede other traffic control devices, or sidewalks. Changeable message signs shall be placed to notify affected motorists seven calendar days in advance of closures and detours required for construction.

**Business and Private Access:** The Contractor shall maintain access to all approaches, driveways, roadways and frontage roads along North Main Street, Camp Street, Washington Street and Taylor Street at all times unless otherwise noted in the Maintenance of Traffic plans or otherwise directed by the Engineer. It may be possible to close some entrances for construction during off-peak or non-business hours. Prior to any entrance closure, the Contractor shall secure the property owners or tenants approval in writing and provide a copy to the Engineer. Temporary construction access shall not exceed 10 consecutive calendar days unless approved in writing by the property owners or tenants and the Engineer.

**SHALE AND COAL MATERIAL**

Effective: July 9, 2004

Shale and/or coal material encountered during earth excavation or pile drilling shall be treated as unsuitable materials. This material shall not be used for embankment and shall be removed off of the right of way. No additional compensation will be allowed.

**FILL EXISTING STORM SEWERS**

Effective: February 2, 2004

Revised: January 5, 2005

Description. This work shall consist of filling existing storm sewers with Controlled Low Strength Material.

When CLSM is used or specified, this work shall be completed in accordance with the following:

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

Item	Article/Section
(a) Portland Cement, Type 1.....	1001
(b) Water .....	1002
(c) Fine Aggregate–FA 1 or 2 Sand (Note 1) .....	1003.01(a), 1003.01(c), 1003.04(b)
(d) Fly Ash .....	1010.02, 1010.03
(e) Admixtures (Note 2) .....	1021.01

Note 1: Blending fine aggregate materials will not be permitted.

Note 2: The air-entraining admixture may be in powder form. Prior to approval, a CLSM air-entraining admixture shall be evaluated in a field or laboratory experimental pour. The Engineer will verify the experiment. The department will maintain an Approved Air-Entraining Admixtures for CLSM list.

Equipment. Equipment shall be according to the following Articles of Section 1100 – Equipment:

Item	Article/Section
(a) Concrete Mixers .....	1103.01
(b) Batching and Weighing Equipment .....	1103.02, 1103.03
(c) Mobile Portland Cement Concrete Plants .....	1103.04
(d) Water Supply Equipment.....	1103.11

Proportioning. When CLSM is used for filling, the mix shall be District 4 Mix A or B and yield approximately one cubic meter (cubic yard).

	District 4 Mix A	District 4 Mix B
Portland Cement	56 kg (94 lb)	15 kg (25 lb)
Fly Ash – Class C or F	-	74 kg (125 lb)
Fine Aggregate – Saturated Surface Dry	1602 kg (2700 lb)	1483 kg (2500 lb)
Water	143 (29 gal)	143 (29 gal)
Air Content	15-25%	15-25%
Darafill or equivalent	1 pouch	1 pouch

Mix Design. A contractor may submit their own mix design and may propose alternate fine aggregate materials, fine aggregate gradations or material proportions.

The mix design shall meet the following criteria.

**Mix Design Criteria**

Flow  $\geq$  178 mm (7 in.)

Air Content 0 – 25%

Dynamic Cone Penetrometer (DCP) at 3 days  $\leq$  39 mm/blow (1.5 in./blow)

Compressive Strength at 28 and 180 days  $\geq$  207 KPa (30 psi) to  $<$  1034 KPa (150 psi)

The mix design shall include the following information:

- (1) Source of materials.
- (2) Gradation of fine aggregate.
- (3) Absolute volumes, specific gravities, unit weights, and any other values used in the mix design process.
- (4) Type and proposed dosage of admixtures.
- (5) Target flow and air content.
- (6) Test data indicating compressive strength at 28 and 180 days.

If the Contractor submits a mix design, which has not been previously verified by the Department, a trial batch shall be required. The trial batch shall be scheduled a minimum of 30 calendar days prior to anticipated use, and shall be performed in the presence of the Engineer. A minimum of 0.75 cu m (1 cu yd) trial batch shall be produced and placed off site. The trial batch shall be produced with the equipment and methods intended for construction. The trial batch will be evaluated for temperature, flow, air content, DCP and 28-day compressive strength by the Engineer.

Verification of the mix design will include the trial batch test results, field observations (i.e. flowability and solid suspension), and other criteria as determined by the Engineer. The Contractor will be notified in writing of verification. Verification of a mix design by the Engineer shall in no manner be construed as acceptance of any CLSM produced.

Test Methods. Sampling the freshly mixed flowable fill shall be performed according to Illinois Modified AASHTO T 141, except the elapsed time for obtaining the composite sample shall not exceed two minutes. The flow test shall start within five minutes of obtaining the composite

sample. The molding of strength test specimens shall start within ten minutes of obtaining the composite sample.

The temperature test shall be according to Illinois Modified ASTM C 1064.

The flow test shall consist of filling a 76 mm (3 in.) inside diameter by 152 mm (6 in.) long plastic cylinder. The maximum variation from the normal inside diameter and length shall be 3 mm (1/8 in.). The plastic cylinder shall be smooth, rigid and open at both ends. The test method shall consist of placing the cylinder on a flat, level, firm surface which is free of vibration or other disturbances. The cylinder shall be firmly held in place and filled in one lift. The top of the cylinder shall be struck off to form a level surface while holding the cylinder in place. The cylinder shall be pulled straight up, and the approximate diameter of the mixture's spread shall be measured.

The air content test shall be according to Illinois Modified AASHTO T 121 or Illinois Modified AASHTO T 152, except the bowl shall be filled in one lift without vibration, rodding or tapping.

The DCP test shall be according to the Department's test method. The compressive strength test shall be according to Illinois Modified AASHTO T 22, except neoprene caps shall be used for compressive testing. Strength is defined as the average of two or more cylinder breaks. The 152 mm x 305 mm (6 in. x 12 in.) cylinders shall be made according to Illinois Modified AASHTO T 23, except the cylinders shall be filled in one lift without vibration, rodding or tapping. When bleed water appears at the top of the mold after a few minutes, the mold shall be refilled. The curing method shall be modified by not removing the covered specimen from the mold until the time of testing. The cylinders shall be stored in a shaded area with a controlled temperature of 16 °C to 27 °C (60 °F to 80 °F).

Mixing and Mix Adjustments. The mix shall be produced according to Section 1020 of the Standard Specifications. Sufficient mixing capacity shall be provided to permit the placement without interruption. The mixer drum shall be emptied prior to initial batch to ensure that no additional cement fines are incorporated into the mix.

The Engineer reserves the right to adjust the proportion of materials in the field for flowability, to maintain solid suspension of the mix, and other criteria. No additional compensation will be paid to the Contractor for a mix adjustment.

## CONSTRUCTION REQUIREMENTS

**Placement.** The mix shall not be placed on frozen ground, in standing water, or during wet weather conditions. Mixing and placing shall begin only if the air temperature is 2 °C (35 °F) minimum and rising. At time of placement, the material temperature shall be 5 °C (40 °F) minimum. Mixing and placing shall stop when the air temperature is 5 °C (40 °F) and falling.

The mix shall be placed directly from the chute into the space to be filled. Other placement methods may be approved by the Engineer if the mix design is appropriate.

When backfilling against structures, the mix shall be placed in layers to prevent damage by lateral pressures. Side slopes shall be stepped or serrated to prevent wedging action of the backfill against the structure. Each layer shall be allowed to harden prior to placing the next layer.

The mix shall not be exposed to freezing temperatures or wet weather conditions during the first 24 hours after placement.

Applied Load. The mix may be subjected to loading upon approval by the Engineer, or when a penetration of 39 mm/blow or less has been obtained with the DCP test.

The storm sewers to be filled are scheduled on the plans.

The storm sewers shall be plugged on ends with a plug material meeting the approval of the Engineer. The plug shall be adequate to withstand the hydrostatic load created during the filling operation. If the plug fails during the filling operation, the Contractor shall be responsible for the cost of repairing the plug and filling the remainder of the storm sewer.

Method of Measurement. Controlled Low Strength Material will be measured for payment in cubic meters of material placed.

Basis of Payment. This work, including the cost of plugging the ends, will be paid for at the contract price per cubic meters for FILL EXISTING STORM SEWERS.

#### **END SECTION TO BE REMOVED**

Effective: November 3, 2003

Description. This work shall consist of removing and disposing of existing end sections of the types, sizes and locations as specified in the plans and in accordance with Section 501 of the Standard Specifications. The End Sections shall be disposed in a manner approved by the Engineer and in accordance with Article 202.03. The removal shall be performed so the existing pipe culvert or pipe drain to remain in place is not damaged. Any damage to the existing culvert or pipe drain shall be repaired or replaced by the Contractor without additional compensation.

Method of Measurement. End Section To Be Removed will be measured for payment in units of each.

Basis of Payment. Removal of the end section(s) will be paid for at the contract unit price per each for END SECTION TO BE REMOVED of the type(s), size(s) and location(s) designated on the plans.

#### **CONCRETE HEADWALL FOR PIPE UNDERDRAIN REMOVAL**

Effective: November 24, 2003

Description. This work shall consist of removing the existing concrete headwalls and rodent screens for pipe under drains at the location shown in the plans and in accordance with the applicable portions of section 501 of the Standard Specifications. The headwalls and screens shall be disposed of in accordance with Article 202.03 of the Standard Specifications.

Basis of Payment. This work shall be paid for at the contract unit price each for CONCRETE HEADWALL FOR PIPE UNDERDRAIN REMOVAL, which price shall include all labor, equipment and material to complete the work and no additional compensation will be allowed.

### **TEMPORARY EROSION CONTROL SEEDING**

Effective: January 5, 2005

Description. This work shall consist of furnishing all labor, equipment and material for the construction of temporary erosion control seeding, in accordance with Section 280 of the Standard Specifications except as stated herein.

Method of Measurement. This work shall be measured in kilograms.

Basis of Payment. This work shall be paid for at the contract unit price per kilogram, which shall include all labor, equipment and material to complete the work and no additional compensation will be allowed.

### **SUB-BASE GRANULAR MATERIAL (SPECIAL)**

Effective: February 2, 2004

Description. This work shall consist of placing sub-base granular material (special) at locations shown on the plans (under partial and full depth median pavement, adjacent combination concrete curb and gutter, type B-15.30, combination concrete curb and gutter, type B-15.60, and portland cement concrete sidewalk) or as directed by the Engineer. This work shall be performed in accordance with Section 311 of the Standard Specifications except as noted herein and as specified in the plans.

Materials. All materials shall meet the applicable requirements of Article(s) 311.02 (materials) and 311.05(c) (sub-base granular material, type B.)

Method of Measurement. Sub-base granular material (special) will be measured for payment in cubic meters. Measurements shall be done in accordance with Article 311.08 (method of measurement.)

Basis of Payment. This work will be paid for at the contract unit price per cubic meter for SUB-BASE GRANULAR MATERIAL (SPECIAL), which price shall include all labor, equipment, materials and all work necessary to complete this work. Excavation and preparation of earth base will not be paid for separately but shall be considered as included in the contract unit price for sub-base granular material (special).

### **TOPSOIL EXCAVATION AND PLACEMENT (SPECIAL)**

Effective: December 13, 2004

Description. This work shall consist of excavating and placing topsoil at locations shown on the plans or as directed Engineer. This work shall be performed in accordance with Section 311 of the Standard Specifications except as noted herein and as specified in the plans.

Materials. All materials shall meet the applicable requirements of Article(s) 311.02.

Method of Measurement. Topsoil Excavation and Placement (Special) will not be measured for payment and shall be included as incidental in the contract unit price for Combination Concrete Curb and Gutter, Type B-15.60.

Basis of Payment. This work will not be paid for at a unit price but shall be incidental to the contract unit price for Combination Concrete Curb and Gutter, Type B-15.60, which price shall include all labor, equipment, materials and all work necessary to complete this work.

### **AGGREGATE SPECIAL**

Effective: February 17, 2004

Description. This work shall consist of furnishing and placing crushed limestone, at locations shown in the plans, meeting the requirements for CA-6 or CA-10 in accordance with Section 1004 of the Standard Specifications.

Before placing the Aggregate Special, the weeds and grass on the area to be covered shall be cut or removed. The aggregate shall be deposited in its final position and compacted to the satisfaction of the Engineer. If the moisture content of the aggregate is not such as to permit satisfactory compaction during the rolling operations, water shall be added in such quantity that satisfactory compaction can be obtained.

Method of Measurement. Aggregate Special will be measured per metric ton. The aggregate shall be constructed to the thickness shown on the plans. Thickness determinations will be made at such points as the Engineer may select. When the constructed thickness is less than 90 percent of the specified thickness shown on the plans, aggregate shall be added to obtain the required specified thickness.

Equipment. Equipment shall meet the requirements of Article 1101.01 (d) Tamping Roller.

Basis of Payment. This work will be paid for at the contract unit price per metric ton for AGGREGATE SPECIAL which price shall include all excavation, removing material from the site, at thicknesses and locations as shown in the plans.

Water required to be added for compaction on the grade will not be measured for payment but shall be considered as included in the cost of the item of work being constructed.

Geotextile Filter Fabric meeting the requirements of Article 1080.03 shall not be paid for separately but shall be included in the contract unit price for Aggregate Special.

### **PORTLAND CEMENT CONCRETE BASE COURSE 250 MM AND PORTLAND CEMENT CONCRETE BASE COURSE WIDENING 250 MM**

Effective: December 17, 2004

Description: This work shall consist of furnishing all labor, equipment and materials for the added thickness and tie bars necessary to tie existing pavement to proposed base course as detailed on the plans.

Method of Measurement: The added base course thickness and tie bars will not be measured separately for payment.

Basis of Payment: This work will be incidental to the contract unit price per square meter for PORTLAND CEMENT CONCRETE BASE COURSE 250 MM and PORTLAND CEMENT CONCRETE BASE COURSE WIDENING 250 MM which price shall include all labor, equipment and other material to complete the work.

### **PAVED DITCH REMOVAL, SPECIAL**

Effective: January 27, 2004

Description. This work shall consist of the removal and satisfactory disposal of all paved ditch at the locations called out in the plans in accordance with the applicable portions of Section 440 of the Standard Specifications.

Paved ditch removal, special shall include the complete removal of all anchor walls and cut-off walls that are contained within the limits of the designated removal. Any excavation made by the Contractor for the removal shall be replaced. The excavated space shall be filled with material satisfactory to the Engineer and placed according to Section 205 by and at the expense of the Contractor.

Method of Measurement. Paved Ditch Removal, Special will be measured per square meter. The measurement shall be along the surface of the paved ditch.

Basis of Payment. This work will be paid for at the contract unit price per square meter for PAVED DITCH REMOVAL, SPECIAL which price shall include all excavation, removing material from the site, as shown in the plans. No compensation will be allowed for toe or anchor walls.

### **BITUMINOUS MEDIAN SURFACE REMOVAL**

Effective: February 2, 2004

Description. This work shall consist of the removal of existing bituminous median surface material (+/- 50 – 100 mm thickness) at the locations shown on the plans (Washington Street) or as directed by the Engineer. This work shall be done in accordance with Section 440 of the Standard Specifications.

Method of Measurement. Bituminous median surface removal will be measured for payment in square meters. Measurement shall be within the limits of the back of the existing concrete curb and gutter.

Basis of Payment. This work will be paid for at the contract unit price per square meter for BITUMINOUS MEDIAN SURFACE REMOVAL, which price shall include all work and materials necessary to remove existing bituminous median surfaces.



### **CONCRETE BARRIER REMOVAL**

Effective: November 24, 2003

Description. This work shall consist of removal of the existing concrete barrier at the locations shown in the plans in accordance with the applicable portions of Section 440 of the Standard Specifications.

Method of Measurement. Concrete Barrier Removal shall be measured for payment in meters of removed barrier.

Basis of Payment. This work shall be paid for at the contract unit price per meter for CONCRETE BARRIER REMOVAL which price shall include all labor, equipment and material to complete the work and no additional compensation will be allowed.

### **PORTLAND CEMENT CONCRETE SHOULDER REMOVAL**

Effective: February 17, 2004

Description. This work shall consist of the partial depth removal and disposal of a portion of an existing Portland Cement Concrete Shoulder in accordance with Section 440 of the Standard Specifications. The location of this work is on the median shoulder of I-74 westbound between Station 154+780 and 154+952. The depth of removal is 10 mm to 95 mm. Maximum removal required under proposed median shoulder is 38 mm (by omitting the bituminous binder course over the PCC shoulder).

General. The Contractor shall form a perpendicular straight joint machine sawing to a depth of 38 mm at the ends and all edges of portions to be removed to prevent surface spalling when the concrete is broken out. Any damage done to the existing pavement or appurtenance to remain in place shall be repaired or removed and replaced by the Contractor at his/her own expense, as directed by the Engineer.

It shall be the responsibility of the Contractor to determine the thickness of the existing pavement structure, including overlays, and other appurtenances to be removed, and the extent to which they are reinforced. No additional compensation will be allowed because of variations from the assumed thickness(s) or from the thickness(s) shown on the plans, or for variations in the amount of reinforcement.

Any excavation made by the Contractor for the removal shall be replaced. The excavated space shall be filled with material satisfactory to the Engineer and placed according to Section 205 by and at the expense of the Contractor.

Equipment. The equipment used for partial depth removal shall be a self-propelled mobile unit capable of removing the concrete to the depth specified by a cold milling process utilizing tungsten carbide cutting tools. The equipment shall be capable of accurately controlling the elevation and cross slope of the removal, and shall have an effective means of removing the material and of preventing dust from escaping into the air.

Disposal of Material. Materials resulting from the partial depth removal of existing pavement and appurtenances as herein specified shall be disposed of as specified in Article 202.03.

Method of Measurement. Portland Cement Concrete Shoulder Removal will be measured for payment per square meter.

Basis of Payment. This work will be paid for at the contract unit price per square meter for PORTLAND CEMENT CONCRETE SHOULDER REMOVAL, which price shall include all work and materials necessary for the partial depth removal of existing Portland Cement Concrete Shoulder surfaces. The 38 mm deep saw cut is included in the unit price for PORTLAND CEMENT CONCRETE SHOULDER REMOVAL and shall not be paid for separately.

### **CLASS B PATCHES (SPECIAL)**

Effective: December 13, 2004

This work shall include all labor, equipment, and materials required to remove and replace the existing PCC expansion joints at locations shown in the plans per the applicable portions of Section 442 of the Standard Specifications and the detail shown in the plans.

This work will be measured and paid for at the contract unit price per square meter (square yard) for CLASS B PATCHES (SPECIAL).

The 75 mm expansion joint will be measured and paid for at the contract unit price per meter (foot) for EXPANSION JOINT 75 MM.

### **REMOVAL OF EXISTING STRUCTURES**

Effective: March 4, 2004

Description. This work shall consist of the removal and satisfactory disposal of the following three existing structures. This work shall be completed in accordance with applicable Articles of Section 501 of the Standard Specifications for Road and Bridge Construction.

General. All existing aluminum railing on the bridges shall remain the property of the IDOT. The Contractor shall deliver all aluminum railing and mounting bases free of charge to the IDOT Operations yard in East Peoria on Camp Street. Please contact Dan Edwards for arrangements at (309) 699-3822. Any aluminum railing and bases that are damaged by the Contractor shall be replaced in-kind by the Contractor. Existing steel rails will become the property of the Contractor.

Construction Requirements. Existing Structure No. 1 is the existing structure that carries I-74 over the TP&W Railroad. Structure No. 1 shall be removed as shown in the plans. The entire crashwall and footing of both existing piers shall be removed in their entirety. The piling for the existing pier footings shall be cut off a minimum six inches below the proposed bottom elevation of the new pier crashwalls.

Existing Structure No. 2 is the existing structure that carries I-74 over Main Street. Structure No. 2 shall be removed as shown in the plans.

Existing Structure No. 3 is the existing structure that carries I-74 over Washington Avenue. Structure No. 3 shall be removed as shown in the plans.

This work will be paid for at the contract unit price each for REMOVAL OF EXISTING STRUCTURES, which price shall include all labor, materials and equipment necessary for the satisfactory removal and disposal of the structures described herein. Excavation, backfilling and compaction required in the performance of the work will not be measured and paid for separately but shall be included in the unit price bid for the REMOVAL OF EXISTING STRUCTURE.

### **REMOVAL OF THE EXISTING BEARINGS**

Effective: December 20, 2004

Description. This work shall consist of removal of the existing steel bearings at Pier 4. It shall also include the disposal of the steel bearings in accordance with the applicable requirements of Section 501 of the Standard Specifications.

Construction Requirements. Jacking and shoring of the existing girders at Pier 4 is included in pay item Jacking and Shoring. The existing steel framing shall be protected from any damage during the removal of the existing bearings at Pier 4. Any damage caused to the existing steel framing system by the Contractor during removal of the existing bearings shall be repaired to the satisfaction of the Engineer at no additional cost. The removal of the existing bearings shall not interfere with the operation of the adjacent railroad

Method of Measurement. Removal of the Existing Bearings will be measured for payment for each existing bearing removed.

Basis of Payment. This work will be paid for at the contract unit price each for Removal of Existing Bearing.

### **REMOVAL OF THE EXISTING CONCRETE DECK**

Effective: December 20, 2004

Description. This work shall consist of removal of the existing westbound bridge concrete deck as shown on the plans including existing bituminous overlay, railings and light poles in accordance with the applicable requirements of Section 501.03. It shall also include the disposal of the removed items in accordance with the applicable requirements of Section 501 of the Standard Specifications.

Construction Requirements. The Contractor must take utmost care not to damage the existing steel framing, bearings and the substructure units those are to be reincorporated into the new structure. Any damage caused to the existing steel framing, bearings and the substructure units by the Contractor during removal of the existing concrete deck shall be repaired to the satisfaction of the Engineer at no additional cost. All loose rust, loose mill scale and all other loose potentially detrimental foreign material shall be removed from the surfaces of the portions of flanges of beams or girders in contact with concrete. This removal shall be accomplished with

appropriate power tools. Cost shall be included in this pay item. The removal of the existing concrete deck shall not interfere with the operation of the adjacent railroad. The Contractor shall exercise care so as not to notch or gouge the top flanges with jackhammers or other tools.

Basis of Payment. This work will be paid for at the contract lump sum price for Removal of Existing Concrete Deck.

### **PIPE CULVERT REMOVAL**

Effective: November 3, 2003

Description. This work shall consist of removing existing pipe culverts at the locations and sizes called out in the plans in accordance with the applicable portions of Section 501 of the Standard Specifications unless modified herein.

Any excavation necessary to perform the removal of existing pipe culvert shall be considered included in Pipe Culvert Removal and will not be measured for payment. In the event portions of a pipe culvert are to be abandoned in place, the abandoned pipe is to be plugged in accordance with Article 550.05. In the event the Engineer determines portions of a pipe culvert, not specified in the plans, are to be abandoned in place, this work shall be performed according to the Abandon Existing Culvert Special Provision provided elsewhere in the contract.

Method of Measurement: Pipe Culvert Removal will be measured in place in meters of existing culvert to be removed. The measurement shall be along the flowline of the culvert.

Basis of Payment. Removal of existing pipe culverts will be paid for at the contract unit price per meter for PIPE CULVERT REMOVAL. Removal of headwalls or aprons attached to the culvert will not be paid for separately, but shall be considered as included in the contract unit price bid for PIPE CULVERT REMOVAL.

### **CONCRETE HEADWALL REMOVAL**

Effective: November 3, 2003

Description. This work shall consist of removing and disposing of existing concrete headwalls in accordance with Section 501 of the Standard Specifications. The headwall shall be disposed in a manner approved by the Engineer and in accordance with Article 202.03. The removal shall be performed so the existing pipe culvert and headwall to remain in place is not damaged. Any damage to the existing culvert or headwall shall be repaired or replaced by the Contractor without additional compensation.

Method of Measurement. Concrete Headwall Removal will be measured for payment in units of each.

Basis of Payment. Removal of the concrete headwalls will be paid for at the contract unit price per each for CONCRETE HEADWALL REMOVAL at the location(s) designated on the plans. No additional compensation will be allowed due to the various sizes of pipes and headwall.

## **STRUCTURAL STEEL REMOVAL**

Effective: December 20, 2004

Description. This work shall consist of the removal of existing diaphragms at the locations shown on the plans. The removed steel shall become the property of the Contractor for disposal off the site as specified in Article 202.03 of the Standard Specifications. The Contractor shall perform this work in such a manner as to not damage structural steel that is to remain. This work shall include removal of existing rivets.

Construction Requirements. Burning of the existing rivets will only be permitted when it is performed adjacent to the surface of the steel member that is to be removed. Burning of the rivets will not be allowed adjacent to members to remain in place. When burning of rivets is not allowed the head of the rivets shall be sheared off and the shank driven or drilled out. Extreme care shall be taken while removing the rivets so as not to damage the existing structural steel that is to remain. All damage to the existing members that are to remain shall be repaired or the member replaced to the satisfaction of the Engineer. Repair or replacement of damaged members shall be at the Contractor's expense and at no additional cost to the State.

Method of Measurement. Structural Steel Removal will be measured for payment in kilograms of structural steel removed.

Basis of Payment. This work will be paid for at the contract unit price per kilogram for STRUCTURAL STEEL REMOVAL.

The cost of furnishing and erecting the new diaphragms will not be paid for as part of this work but will be included in the pay item FURNISHING AND ERECTING STRUCTURAL STEEL.

The cost of removal and replacement an the existing gusset plate and cover plates at locations shown in the Plans will not be paid for as part of this work but will be included in the pay item STRUCTURAL STEEL REPAIR.

## **JACK AND REMOVE EXISTING BEARINGS**

Effective: December 20, 2004

Description. This work shall consist of jacking and cribbing the ends of the applicable spans of the structure to facilitate removal and replacement of the expansion bearings. This work shall include the removal of the bearings. It shall also include the disposal of the expansion bearings in accordance with the applicable requirements of Section 501 of the Standard Specifications.

Construction Requirements. All jacking and cribbing supports shall be designed and constructed to provide the necessary longitudinal, lateral, and vertical rigidity and strength to support the loads that will be imposed upon them. The Contractor shall provide jacks, shims, temporary blocking and other such equipment required to maintain the raised position at all times. Jacking from the end diaphragms or end cross-frames will not be permitted without prior written approval of the Engineer. If approved, any necessary supplement reinforcing of the end diaphragms or end cross-frames shall be provided by the Contractor at no additional cost.

Jacking operations and bearing replacement shall be performed after the existing deck is removed and before the new one is placed. The jacks shall have adequate capacity to support loads a minimum of 1.5 times the dead load reaction of the girder or beam.

During jacking and cribbing operations, the jacks shall be controlled to assure all beams or girders are lifted at the same time. The elevations of jacked beams and girders with respect to one another shall not vary by more than 6 mm from their original relative elevations. Jacks shall be centered under the jacking members. If the jacking system requires that the lifting loads or cribbing loads be transferred to a concrete slopewall, an adequate distribution of the loads shall be accomplished using timber mats. A maximum allowable pressure of 95 MPa shall be used to determine the required area of timber mats supported by the concrete slopewall.

Suitable gauges for the measurement of superstructure movement shall be installed by the Contractor.

Any slopewall used to support such timber mats and having voided areas beneath it shall be replaced prior to jacking.

The Contractor shall be responsible for restoring to their original condition prior to jacking, the drainage ditches, pavement or slope wall disturbed by the cribbing footings.

The Contractor shall submit for approval by the Engineer, a detailed procedure for Jacking and Cribbing, prior to beginning the work. This procedure shall be prepared under the direction of an Illinois Licensed Structural Engineer and shall be sealed by him/her. The cost of furnishing such procedure shall be considered included in the unit price of this work. All jacking and cribbing operations shall be performed under the observation of the Engineer. The Engineer's presence and/or approval shall not relieve the Contractor of responsibility for the safety of the operation or for preventing damage to the structure.

Bearing removal shall consist of removing the entire bearing assemblies, including the bottom masonry plates and protruding portions of anchor bolts for the expansion bearings. Cut-off anchor bolts shall be ground flush with the top of concrete.

Basis of Payment. This work shall be paid for at the contract unit price Each for JACK AND REMOVE EXISTING BEARINGS and will be considered payment in full for furnishing all required equipment, materials and labor.

## **JACKING AND SHORING EXISTING GIRDERS**

Effective: December 20, 2004

Description. This work shall consist of jacking and shoring the existing girders for spans 4 and 5 at Pier 4 during reconstructing the stem of Pier 4. Included is the disconnecting of the bearings from the existing girders

Construction Requirements. All jacking and cribbing supports shall be designed and constructed so as to provide the longitudinal, lateral, and vertical rigidity and strength necessary to support the loads that will be imposed upon them. The Contractor shall provide jacks, shims, temporary blocking and other such equipment required at all times to maintain the raised position.

Jacking operations shall be completed with the existing deck removed and before new deck placement or reinstallation. Jacks shall have adequate capacity to support loads a minimum of 1.5 times the dead load reaction of the girder or beam.

Prior to jacking, the existing bearings shall be disconnected from the girders. During jacking and cribbing operations, the jacks shall be controlled to assure all beams or girders are lifted at the same time. The elevations of jacked beams and girders with respect to one another shall not vary by more than 6 mm from their original relative elevations.

The Contractor shall submit for approval by the Engineer, a detailed procedure for Jacking and Shoring, prior to beginning the work. This procedure shall be prepared under the direction of an Illinois Licensed Structural Engineer and shall be sealed by him/her. The cost of furnishing such procedure shall be considered included in the lump sum price for the item Jacking and Shoring Existing Girders. All jacking operations shall be performed under the observation of the Engineer. The Engineer's presence or approval shall not relieve the Contractor of responsibility for the safety of the operation or for damage to the structure.

The existing steel framing shall be protected from any damage during the period of reconstruction of Pier 4. Any damage caused to the existing steel framing system by the Contractor during this period shall be repaired to the satisfaction of the Engineer at no additional cost. The shoring towers shall not interfere with the operation of the adjacent railroad.

The Contractor at his option may elect to temporarily remove the steel framing from the nearest girder splices instead of shoring them. The Contractor shall submit a procedure for the temporary removal and adequate storage of the steel framing to the Engineer for review and approval. The existing girder splices are located approximately at 25.298 meters north and 15.507 meters south from centerline of bearing respectively. There are approximately 168 22-millimeter diameter rivets per splice. The Contractor shall remove the existing rivets and replace them with M22 high strength bolts. The faying surfaces shall be cleaned of all paint, rust and foreign material with hand tool prior to installing bolts and primed with inorganic zinc rich primer in accordance with Section 506 of the Standard Specifications. The existing rivet holes shall be reamed to 24 millimeter for installation of bolts.

Basis of Payment. This work will be paid for at the contract lump sum price for JACKING AND SHORING EXISTING GIRDERS which price shall be payment in full for all equipment, materials, and labor required to perform the work as shown on the plans and specified herein.

### **CONCRETE COLLAR, CULVERT NO. 1**

Effective: February 17, 2004

Description. This work shall be performed in accordance with Sections 503 and 542 of the Standard Specifications and the details shown in the plans. This item is to be used when transitioning from the existing 1650 mm storm sewer to the proposed storm sewer at Sta. 154+093.089 as shown in the plans and shall be constructed entirely out of class SI concrete. Reinforcement bars shall be in accordance with Section 508 of the Standard Specifications.

Method of Measurement. Concrete Collar, Culvert No. 1 shall be measured for payment in units of each.

Basis of Payment. This work shall be paid for at the contract unit price each for CONCRETE COLLAR, CULVERT NO. 1, which price shall include furnishing all labor, equipment and material for the construction of Concrete Collar, Culvert No. 1 as detailed in the plans with the exception of reinforcement bars which shall be paid for separately at the contract unit price for REINFORCEMENT BARS, EPOXY COATED.

### **SLOPEWALL 150**

Effective: December 20, 2004

Description. This work shall consist of furnishing and installing 150 millimeter thick slopewall to replace portions of the Farm Creek Drainage channel concrete lining that require removal to facilitate pier extension work.

Construction Requirements. The work shall be performed in accordance with the requirements of Section 511 of the Standard Specifications. The thickness of the slopewall shall be 150 millimeters or that of which the existing concrete lining is constructed, whichever is greater.

Method of Measurement Slopewall 150 millimeter thick will be measured for payment in square meters of new slope wall provided.

The removal of the existing concrete lining will not be measured separately for payment but will be considered as included in the price of this work.

Basis of Payment. This work will be paid for at the contract unit price per square meter for SLOPEWALL 150 which price shall be payment in full for all equipment, materials, and labor required to perform the work as shown on the plans and specified herein.

### **METAL END SECTIONS**

Effective: November 3, 2003

Description. This work and removal shall consist of furnishing all labor, equipment and material for the installation of the metal end sections, of the size specified in the plans in accordance with Article 542.07 (c) of the Standard Specifications except as stated herein. The material type for the end section shall be compatible with that of the adjoining corrugated metal pipe.

Basis of Payment. This work shall be paid for at the contract unit price each for METAL END SECTIONS, of the diameter specified, which price shall include all labor, equipment, and material to complete the work and no additional compensation will be allowed.

### **PIPE ELBOWS**

Effective: January 5, 2005

Description. This work shall consist of furnishing all labor, equipment and material for the construction of the pipe elbows, in accordance with Section 542.08 of the Standard Specifications except as stated herein. The material type for the elbow shall be compatible with that of the adjoining pipe.



Method of Measurement. This work shall be measured as each

Basis of Payment. This work shall be paid for at the contract unit price per each for PIPE ELBOW, of the diameter specified, which shall include all labor, equipment, and material to complete the work and no additional compensation will be allowed.

**MANHOLES, TYPE A, 1.2M DIAMETER, FLAT SLAB TOP**

Effective: August 2, 2004

This work shall consist of furnishing all labor, equipment, grate and materials for the construction of Manhole, Special 1.2 m diameter in accordance with Section 602 of the Standard Specifications and the details in the plans.

Add "MANHOLES, TYPE A, 1.2M DIAMETER, FLAT SLAB TOP " to Article 602.15 of the Standard Specifications.

This work will be paid for at the contract unit price each for MANHOLES, TYPE A, 1.2M DIAMETER, FLAT SLAB TOP.

**MANHOLES, SPECIAL, 1.2 M DIAMETER**

Effective: October 29, 2002

Revised: January 5, 2005

Description. This work shall consist of furnishing all labor, equipment and materials for the construction of Manholes, Special, 1.2 m Diameter in accordance with the applicable portions of Section 602 of the Standard Specifications and the details shown in the plans. This work includes excavating around the existing manhole for access, cleaning all existing surfaces the will come in contact with the proposed slab and the placement of the new precast manhole sections on top of an existing concrete box. Work shall also include the cast-in-place reinforced concrete slab, step and the manhole cast iron frame and closed lid. The Contractor may salvage the frame and lid for re-use.

The capacity of the top slab of the existing manhole can safely support the new concrete slab and one 1220 mm precast manhole section. The first precast manhole section shall be blocked up 200 mm above the top slab of the existing manhole. The proposed cast-in-place cover slab Additional manhole sections can be installed only after the cast-in-place cover slab has reached full strength.

Method of Measurement. Manholes, Special, 1.2 m Diameter shall be measured for payment in units of each.

Basis of Payment. This work shall be paid for at the contract unit price per each for MANHOLES, SPECIAL, 1.2 m DIAMETER, which price shall include all labor, equipment, and material to complete the work and no additional compensation will be allowed.

### **INLETS, SPECIAL**

Effective: November 3, 2003

Description. This work shall consist of furnishing all labor, equipment and materials for the construction of Inlets, Special or Inlets, Special (Modified), in accordance with the applicable portions of Section 602 of the Standard Specifications and the details shown in the plans.

There are two separate details in the plans that are labeled "Inlets, Special" and "Inlets, Special (Modified)". These titles are used throughout the plans in order to assist in implementing the correct detail at the desired location. Quantities for "Inlets, Special (Modified)" is combined with "Inlet, Special" for purposes of payment.

Basis of Payment. This work shall be paid for at the contract unit price per each for INLETS, SPECIAL, which price shall include all labor, equipment, grates and material to complete the work and no additional compensation will be allowed.

### **DRAINAGE STRUCTURES, TYPE 1A WITH ONE TYPE 20 FRAME AND GRATE**

Effective: November 24, 2003

Description. This work shall consist of furnishing all labor, equipment and material for the construction of Drainage Structures, Type 1A With One Type 20 Frame and Grate in accordance with Section 602 of the Standard Specifications and the details in the plans.

Add "Drainage Structures, Type 1A With One Type 20 Frame and Grate" to Article 602.15 of the Standard Specifications.

Basis of Payment. This work shall be paid for at the contract unit price per each for DRAINAGE STRUCTURES, TYPE 1A WITH ONE TYPE 20 FRAME AND GRATE, which price shall include all labor, equipment, and material to complete the work and no additional compensation will be allowed.

### **FRAMES AND GRATES, TYPE 20, INSTALL ONLY**

Effective: February 9, 2005

Description. The Type 20 Frame and Grate shall be obtained from storage at a location to be furnished by the Engineer. This work shall consist of picking up, delivering the frame and grate to work site, placing and installing the frame and grate on an existing inlet to the required grade. This work shall include the removal of the temporary existing plate and replacement with the new frame and grate.

The frame and grate shall be installed in accordance with Article 604.04 of the Standard Specifications.

Disposal of existing steel plate shall be in accordance with Article 202.03 of the Standards and Specifications for Road and Bridge Construction.

Basis of Payment: This work will be paid for at the contract unit price each for PLACING AND INSTALLING TYPE 20 FRAME AND GATE, which price shall include all labor, equipment, transportation and material to complete the work and no additional compensation will be allowed.

### **PRECAST DRAINAGE STRUCTURES**

Effective: June 11, 2005

Drainage structures shown in the plans to be precast, including but not limited to Manholes, Type A, 2.1m and 2.4m Diameter and Precast Drainage Structures, that are not covered by the Highway Standards or plan details shall be designed by the Contractor. Shop drawings detailing reinforcement shall be signed and sealed by a Structural Engineer and submitted to the Resident Engineer for the Departments records. The cost of this work will not be paid for separately, but shall be included in the cost of the drainage item.

### **CONCRETE HEADWALL**

Effective: March 15, 2004

Description. This work shall consist of furnishing all labor, equipment and materials for the construction of Concrete Headwalls in accordance with the applicable portions of Section 606 of the Standard Specifications and Standard 542101 for 600 MM headwalls at the locations shown on the plans.

Method of Measurement. Concrete Headwalls will be measured as each for each headwall completed.

Basis of Payment. This work shall be paid for at the contract unit price per each for CONCRETE HEADWALL, which price shall include all labor, equipment, reinforcement and other material to complete the work.

### **CLASS SI CONCRETE (OUTLET)**

Effective: November 3, 2003

Description. This work shall consist of furnishing all labor, equipment and materials for the construction of Gutter Outlets in accordance with the applicable portions of Section 606 of the Standard Specifications and the details shown in the plans.

Method of Measurement. Type A Gutter (Modified) Outlet and Outlet Type 1 (Modified) for Type A Gutter (Modified) areas designated as "M1" may be cast integral with the outlet and are included in the volume measurement for Class SI Concrete (Outlet) and will be measured for payment in cubic meters and paid for at the contract unit price per cubic meters for Class SI Concrete (Outlet).

Basis of Payment. This work shall be paid for at the contract unit price per cubic meter for CLASS SI CONCRETE (OUTLET), which price shall include all labor, equipment and material to complete the work.

**CLASS SI CONCRETE, SPECIAL**

Effective December 20, 2004

Description: This work shall consist of furnishing all labor, equipment and materials for the construction of a concrete cap on shale exposed after the final subgrade elevation has been attained. The shale (unsuitable material) shall be over excavated a minimum of 75 mm and replaced with a minimum of 75 mm cap of Class SI Concrete. The 75 mm concrete cap shall extend along the shale area within the full width of pavement, including shoulder and curb & gutter. The concrete shall be formed and consolidated as approved by the Engineer. No reinforcement is required. Only a screed finish is required. Only a minimum amount of construction joints will be allowed.

Method of Measurement: Class SI Concrete Special will be measured in cubic meters.

Basis of Payment: This work will be paid for at the contract unit price per cubic meter FOR CLASS SI CONCRETE, SPECIAL, which price shall include all labor, equipment and other material to complete the work.

**CONCRETE GUTTER, TYPE A (MODIFIED)**

Effective: November 3, 2003

Description. This work shall consist of furnishing all labor, equipment and materials for the construction of Concrete Gutter, Type A (Modified) in accordance with the applicable portions of Section 606 of the Standard Specifications as shown in the plans.

Method of Measurement. Concrete Gutter, Type A (Modified) shall be measured for payment in meters in the flow line of the gutter, but will exclude all entrances, inlets and outlets. Areas designated as "M" may be cast integral with the gutter but shall not be paid for separately.

Basis of Payment. This work shall be paid for at the contract unit price per meter for CONCRETE GUTTER, TYPE A (MODIFIED), which price shall include all labor, equipment and material to complete the work.

**CONCRETE MEDIAN TYPE SM**

Effective: March 4, 2004

Description. This work shall consist of furnishing all labor, equipment and materials for the construction of Concrete Median Type SM in accordance with the applicable portions of Section 606 of the Standard Specifications and as located and detailed on the plans. The work shall be coordinated with the pier construction. The new curb and gutter shall match the lines and elevations of existing to remain to the satisfaction of the Engineer.

Method of Measurement. Concrete Median Type SM shall be measured for payment in square meters in accordance with Section 606.13 of the Standard Specifications.

Basis of Payment. This work shall be paid for at the contract unit price per square meter for CONCRETE MEDIAN TYPE SM which price shall include all labor, equipment and material to complete the work.

## **CONCRETE THRUST BLOCKS**

Effective: December 1, 2004

Description. This work shall consist of furnishing all labor, equipment and materials for the construction of Concrete Thrust Blocks as shown in the Concrete Thrust Blocks Detail as shown in the plans. Thrust blocks shall be cast-in-place with Class SI Concrete and anchor bolts (where applicable) in accordance with article 609.06 of the Standard Specifications and the plans.

Method of Measurement. Concrete Thrust Blocks shall be measured per each.

Basis of Payment. This work shall be paid for at the contract unit price per each for CONCRETE THRUST BLOCKS which price shall include all excavation, forming, anchor bolts Class SI Concrete and compacted backfill to complete the work.

## **LIGHTWEIGHT CELLULAR CONCRETE FILL**

Effective: Nov 11, 2001

This work consists of providing lightweight cellular concrete fill at the required location(s) in accordance with the details, dimensions shown in the plans and as directed by the Engineer.

The specialized batching, mixing and placing equipment shall be automated. The batch plant scales shall be inspected and calibrated by a reputable scale servicing company. Bulk cement shall be weighted on a scale which shall operate within a tolerance of 1-1/2 percent of the weight of the cement per batch.

Within 15 calendar days after execution of the contract the Contractor shall submit the following:

Manufacturer's specifications, catalog cuts, and other engineering data needed to demonstrate compliance with specified requirements. These shall include test reports by test laboratories.

Written approval of the subcontractor and equipment by the manufacturer of the engineered fill.

Materials: The materials shall meet the following requirements:

Cement. The Portland cement shall comply with Article 1001.01 - 1001.06 of the Standard Specifications. Pozzolans and other cementitious materials may only be used when specifically approved by the Engineer.

Water. Water shall be potable and shall meet the requirements of Section 1002 of the Standard Specifications.

Concrete Admixtures. Concrete admixtures may be used only when approved by the Engineer. The concrete admixtures shall meet the requirements of Article 1021.01 - 1021.04 of the Standard Specifications.

Engineered Fill. The engineered fill shall have the following properties:

	<u>Class II</u>	<u>Class IV</u>
Cast Density ASTM C138	384-480 kg/m <sup>3</sup> (24-30 pcf)	577-673 kg/m <sup>3</sup> (36-42 pcf)
Minimum Compressive Strength @28 days ASTM C495-Modified	276 KPa (40 psi)	827 KPa (120 psi)
	<u>Class II</u>	<u>Class IV</u>
Freeze-thaw Resistance (min. cycles @ relative E=70%)per ASTM C666 - Modified	n/a	300 cycles
Coefficient of Permeability (cm/sec) per ASTM D2434 @ 17 KPa (2.5 psi)	1.3 x10 <sup>-3</sup>	4.4x10 <sup>-6</sup>
@124 KPa (18 psi)	1.2x10 <sup>-4</sup>	3.1x10 <sup>-7</sup>
Water Absorption Long term immersion As % of cast density (120) days per ASTM C796-Modified	20% max.	14% max.

Prior to installation of the engineered fill, the ground surface shall be cleared of debris, sharp objects and trees. Tree stumps shall be either removed or cut to the level of the ground surface. All wheel tracks or ruts in excess of 76 mm (3 in.) in depth shall be graded smooth or otherwise filled with soil to provide a reasonable smooth surface.

If required in the plans, a geotechnical fabric for ground stabilization shall be placed in accordance with Section 210 of the Standard Specifications.

If a geomembrance liner is required in the plans this work shall be done in accordance with the special provisions for "Geomembrane Impermeable Liner."

Installation. The engineered fill shall be placed in accordance with the installation procedures provided by the manufacturer of the engineered fill. Each lift of the Type II engineered fill shall be placed to a maximum depth of 1.2 m (4 ft) and Type IV engineered fill shall be placed to a maximum depth of 0.6 m ( 2 ft).

There shall be no standing water in the area to be filled. If necessary, dewatering shall be continuous during the time the engineered fill is constructed.

Engineered Fill shall not be placed during periods of precipitation unless placed in an enclosed, covered area.

If any items are to be enclosed in the fill, the items shall be set to the final location both horizontally and vertically prior to installation of the engineered fill.

Mixing of the engineered fill and placing shall be done as follows:

Only automated proportioning mixing and placing equipment approved by the manufacturer of the engineered fill shall be used. After mixing, the materials shall be promptly placed in the final location.

The plant shall be equipped with an automatic batch counter and automatic timer to account for the foam in the mixer.

The engineered fill shall be placed in lifts as recommended by the manufacturer. The material shall be placed to prevent segregation. Intermediate lifts may be placed horizontal. Only the top lift shall be sloped to grade.

The final surface elevation of the engineered fill shall be within  $30\pm$  mm ( $0.1\pm$  ft) of the plan elevation.

Temperature Requirements. The air temperature shall not be less than  $1.7^{\circ}\text{C}$  ( $35^{\circ}\text{F}$ ) at the time of placement. The temperature of the engineered fill mixture at the point of discharge shall not be below  $7.2^{\circ}\text{C}$  ( $45^{\circ}\text{F}$ ) nor greater than  $35^{\circ}\text{C}$  ( $95^{\circ}\text{F}$ ).

Testing. During placement of the initial batches, the density shall be checked and adjustments made to obtain the specified cast density at the point of placement. Density of the mix shall only be adjusted by increasing or decreasing the foam.

Four strength test specimens shall be obtained for each 230 cu m (300 c yd) of engineered fill placed or for each four hours of placing.

The specimens shall be tested in accordance with ASTM C495 except:

The test specimens shall be 152 mm x 305 mm (6 in. x 12 in.) cylinders. The specimens shall be covered immediately to prevent damage and loss of moisture.

The specimens shall be moist cured for 7 days prior to a 28-day compressive strength test. Do not oven dry test specimens.

Specimens may be tested at any age to monitor the compressive strength. Last 2 specimens from each series should be tested at 28 days. The manufacturer may require special handling and testing techniques of the engineered fill.

Method of Measurement.

Contract Quantities. When the project is constructed essentially to the lines, grades or dimensions shown on the plans and the Contractor and the Engineer have agreed in writing the plan quantities are accurate, no further measurement will be required. Payment will be made for the quantities shown in the contract for the various items involved except that if errors are discovered after work has been started, appropriate adjustments will be made.

When the plans have been altered or when disagreement exists between the Contractor and the Engineer as to the accuracy of the plan quantities, either party shall, before any work is started which would affect the measurement, have the right to request in writing and thereby cause the quantities involved to be measured as hereinafter specified.

**Measured Quantities.** Engineered fill will be measured in its final position and the volume in cubic meters computed by method of average end areas. The dimensions used in calculating the average end areas shall not exceed the neat lines shown in the plans unless ordered in the writing by the Engineer.

**Basis of Payment.** This work will be paid for at the contract unit price per cubic meter for LIGHTWEIGHT CELLULAR CONCRETE FILL of the class specified.

**REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINAL, TYPE I SPECIAL**

Effective: December 15, 2004

This work shall include all labor, equipment, and materials required to remove and re-erect the existing Traffic Barrier Terminals, Type I Special at locations noted in the plans per the applicable portions of Section 633 of the Standard Specifications and the details shown in the plans.

This work will be measured and paid for at the contract unit price per each for REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINAL, TYPE I SPECIAL.

**CONCRETE BARRIER TRANSITION (MODIFIED)**

Effective: December 20, 2004

Description. This work shall be performed in accordance with Section 637 of the Standard Specifications and the detail sheet titled "Concrete Barrier, Double Face (Modified) & Concrete Barrier Transition (Modified) for Sign Structure, High Mast Light Tower and Pier Foundations." Concrete Barrier Transition (Modified) is to be used when transitioning from the proposed median Westbound Concrete Barrier, Double Face (Modified) on each side of the Concrete Foundations for the Overhead Sign Structure located at approximately Sta. 153+409.992 as shown in the plans.

Method of Measurement. Concrete Barrier Transition (Modified) shall be measured for payment in meters in place.

Basis of Payment. This work will be paid for at the contract unit price per meter for CONCRETE BARRIER TRANSITION (MODIFIED) which price shall include furnishing all labor, equipment and material for the construction of Concrete Barrier Transition (Modified) as detailed in the plans.



### **CHAIN LINK FENCE REMOVAL**

Effective: November 24, 2003

Description. This work shall consist of all labor, equipment and material for the complete removal and proper disposal of existing chain link fences at the locations shown in the plans. The Contractor shall completely remove the fencing, including posts, and dispose of the material in accordance with Article 202.03 of the Standard Specifications. A terminal post shall be set in accordance with Section 664 of the Standard Specifications, and Highway Standard 664001, at the locations where the removal begins or ends, and there is existing fence to remain. The existing fence to remain shall be connected to the terminal post with a stretcher bar and bands as detailed in Highway Standard 664001. All postholes shall be backfilled and compacted to the satisfaction of the Engineer.

Method of Measurement. Chain link fence to be removed shall be measured in place in meters for payment prior to removal. The line posts and terminal posts shall not be measured for payment separately.

Basis of Payment. This work shall be paid for at the contract unit price per meter for CHAIN LINK FENCE REMOVAL, which price shall include all labor, equipment and material to complete the work and no additional compensation will be allowed.

### **CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED**

Effective: November 3, 2003      Revised: December 1, 2004

Description. This work shall consist of the removal of an existing chain link fence to provide access for ditch grading and the removal of debris immediately adjacent to the fence location. At the completion of the grading work, the chain link fence fabric shall be salvaged with new fence posts and re-erected at its previous location. The debris in the fabric and on the ground adjacent to the fence shall be removed in accordance with Article 202.03 of the Standard Specifications.

Method of Measurement. Chain Link Fence to Be Removed and Re-Erected will be measured for payment in meters from center to center of the first posts that remain either side of the removal limits.

Basis of Payment. This work will be paid for at the contract unit price per meter for CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED, which price shall include all fence removal, new posts, disposal of debris, associated earthwork and re-installation of the chain link fabric.

If portions of the existing fabric are not salvageable, new materials shall be furnished and installed in accordance with Section 664 of the Standard Specifications. Any damage caused by the Contractor will be replaced at no cost to the State, as directed by the Engineer.

## **HIGHWAY-RAIL INFORMATION SIGN**

Effective December 20, 2004

### Description

This work shall consist of installing a state-furnished complete and fully operational Highway-Rail Information (HRI) Sign. The sign consists of a pole mounted static advanced warning sign, sign post, flashing beacon and one-half of a communications link that connects the sign to the East Peoria Public Safety Building located at 201 W. Washington Street.

The HRI sign will inform approaching motorists of potential delays due to a blocked at-grade railroad crossing either at the Washington Street and Camp Street (IL Route 8), Main Street and Camp Street, or the Washington Street (adjacent to the East Peoria Public Safety Building) railroad crossings. This advisory warning will be communicated to approaching motorists using a flashing beacon that is placed above a static advanced warning sign as shown on the Plans.

### Materials

Materials to be installed shall be furnished by the State and shall be in accordance to and meet or exceed the requirements of the following:

### General

The Contractor shall furnish all required hardware, tools, equipment, cables, mounting apparatus, materials, and consumable supplies, required to install and configure the components of the HRI sign.

All furnished equipment and component parts shall be new, be of the latest design and manufacture. They shall comply with these specifications at the time of installation. All parts shall be of high quality workmanship, and no part or attachment shall be substituted or applied contrary to the manufacturer's recommendation and standard practices.

The design shall prevent reversed assembly or improper installation of connectors, fasteners, etc. The equipment shall be designed to protect personnel from exposure to high voltage and be UL listed.

### Environmental Requirements

The equipment installed shall meet all its specified requirements during and after being subjected to any combinations of the following:

Ambient temperature: -35 to +70 °C  
Relative humidity: 5 to 95 percent, non-condensing  
Sustained wind speed: < 90 MPH, with 30% gust factor  
Power surges: ± 1 kV surge supplied in differential mode to all lines, power and output, as defined by IEC 1000-4-5 and EN 61000-4-5 standards.

### Components (furnished by the State)

The Contractor shall obtain the following materials from the State at a location as identified by the Engineer:

- HRI Sign Panels (both W10 and supplemental street sign)
- Sign Post
- Flashing Beacon
- Contact Mapping Radio Frequency (RF) Receiver
- Power Supply
- Relay Coils and Relay Contacts (optional)

The Contractor shall install these items as shown in the Plans.

#### HRI Sign

The Contractor shall install one (1) light-emitting diodes (LED) flashing beacon above the static advanced warning sign as shown on the Plans.

The HRI sign and flashing beacon shall be mounted on a permanent wood sign support in accordance with Section 730 and 1093 of the Standards Specifications and as shown on the Plans. The flashing beacon shall be mounted in accordance with Standard Specification 880001, "Span Wire Mounted Signals and Flashing Beacon Installation." The RF directional antenna, equipment cabinet, and any peripheral equipment shall be mounted on the wood sign support as shown on the Plans and as approved by the Engineer.

The purchase and installation of the equipment cabinet will be included in a separate pay item entitled Pole Mounted Equipment Cabinet, Type C. The flashing beacon, RF directional antenna and power supply will be connected to the equipment cabinet via conduit in accordance with Section 811 of the Standards Specifications and as shown on the Plans.

#### Contact Mapping Radio Frequency (RF) Receiver

The HRI advanced warning sign shall connect to the East Peoria Public Safety Building by a RF communications link. The RF communications link to the East Peoria Public Safety Building shall consist of the components and peripheral equipment or associated cabling that are necessary as required to provide an operational communications link.

The contact mapping RF receiver shall not interfere with any previously installed equipment. The contact mapping RF receiver shall not require any hardware or software modifications.

A directional antenna, along with the required cabling, connectors and over-voltage protection shall also be installed as shown on the Plans.

#### Power Supply

The communications and any peripheral equipment shall operate from 120 VAC  $\pm$  10%.

The power supply shall protect the communications and peripheral equipment against damage from power line transients and surges.

## Relay Coils and Relay Contacts (Optional)

The relay shall control the flashing beacon as shown on the Plans.

## **Construction Requirements**

### General

The Contractor shall install the HRI sign, contact mapping RF receiver and peripheral equipment, directional antenna, equipment cabinet, and associated items as shown on the Plans. The Contractor shall setup and configure all the system elements for the HRI sign as shown in the Plans.

All equipment shall be grounded in accordance with Section 807 of the Standard Specifications.

The static advanced warning sign shall be installed in accordance with Section 720 and 730 of the Standards Specifications and as shown on the Plans. The Contractor shall provide power via electrical cable in conduit between the power service location and the static advanced warning sign on the wood sign support as shown on the Plans. The Contractor shall install the power and communications cable according to the manufacturer's instructions and as shown on the Plans. Inside the pole mounted equipment cabinet, all connections and cabling shall be installed as indicated on the Plans.

The Contractor shall coordinate the installation, connection and test activities of the HRI system and associated communications infrastructure with the Engineer and Equipment Integrator under Contract #68226. The Contractor shall test and verify the performance of the RF communications link and the operation of the HRI signs by simulating various states of the railroad crossings and observing the signs. During this testing period, the Contractor shall blank or cover the static signs to avoid misleading motorists.

The Contractor shall also test all signs and equipment using a 30-day period of full operations to demonstrate the required functionality and performance of the equipment and associated software. The Contractor shall provide a completed log, documenting any issues that developed during the test period. The Contractor shall deliver this test documentation to the Engineer for approval.

The Contractor shall install cable tags for all controller and internal wiring harnesses, jumper cables, etc. Include the cable function, origin, destination, equipment location and other information to facilitate testing, operation, and maintenance as required and approved by the Engineer.

### Warranty

The Contractor shall warranty all materials and workmanship including labor for a period of two years after the completion and acceptance of the installation, unless other warranty requirements prevail. The warranty period shall begin when the Contractor completes all construction obligations related to this item and when the components for this item have been accepted, which shall be documented as the final completion date in the construction status

report. This warranty shall include repair and/or replacement of all failed components via a factory authorized depot repair service. All items sent to the depot for repair shall be returned within two weeks of the date of receipt at the facility. The depot location shall be in the United States. Repairs shall not require more than two weeks from date of receipt and the provider of the warranty shall be responsible for all return shipping costs. The depot maintainer designated for each component shall be authorized by the original manufacturer to supply this service.

A warranty certificate shall be supplied for each component from the designated depot repair site indicating the start and end dates of the warranty. The certificate shall be supplied at the conclusion of the system acceptance test and shall be for a minimum of two years after that point. The certificate shall name the Department as the recipient of the service. The Department shall have the right to transfer this service to other private parties who may be contracted to perform overall maintenance of the facility.

Method of Measurement. This item shall be measured for payment by each Highway-Rail Information Sign in-place and operational.

Basis of Payment. This work shall be paid for at the contract unit price each for HIGHWAY-RAIL INFORMATION SIGN, which price shall be payment in full for all equipment, material, testing, documentation and labor detailed in the contract documents.

## **OVERHEAD SIGN STRUCTURES - SPECIAL**

Effective: July 21, 2004

Description. This item shall apply to Overhead Sign Structure-Span, Cantilever and Bridge Mounted (Special) and shall conform to the requirements of Section 733, "Overhead Sign Structures" of the IDOT Standard Specifications for Road and Bridge Construction, as modified herein, and as shown on the plans.

OVERHEAD SIGN STRUCTURE-SPAN, TYPE I-S (1.22M x 1.37M)

OVERHEAD SIGN STRUCTURE-CANTILEVER, TYPE II-C-S (0.90M x 1.68M)

The Overhead Sign Structure-Span, Type I-S is located at W.B. F.A.I. Route 74, Station 153+410. The Overhead Sign Structure-Cantilever, Type II-C-S is located at W.B. F.A.I. Route 74, Station 153+772. The sign structures consist of a steel truss and steel post support(s). The structural steel shall be according to the materials specification shown on the plans and applicable portions of Section 1094 of the Standard Specifications.

Painting. Paint shall be applied to the Overhead Sign Structure-Span and Overhead Sign Structure-Cantilever steel members according to the special provision "Surface Preparation and Painting of Galvanized Steel Traffic Structures."

Method of Measurement. The Method of Measurement shall be according to Article 733.10 of the Standard Specifications.

Basis of Payment. This work shall be paid for at the contract unit price per meter for OVERHEAD SIGN STRUCTURE-SPAN or OVERHEAD SIGN STRUCTURE-CANTILEVER, of

the type, width and depth specified. The price shall include furnishing, fabricating, painting and erecting the Overhead Sign Structures as specified in this special provision.

**RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL**

Effective: May 2, 2002

Revised: July 21, 2004

Description. Work to be performed under this pay item shall consist of removing the existing reflector from raised pavement markers, and shall be performed in accordance with Section 781 of the Standard Specifications.

Upon removal of the existing reflector, all remaining portions of the existing reflector, and all traces of adhesive, rust, dirt, etc. shall be removed from the marker reflector area by sandblasting or other methods as approved by the Engineer.

Method of Measurement. Raised Reflector Pavement Marker, Reflector Removal shall be measured per each reflector removed.

Basis of Payment. This work shall be paid for at the contract unit price per each for RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL. This price shall include all preparation, labor, equipment, tools, material, disposal, cleanup, and all other necessary work specified and included completing the item.

**EXISTING INTERCONNECT, BLACKJACK**

Effective: December 20, 2004

There is an existing aerial Fiber Optic Cable interconnect from Highview to Blackjack that is connected to the existing controller at Blackjack via the conduit from the service pole.

This Fiber Optic Cable shall be disconnected and carefully pulled back to the service pole and stored in such a manner to prevent damage to the cable. After the new controller is installed, the Fiber Optic Cable shall be connected to the proper equipment in the new controller.

Prior to disconnecting the existing Fiber Optic Cable, the cable shall be tested as per Article 802.08(b). Also, after the Fiber Optic Cable is reconnected in the new controller, it shall again be tested as per Article 802.08(b) and the results compared. The results of both tests shall be submitted to the Engineer. If the results indicate damage, the Fiber Optic Cable may need further testing and/or replacement.

Basis of Payment:

This work shall be included in the pay item for REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT and no additional compensation will be allowed.

## **PROCEDURE FOR SUBMITTAL AND RESPONSE TO PLAN QUESTIONS**

### **General**

Contractors are reminded to read the Working Restrictions and Incentive/Disincentive special provisions of each contract. These items vary between contracts even when combination bidding is possible.

### **Utilities**

Utility permits issued after the plans were sent to the Contractors will be available for review at the District 4 Headquarters in Peoria, Illinois. This information is intended to provide Contractors current data regarding the utility relocation progress that was not available at the time the plans were sent to Contractors.

### **Contractor questions**

Questions regarding clarification of the contract plans, special provisions, and contract documents will be answered by the Department to those contractors who supply an e-mail address. Contractors are requested to submit contract plan and special provision related questions to IDOT, District Four at the following e-mail address: **D4I-74Questions@dot.il.gov**.

Questions may also be mailed to the Illinois Department of Transportation, District Four at 401 Main St., Peoria, IL 61602-1111. Attn: Rich Dotson. Please include a telephone number, fax number, mailing address, and contact person with all questions. **Questions must be received on or before May 23, 2005.** Any questions received after May 23, 2005 will not be addressed due to time constraints. A response to submitted questions will be provided on June 3, 2005 by e-mail to all contractors who have provided an e-mail address. All contractors interested in bidding on either of the 2 I-74 contracts on the June 17, 2005 letting are requested to supply an e-mail address to be used as a contact to receive question responses. This e-mail address may be sent to: **D4I-74Questions@dot.il.gov**





**SERVICE INSTALLATION, TYPE B (MODIFIED)**

Effective: January 1, 2002

Revised: January 5, 2004

Description. This work shall be in accordance with Section 805 and 1086 of the Standard Specifications except as modified herein.

The service installation shall include furnishing and installing a wood service pole or post and associated appurtenances.

A 100 mm (4") x 150 mm (6") wood post will be furnished for the disconnect instead of the wood pole as shown of Standard 886001. All connections shall be via electrical cable in conduit.

Galvanized steel conduit shall be used for the service riser. The use of PVC conduit will not be allowed.

The service disconnect enclosure shall be a stainless steel, weatherproof NEMA 4X enclosure that meets the following specifications:

60-Ampere Fused Disconnect Switch: Unless indicated otherwise on the plan sheets, the fused disconnect switch shall be single-throw, three-wire (two poles, two fuses and solid neutral). The switch shall provide for locking the blades in either the "On" or "Off" position with one or two padlocks and for locking the cover in the closed position. The fuses shall be cartridge fuses rated at 60 amperes, 240 volts or at the voltage and amperage indicated on the plan sheets. All fuses shall be provided with the disconnect installation.

The Department will furnish all padlocks.

Basis of Payment. This work will be paid for at the contract unit price for SERVICE INSTALLATION, TYPE B (MODIFIED) which shall be payment in full for labor, equipment and materials required to provide the electrical service installation described above, complete.

**CONCRETE HANDHOLE**

Effective January 1, 2002

Revised June 6, 2002

This work shall consist of furnishing the materials and constructing a handhole in accordance with the applicable Articles of Section 814 and 1088 of the Standard Specifications with the following modifications:

The lift ring for the cover shall consist of a solid closed ring of stainless steel at least 10 mm (3/8 inch) in diameter. The lift ring shall be attached to the cover by a loop of stainless steel at least 10 mm (3/8 inch) in diameter. The lift ring and loop shall be recessed in the cover.

All handholes on the shoulders, shall have one (1) 50 mm (2") PVC Conduit stubbed out and capped on the north and south sides (the sides at right angles to the roadway). Each stub shall extend beyond the outside of the handhole by 0.61 m (2'). These stubs are in addition to the conduit installed as part of this contract.

The lid shall be marked with the legend "ELECTRIC."

Pre-cast handholes are not allowed.

All surplus materials shall be disposed of by the Contractor outside the job limits.

Basis of Payment: This work will be paid for at the contract unit price each for CONCRETE HANDHOLE, which price shall be payment in full for all labor, materials, and equipment required to provide the handhole described above as well as any necessary excavating, backfilling, disposal of unsuitable materials, and furnishing all materials within the limits of the handhole.

### **CONCRETE DOUBLE HANDHOLE**

Effective January 1, 2002      Revised June 6, 2002

This work shall consist of furnishing the materials and constructing a handhole in accordance with the applicable Articles of Section 814 and 1059 of the Standard Specifications with the following modifications:

The lift ring for the cover shall consist of a solid closed ring of stainless steel at least 10 mm (3/8 inch) in diameter. The lift ring shall be attached to the cover by a loop of stainless steel at least 10 mm (3/8 inch) in diameter. The lift ring and loop shall be recessed in the cover.

All handholes on the shoulders, shall have one (1) 50 mm (2") PVC Conduit stubbed out and capped on the north and south sides (the sides at right angles to the roadway). Each stub shall extend beyond the outside of the handhole by 0.61 m (2'). These stubs are in addition to the conduit installed as part of this contract.

The lid shall be marked with the legend "ELECTRIC."

Pre-cast handholes are not allowed.

All surplus materials shall be disposed of by the Contractor outside the job limits.

Basis of Payment: This work will be paid for at the contract unit price each for CONCRETE DOUBLE HANDHOLE, which price shall be payment in full for all labor, materials, and equipment required to provide the handhole described above as well as any necessary excavating, backfilling, disposal of unsuitable materials, and furnishing all materials within the limits of the handhole.

### **LIGHT POLE, GALVANIZED STEEL, 13.5 M M. H., 4.5 M DAVIT ARM**

Effective January 5, 2005

The Light Pole shall conform to Sec. 830.00 of the Standard Specifications for Road and Bridge Construction and shall be galvanized and of the length and with the davit arm as shown on the plans.

### Basis of Payment

Light Pole, Galvanized Steel, 13.5 M M. H., 4.5 M Davit Arm, shall be paid for at the contract unit price each for Light Pole, Galvanized Steel, 13.5 M M. H., 4.5 M Davit Arm which price shall include the davit arm, all material, and labor and of the length as shown on the plans.

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

Effective: January 1, 2002

Revised: January 5, 2004

Description. This work shall consist of furnishing a Steel Mast Arm Assembly and Pole of the arm length specified on the plans and installing it on a concrete foundation. This work shall be in accordance with the applicable Articles of Sections 877 and 1077 of the Standard Specifications with the following modification:

Mast Arms and Poles shall be capable of supporting the number of signal faces (with back plates where indicated), signs, and appurtenances as shown on the plans.

All combination poles shall be equipped with a 3.66m (12') truss style luminaire arm and shall have a 13.7M (45 ft.) luminaire mounting height unless specified otherwise on the plans.

All Steel Combination Mast Arm Assembly and Poles shall be provided with a Festoon Box approximately 0.61m (24") and 180 degrees above the Mast Arm connection. The Contractor shall provide a dbl. GFI receptacle and wet location receptacle cover. The receptacle shall be wired to the highway lights at the base of the pole with 2C #12 cable. A 20-amp fuse shall be wired in the receptacle circuit at the base of the pole.

All combination mast arms shall conform to the minimum loading requirements of Standard 877011-01 or the loading shown on the plan sheets - whichever is greater.

Basis of Payment. This work will be paid for at the contract unit price each for STEEL COMBINATION MAST ARM ASSEMBLY AND POLE of the signal arm length specified.

### **TEMPORARY TRAFFIC SIGNALS**

Effective December 20, 2004

Description. This work shall consist of furnishing, installing, maintaining and removing temporary traffic signal installation according to Standard 880001 (modified), as shown on the plans, and Section 890 and all other applicable sections of the Standard Specifications for Road and Bridge Construction Adopted January 1, 2002.

The existing Traffic Signals shall remain in operation during the construction of the Temporary Signals until it is time to switch the controller.

The Contractor shall furnish a FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, as indicated in the Temporary Traffic Signal Construction Notes on the plans, shall be furnished and used for the Temporary Traffic Signals.

Two signs, LEFT ON GREEN ARROW ONLY (R10-5-2430) signs as shown on the Temporary Traffic Signal Plan for Blackjack. When the Temporary Traffic Signals are no longer needed, the two signs shall be relocated to the new mast arms as indicated on the plans. Furnishing and relocating the two signs shall be included in the unit price each for TEMPORARY TRAFFIC SIGNAL INSTALLATION.

Basis of Payment. This work will be paid for at the contract unit price per each for TEMPORARY TRAFFIC SIGNAL INSTALLATION, which price shall be payment in full for all materials, equipment and labor necessary to install the temporary traffic signals, and Video Cameras as described above. To maintain the same until the new signals are in operation, relocate as required by construction staging, and remove the temporary traffic signal installation.

### **TEMPORARY TRAFFIC SIGNAL INSTALLATION (WEST BOUND RAMPS)**

Effective: December 20, 2004

Description. This work shall consist of furnishing, installing, maintaining and removing temporary traffic signal installation according to Standard 840001 (modified), as shown on the plans, and Section 890 and all other applicable sections of the Standard Specifications for Road and Bridge Construction Adopted January 1, 2002.

A FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, as indicated in the Temporary Traffic Signal Construction Notes on the plans, shall be furnished and used for the Temporary Traffic Signals.

The Temporary Signal Heads shall be placed as indicated on the plans or as directed by the Engineer. The Contractor shall furnish enough cable slack to relocate the heads to any position on the span wire or at locations illustrated on the plans for construction staging. As construction progresses the Signal Heads shall be repositioned as directed by the Engineer to serve the traffic flow. The Temporary Traffic Signals shall remain in operation during all signal head relocations. Each Temporary Traffic Signal Head shall have its own cable from the controller cabinet. This work will not be paid for separately but shall be considered as part of the TEMPORARY TRAFFIC SIGNAL INSTALLATION and no additional compensation will be allowed.

Materials. Materials shall meet the requirements of Article 1076.03, 1076.04, Section 1078, and all other appropriate Sections of the Standard Specifications.

Maintenance Procedures. The maintenance procedures shall meet the requirements of Article 890.03.

Basis of Payment: This work will be paid for at the contract unit price per each for TEMPORARY TRAFFIC SIGNAL INSTALLATION, which price shall be payment in full for all materials, equipment and labor necessary to install the temporary traffic signals, maintain the same until the new signals are in operation, relocate as required by construction staging, and remove the temporary traffic signal installation.

**REMOVE EXISTING HANDHOLE**

Effective: February 2, 2004

Description. This work shall consist of the removal of the existing handhole at the location shown on the plans (Washington Street) or as directed by the Engineer. This work shall be done in accordance with Section 895 of the Standard Specifications. The handholes shall be disposed of in a manner approved by the Engineer and in accordance with Article 202.03.

Method of Measurement. Removal of existing handhole will be measured for payment by each.

Basis of Payment. This work will be paid for at the contract unit price per each for REMOVE EXISTING HANDHOLE, which price shall include all work and materials necessary to remove existing handhole, at locations designated on the plans.

**REMOVE EXISTING CONCRETE FOUNDATION**

Effective: February 2, 2004

Revised: January 5, 2005

Description. This work shall consist of the removal of existing concrete foundations at the locations shown on the plans or as directed by the Engineer. This work shall be done in accordance with Section 895 of the Standard Specifications. The foundations shall be disposed of in a manner approved by the Engineer and in accordance with Article 202.03.

Method of Measurement. Removal of existing concrete foundation will be measured for payment by each.

Basis of Payment. This work will be paid for at the contract unit price per each for REMOVE EXISTING CONCRETE FOUNDATION, which price shall include all work and materials necessary to remove existing concrete foundation, at locations designated on the plans.

**ABANDON EXISTING CULVERT**

Effective: November 3, 2003

Description. This work shall consist of abandoning existing pipe culvert(s) by plugging with Class SI Concrete or brick and mortar to the satisfaction of the Engineer in accordance with Section 605 of the Standard Specifications. The location, size and type of existing culverts to be abandoned is shown on the plans. The materials to be utilized in plugging the pipe culvert(s) shall conform to Section 1020 – Portland Cement Concrete and Section 1041 - Brick of the Standard Specifications. The purpose of abandoning a culvert is to divert water so it does not enter the pipe.

Basis of Payment. The work of abandoning existing pipe culverts will be paid for at the contract unit price each for ABANDON EXISTING CULVERT, which price shall include furnishing the labor, materials and equipment to properly abandon existing culverts. Removal of existing headwalls, manholes, inlets and pipes or sections of pipe designated to be removed shall be paid for separately.

## **PRESTAGE SITE CONSTRUCTION MEETINGS**

Effective June 1, 1992

This work shall consist of meetings with all concerned parties prior to each construction stage. The meetings shall be set up and conducted by the Contractor and shall include all Subcontractors connected with the particular stage. The Department's project staff and all concerned parties, as directed by the Engineer, shall be invited to attend.

The meetings are intended to help improve the coordination and quality of construction, personnel safety on the project site, and safety of the traveling public.

At each meeting, the Contractor shall indicate the current construction schedule for the particular stage, discuss maintenance of traffic, traffic control, project site personnel safety, compliance with the plans and specifications including quality construction, and all other pertinent subjects. Minutes of the meetings will be taken by the Resident Engineer and distributed to those persons in attendance.

The prestage site construction meetings will not be paid for separately but shall be included in the cost of the traffic control item(s) in the contract.

## **REMOVAL OF ABANDONED UNDERGROUND UTILITIES**

Effective January 15, 1996

Revised November 21, 1996

This work shall be completed in accordance with Article 105.07 of the Standard Specifications and the items outlined herein:

The cost of removal of abandoned or to be abandoned underground utilities shown on the plans are the responsibility of the owner. The Contractor shall make arrangements with the utility owner for removal and payment. The utility owner is listed in the plans under Status of Utilities.

Prior to removal of the abandoned facility, the owner shall be notified so that representatives can be present during the removal operation.

If an unknown abandoned utility is encountered, the Contractor will be paid for any removal required by the Engineer as extra work in accordance with Article 109.04 of the Standard Specifications.

## **NATIONWIDE 404 PERMIT REQUIREMENTS**

Effective January 22, 2001

Revised August 2, 2002

This bridge replacement or rehabilitation included with this project is authorized under a Nationwide Permit, provided all terms and conditions of the Nationwide Permit and any special conditions outlined in the Corps of Engineers' verification letter are met. A copy of the permit should be included within these special provisions. If they are not, a copy of these can be requested from the Department.

The Contractor will not be allowed to complete the structure replacement or rehabilitation using any in-stream access fill, cofferdams, or causeways unless shown on the plans or unless the proper permits are acquired by the Contractor for these activities. The existing permit may be amended to include these activities once the contractor determines the plan for completion of the work and it is submitted to the Department for submission to the Corps of Engineers'. The Department will not be held responsible for any delays incurred due to acquisition of additional permits or amending the existing permit. Determination of allowable methods for completion of this work under the current permit can be obtained from the Corps of Engineers.

**BORROW AND FURNISHED EXCAVATION**

Effective March 7, 2000

Revised October 15, 2001

Add the following to the requirements of Article 204:

“Soils which demonstrate the following properties shall be restricted to the interior of the embankment and shall be covered on both sides and top with a minimum of 900mm (3 feet) of non-restricted soil not considered detrimental in terms of erosion potential or excess volume change. A restricted soil is defined as having any one of the following properties:”

- A grain size distribution with less than 35% passing the number 75um (#200) sieve.
- A plasticity index of less than 12.
- A liquid limit in excess of 50.

“All restricted and non-restricted embankment materials shall have the following minimum strengths for the indicated moistures:”

<b>Immediate Bearing Value</b>	<b>Shear Strength At 95% Density *</b>	<b>Moisture</b>
3.0	50 Kpa (1000 PSF)	120%
4.0	62 Kpa (1300 PSF)	110%

\*Granular Soils  $\phi=35^\circ$

**EMBANKMENT**

Effective: July 1, 1990

Revised: January 22, 2002

Revise the third paragraph of Article 205.05 of the Standard Specifications to read:

All embankment shall be constructed with not more than 110% of optimum moisture content, determined according to AASHTO T 99 (Method C). The 110% of optimum moisture limit may be waived in free draining granular material when approved by the Engineer.

The Contractor may, at his option, add a drying agent to lower the moisture content as specified above. The drying agent must be approved by the Engineer prior to use. Extra compensation will not be allowed for the use of a drying agent but will be considered included in the cost of the various items of excavation.

#### **STONE DUMPED RIPRAP CLASS A4**

Effective April 15, 1991

Revised July 1, 1994

This work shall be performed in accordance with Section 281. The aggregate shall meet an RR CLASS A4 gradation and "B" Quality except that the sodium sulfate loss shall not exceed 35%. A bedding layer will not be required. A filter fabric meeting the requirements for an RR 4 material in accordance with Section 282 will be required.

This work will be paid for at the contract unit price per square meter for STONE DUMPED RIPRAP CLASS A4. The filter fabric will be measured and paid for separately.

#### **PROOF ROLLING**

Effective April 23, 2004

This work shall consist of proof rolling the embankment with a fully loaded tandem axle dump truck and driver at the direction of the Engineer. The truck shall travel the subgrade in all of the proposed lanes of traffic in the presence of the Engineer.

This work will not be paid for separately, but considered included in the various earthwork pay items.

#### **TEMPORARY PAVEMENT**

Effective October 1, 1995

Revised April 23, 2004

This item shall include all materials, labor and equipment necessary to construct temporary pavement in accordance with applicable sections of the Standard Specifications except as herein specified.

The Contractor shall have the option of constructing temporary pavement made of 325 bituminous base course or 250 PCC base course.

Bituminous base course shall be placed in accordance with applicable portions of Article 355 and the Bituminous Base Course/Widening special provisions herein. Material for bituminous base course shall be Superpave Binder Course in 19.0 in accordance with Article 406 and the special provision "Superpave Bituminous Concrete Mixtures". PCC base course shall be in accordance with Article 353.

This work will be paid for at the contract unit price per square meter (square yard) for TEMPORARY PAVEMENT which price shall be payment in full for all materials, labor and equipment including bituminous and aggregate prime coat necessary to perform the work as herein specified.



Removal of Temporary Pavement will be paid for separately in accordance with Article 440 of the Standard Specifications.

### **BITUMINOUS BASE COURSE 250 MM (10")**

Effective April 1, 1996

Revised April 23, 2004

The bituminous mixtures used in these items shall be in accordance with the mixture design requirements as set forth in the contract. The mixtures shall be proportioned and tested in accordance with the appropriate sections of the Recurring Special Provision, "Quality Control/Quality Assurance for Bituminous Concrete Mixtures" as determined by the Engineer.

### **BITUMINOUS BASE COURSE WIDENING**

Effective April 1, 1996

Revised April 23, 2004

The bituminous mixtures used in these items shall be in accordance with the mixture design requirements as set forth in the contract. The mixtures shall be proportioned and tested in accordance with the appropriate sections of the Recurring Special Provision, "Quality Control/Quality Assurance for Bituminous Concrete Mixtures" as determined by the Engineer.

### **PLACEMENT OF BITUMINOUS SURFACE COURSES**

Effective: March 22, 2001

Revised: April 29, 2005

Placement of bituminous concrete surface courses shall not be allowed after October 15<sup>th</sup> of any calendar year. The contractor is responsible for scheduling construction activities to complete placement of surface courses prior to October 15<sup>th</sup>. If surface courses are not in place by October 15<sup>th</sup>, the contractor is responsible for implementing any measures needed to make the roadway suitable for winter traffic and snow plowing activities. Any additional costs associated with this provision shall be considered included in the cost of the unit prices bid for bituminous surface course items.

### **BITUMINOUS SURFACE COURSE SURFACE TESTS**

Effective: November 1, 2003

The Contractor shall provide a person to operate the straight edge in accordance with Article 406.21 of the Standard Specifications and communicate with IDOT personnel to minimize the surface course bumps. If surface course bumps cannot be removed at this time, IDOT personnel will record the locations and provide deductions as stated in Article 406.21.

### **BITUMINOUS SURFACE REMOVAL, 25 MM (1") BITUMINOUS SURFACE REMOVAL, 40 MM (1½") BITUMINOUS SURFACE REMOVAL, 75 MM (3")**

Effective March 1, 1993

Revised January 3, 2000

Description: This work shall consist of removing a portion of the existing bituminous concrete

surface course in accordance with the applicable portions of Section 440 of the Standard Specifications, this special provision, details in the plans and as directed by the Engineer. The cold milled salvaged aggregate resulting from this operation shall become the property of the Contractor.

Equipment: The machine used for milling and planing shall be a self-propelled grinding machine having a minimum 3.6 m (12-foot) wide drum at least 710 mm (28 inches) in diameter. The grinding machine shall be capable of accurately and automatically establishing profile grades by referencing from either the existing pavement or from an independent grade control and shall have a positive means for controlling cross slope elevations. It shall also have an effective means for removing excess material from the surface and for preventing dust resulting from the operation from escaping into the air.

The cutting teeth used in the milling operation shall be the GTE AM722, or an approved equivalent. When the teeth become worn so that they do not produce a uniform surface texture, they shall all be changed at the same time (as a unit). Occasionally, individual teeth may be changed if they lock up or break, but this method shall not be used to avoid changing the set of teeth as a unit.

The moldboard is critical in obtaining the desired surface texture. It shall be straight, true, and free of excessive nicks or wear, and it shall be replaced as necessary to uniformly produce the required surface texture. Gouging of the pavement by more than 6 mm (1/4 inch) shall be sufficient cause to require replacement of all teeth.

Occasional gouges, due to deteriorated pavement condition, or separation of lifts will not be cause to replace all teeth. The Engineer will be the sole judge of the cause of the pavement gouging and the corrective work required. Corrective work due to negligence or poor workmanship shall be at the Contractor's expense.

#### Construction Requirements

General: The temperature at which the work is performed, the nature and condition of the equipment, and the manner of performing the work shall be such that the milled and planed surface is not torn, gouged, shoved, or otherwise injured by the grinding operation. Sufficient cutting passes shall be made so that all irregularities or high spots are eliminated.

Weather conditions, when milling work is performed, must be such that short term or temporary pavement markings can be placed the day the surface is milled in accordance with Section 703 "Work Zone Pavement Markings".

An automatic grade control device shall be used when milling mainline pavement and shall be capable of controlling the elevation of the drum relative to either a preset grade control stringline or a grade reference device traveling on the adjacent pavement surface. The automatic grade control device may be utilized only on one side of the machine with a automatic slope control device controlling the opposite side. The traveling grade reference device shall not be less than 9 m (30 feet) in length. When milling cross roads, turn lanes, intersections, crossovers, or other miscellaneous areas, the Engineer may permit the matching shoe. The Contractor, at his option, may also substitute an approved 1.8 m (6' wide) machine for areas other than mainline pavement.

1. For Bituminous Surface Removal, 25 mm (1"), the Contractor shall mill 25 mm (1 inch) at the centerline, except when the milling at the outer edge of the lane would exceed 25 mm (1 inches); then the Contractor shall reduce the cut at the centerline to provide the maximum cut of 25 mm (1 inches) at the edge of pavement. If deemed necessary, the Contractor may reduce the cross slope from normal 1.5% to 1%. A drawing labeled "Bituminous Surface Removal" is included in the plans
2. For Bituminous Surface Removal, 40 mm (1-1/2"), the Contractor shall mill 40 mm (1-1/2 inch) at the centerline, except when the milling at the outer edge of the lane would exceed 40 mm (1-1/2 inches); then the Contractor shall reduce the cut at the centerline to provide the maximum cut of 40 mm (1.5 inches) at the edge of pavement. If deemed necessary, the Contractor may reduce the cross slope from normal 1.5% to 1%. A drawing labeled "Bituminous Surface Removal" is included in the plans.
3. For Bituminous Surface Removal, 75 mm (3"), the Contractor shall mill 75 mm (3 inch) at the centerline, except when the milling at the outer edge of the lane would exceed 75 mm (3 inches); then the Contractor shall reduce the cut at the centerline to provide the maximum cut of 75 mm (3 inches) at the edge of pavement. If deemed necessary, the Contractor may reduce the cross slope from normal 1.5% to 1%. A drawing labeled "Bituminous Surface Removal" is included in the plans.

Surface tests will be performed in accordance with Article 407.09(a) of the Standard Specifications. The longitudinal profile will be taken 0.9 m (3 ft.) from and parallel to each edge of pavement and 0.9 m (3 ft.) from and parallel to the centerline on each side. If a shadow area is found at the 0.9 m (3 ft.) points the pavement smoothness tester will be moved sufficient distance either side to measure the Contractor's milling efforts. Any surface variations exceeding the tolerance of Table 1 of Article 407.09 shall be corrected by reprofiling at no additional expense to the Department. In addition, the Contractor shall be responsible for refilling with approved Class I Bituminous mixtures any area that lowered the pavement profile as a result of faulty milling operations if directed by the Engineer. The Contractor shall be responsible for providing the pavement smoothness tester described elsewhere to retest the pavement profile obtained.

If the milling depth is intended to expose the original concrete pavement, then additional hand or machine work may be necessary to remove any remaining veneer of bituminous pavement which may be left in place behind the milling machine. Such work will be at the direction of the Engineer and at no extra cost to the Department.

The Contractor shall provide a 3 m (10 foot) straightedge equipped with a carpenter's level or a 2.1 m (7 foot) electronic straightedge to check the cross slope of the roadway at regular intervals as directed by the Engineer.

Surface Texture: Each tooth on the cutting drum shall produce a series of discontinuous longitudinal striations. There shall be 16 to 20 striations (tooth marks) for each tooth for each 1.8 m (6 feet) in the longitudinal direction, and each striation shall be 43 +/- 5 mm (1.7 inches +/- 0.2 inch) in length after the area is planed by the moldboard. Thus, the planed length between each pair of striations shall be 58 +/- 5 mm (2.3 inches +/- 0.2 inch). There shall be 80 to 96 rows of discontinuous longitudinal striations for each 1.5 m (5 feet) in the transverse dimension.

The areas between the striations in both the longitudinal and transverse directions shall be flat topped and coplaner. The moldboard shall be used to cut this plane; and any time the operation fails to produce this flat plane interspersed with a uniform pattern of discontinuous longitudinal striations, the operation shall be stopped and the cause determined and corrected before recommencing. Other similar patterns of uniform discontinuous longitudinal striations interspersed on a flat plane may be approved by the Engineer. The drawing titled "Bituminous Surface Removal" showing the desired surface texture is included in the plans.

The start-up milling speed shall be limited to a maximum of 15 m (50 foot) per minute. The Contractor shall limit his operations to this speed to demonstrate his ability to obtain the striations and rideability as described above. If the Contractor is able to demonstrate that he can consistently obtain the desired striations and rideability at a greater speed he will be permitted to run at the increased speed.

Cleanup: After cold milling a traffic lane and before opening the lane to traffic, the pavement shall be swept by a mechanical broom to prevent compaction of the cuttings onto the pavement. All loose material shall be removed from the roadway. Before the prime coat is placed, the pavement shall be cleaned of all foreign material to the satisfaction of the Engineer.

This cleanup work shall be considered included in the contract unit price per square meter (square yard) for BITUMINOUS SURFACE REMOVAL of the depth specified, and no additional compensation will be allowed.

Method of Measurement:

- (a) Contract Quantities. The requirements for the use of Contract Quantities shall be Article 202.07(a) of the Standard Specifications.
- (b) Measured Quantities. Cold milling and planing will be measured and the area computed in square meters (square yards) of surface.

Areas not milled (shadowed areas) due to rutting in the existing pavement surface will be included in the area measured for payment.

Basis of Payment: The cold milling and planing will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS SURFACE REMOVAL of the depth specified. Payment as specified will include variations in depth of cuts due to rutting, superelevations, and pavement crown and no additional compensation will be allowed.

**BITUMINOUS SURFACE REMOVAL, VARIABLE DEPTH**

Effective February 5, 1993

Revised January 3, 2000

Add the following to Article 440.03:

Weather conditions, when milling work is performed, must be such that short term or temporary pavement markings can be placed the day the surface is milled in accordance with Section 703 "Work Zone Pavement Markings".

The cutting teeth used in the milling operation shall be the GTE AM722, or an approved equivalent. When the teeth become worn so that they do not produce a uniform surface texture, they shall all be changed at the same time (as a unit). Occasionally, individual teeth may be changed if they lock up or break, but this method shall not be used to avoid changing the set of teeth as a unit.

The moldboard is critical in obtaining the desired surface texture. It shall be straight, true, and free of excessive nicks or wear, and it shall be replaced as necessary to uniformly produce the required surface texture. Gouging of the pavement by more than 6 mm (1/4 inch) shall be sufficient cause to require replacement of all teeth, occasional gouges, due to deteriorated pavement condition, or separation of lifts will not be cause to replace all teeth. The Engineer will be the sole judge of the cause of the pavement gouging and the corrective work required. Corrective work due to negligence or poor workmanship will be at the Contractor's expense.

The Contractor shall mill 40-100 mm (1-1/2 -4 inch) at the centerline, except when the milling at the outer edge of the lane would exceed 40 mm (1.5 inches); then the Contractor shall reduce the cut at the centerline to provide the maximum cut of 40 mm (1.5 inches) at the edge of pavement. If deemed necessary, the Contractor may reduce the cross slope from normal to 1.5% to 1%. A drawing labeled "Bituminous Surface Removal" is included in the plans.

An automatic grade control device shall be used when milling mainline pavement and shall be capable of controlling the elevation of the drum relative to either a preset grade control stringline or a grade reference device traveling on the adjacent pavement surface. The automatic grade control device may be utilized on only one side of the machine with an automatic slope control device controlling the opposite side. The traveling grade reference device shall not be less than 9 m (30 feet) in length for rural areas. For urban areas, a device not less than 6 m (20 feet) in length will be required. When milling cross roads, turn lanes, intersections, crossovers, or other miscellaneous areas, the Engineer may permit the use of a matching shoe.

Surface tests will be performed according to Article 407.09(a) of the Standard Specifications. The profile will be taken 0.9 m (3 ft.) from and parallel to each edge of pavement and 0.9 m (3 ft.) from and parallel to the centerline on each side. If a shadow area is found at the 0.9 m (3 ft.) points, the pavement smoothness tester will be moved sufficient distance either side to measure the Contractor's milling efforts. If any (milled) surface variations found to be over 6 mm in 3 m (1/4" in 10'), then the roadway shall be reprofiled at no additional cost. In addition, the Contractor shall be responsible for refilling, with approved Class I bituminous mixtures, any area that lowered the pavement profile as a result of his faulty milling operations if directed by the Engineer. The Contractor shall be responsible for providing the pavement smoothness tester described elsewhere to retest the pavement profile obtained.

If the milling depth is intended to expose the original concrete pavement, then additional hand or machine work may be necessary to remove any remaining veneer of bituminous pavement which may be left in place behind the milling machine. Such work will be at the direction of the Engineer and at no extra cost to the State.

The Contractor shall provide a 3 m (10 foot) straightedge equipped with a carpenter's level or a 2.1 m (7 foot) electronic straightedge to check the cross slope of the roadway at regular intervals as directed by the Engineer.

Surface Texture: Each tooth on the cutting drum shall produce a series of discontinuous longitudinal striations. There shall be 16 to 20 striations (tooth marks) for each tooth for each 1.8 m (6 feet) in the longitudinal direction, and each striation shall be 43 +/- 5 mm (1.7 inches +/- 0.2 inch) in length after the area is planed by the moldboard. Thus, the planed length between each pair of striations shall be 58 +/- 5 mm (2.3 inches +/- 0.2 inch). There shall be 80 to 96 rows of discontinuous longitudinal striations for each 1.5 m (5 feet) in the transverse dimension. The areas between the striations in both the longitudinal and transverse directions shall be flat topped and coplaner. The moldboard shall be used to cut this plane; and any time the operation fails to produce this flat plane interspersed with a uniform pattern of discontinuous longitudinal striations, the operation shall be stopped and the cause determined and corrected before recommencing. Other similar patterns of uniform discontinuous longitudinal striations interspersed on a flat plane may be approved by the Engineer. A drawing entitled "Bituminous Surface Removal" showing the desired surface texture is included in the plans.

The startup milling speed shall be limited to a maximum of 15 m (50 foot) per minute. The Contractor shall limit his operations to this speed to demonstrate his ability to obtain the striations and rideability as described above. If the Contractor is able to demonstrate that he can consistently obtain the desired striations and rideability at a greater speed he will be permitted to run at the increased speed.

Cleanup: After cold milling a traffic lane and before opening the lane to traffic, the pavement shall be swept by mechanical broom to prevent compaction of the cuttings onto the pavement. All loose material shall be removed from the roadway. Before the prime coat is placed, the pavement shall be cleaned of all foreign material to the satisfaction of the Engineer.

This cleanup work shall be considered included in the contract unit price per square meter (square yard) for BITUMINOUS SURFACE REMOVAL of the depth specified, and no additional compensation will be allowed.

#### Method of Measurement

- (a) Contract Quantities. The requirements for the use of Contract Quantities shall be Article 202.07(a) of the Standard Specifications.
- (b) Measured Quantities. Cold milling and planing will be measured and the area computed in square meters (square yards) of surface.

Areas not milled (shadow areas) due to rutting in the existing pavement surface will be included in the area measured for payment.

Basis of Payment: The cold milling and planning will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS SURFACE REMOVAL of the depth specified. Payment as specified will include variations in depth of cuts due to rutting, superelevations, and pavement crown and no additional compensation will be allowed.

## **PROTECTION OF FRAMES AND LIDS OF UTILITY STRUCTURES**

Effective March 6, 1991

Revised September 29, 2000

This work shall consist of protecting frames and lids of utility structures in the pavement after the adjacent bituminous surface has been removed to the required depth by cold milling or by hand methods.

After the area has been swept clean and before the lane is opened to traffic, a hot bituminous mixture shall be placed around the casting, flush with its surface and decreasing to a featheredge in a distance of 1.2 m (4 feet) around the entire surface of the casting. Cold mix or milled material will not be permitted. This mixture shall remain in place until the day surfacing operations are undertaken within the immediate area of the structure. Prior to placing the surface course, the temporary bituminous mixture shall be removed and disposed of by the Contractor as specified in Article 202.03 of the Standard Specifications.

The temporary bituminous tapers and their removal shall be considered included in the contract unit price per square meter (square yard) for BITUMINOUS SURFACE REMOVAL of the depth specified, and no additional compensation will be allowed.

## **PAVEMENT DRAINAGE AFTER COLD MILLING**

Effective March 15, 1996

This work shall consist of cold milling a 40 mm (1.5") deep and 0.6 m (2') wide drainage channel through the existing shoulder at locations as directed by the Engineer and replacing the mix after the surface has been placed.

To prevent pooling of water in the milled surface, a drainage channel shall be cut in the shoulder at low spots in superelevated curves and other locations where pooling of water may occur as specified by the Engineer.

After the surface has been placed on the adjacent through lane, the drainage channel shall be primed and then filled with a bituminous shoulder mix approved by the Engineer and compacted to the satisfaction of the Engineer.

This work shall be paid for under the provisions of Article 109.04.

## **CLASS B PATCHES, TYPE II, 375 MM**

Effective January 1, 1999

Revised October 1, 2003

This work shall consist of pavement patching in accordance with applicable portions of Section 442 except as herein specified.

The patching mixture as specified in the Special Provision titled Portland Cement Concrete Patching shall be either Class PP-2, PP-3, or PP-4.

## **REFLECTIVE CRACK CONTROL TREATMENT**

Effective March 1, 1996

Revised March 1, 1997

Revise the 2nd and 3rd sentences of Article 443.01 to read as follows:

“Area reflective crack control treatment shall be System A. Strip reflective crack control treatment shall be System A.”

Add the following paragraph to Article 443.04:

“If rain is imminent, the Contractor is to apply a fog coat prime and a fine aggregate blotter, as directed by the Engineer, to all area crack control fabric that has been placed but not overlaid. This work shall be completed in accordance with Article 406.06, and will be paid for in accordance with Article 109.04.”

Add the following paragraph to Article 443.05:

“The bituminous concrete leveling binder, binder course, or surface course mixture placement on the crack control treatment shall be completed within two working days of the time the crack control is installed.

Reflective crack control treatment placed more than two working days in advance of the overlay placement will be inspected by the Engineer prior to placing the overlay. Any corrective work required by the Engineer shall be completed by the Contractor at no cost to the Department.”

Revise the first sentence of Article 443.06 to read as follows:

“The area to be covered with fabric shall be sprayed uniformly with asphalt binder at a rate of 0.8 to 1.3 L/m<sup>2</sup> (0.20 to 0.30 gal/sq yd) as directed by the Engineer.

Add after the first paragraph of Article 443.06:

“If the asphalt cement binder bleeds through the fabric under traffic, then a fine aggregate blotter shall be applied as directed by the Engineer and paid for in accordance with Article 109.04.

After reflective crack control placement and prior to the bituminous overlay placement, the Contractor shall furnish, erect and maintain SLIPPERY WHEN WET signs at such locations when required during wet weather. The cost of this work shall be included in the unit prices bid and no additional compensation will be allowed.”

## **BITUMINOUS SHOULDER RESURFACING CONSTRUCTED SIMULTANEOUSLY WITH MAINLINE PAVING**

Effective January 22, 2001

Revised April 29, 2005

If the Department allows resurfacing bituminous shoulders simultaneously with the mainline pavement resurfacing, a roller meeting the requirements of Article 482.06 shall be required.



This roller will be in addition to any rollers required for compaction of the mainline roadway resurfacing. This additional roller will not be paid for separately, but shall be included in the contract unit price bid for the mainline bituminous material being placed.

### **SEEPAGE COLLAR**

Effective December 1, 1996

This work shall be done in accordance with Section 542 of the Standard Specifications and details shown in the plans.

Basis of Payment. This work will be paid for at the contract unit price per each for SEEPAGE COLLAR.

### **PIPE CULVERTS**

Effective July 1, 1990

Revised July 1, 1994

Add the following sentence to the fourth paragraph of Article 542.04(d): "All connecting bands shall be a minimum of 600 mm (24") wide".

### **BACKFILL - PIPE CULVERTS**

Effective October 15, 1995

Revised April 23, 2004

When trenches or excavation are made across existing pavement to remain in place, revise Article 542.04(e) 4th and 5th paragraphs as follows:

"The remainder of the trench and excavation shall be backfilled with trench backfill. All backfill material shall be deposited in the trench or excavation in such a manner as not to damage the culvert. Trench backfill above the center of the pipe shall be compacted by either Method 2 or Method 3 specified in Article 550.07, or in accordance with Method 1 specified in Article 550.07, except that the compacted lifts shall not exceed 200 mm (8 inches) in thickness.

When the trench has been widened for the removal and replacement of unstable or unsuitable material, the backfilling with trench backfill and impervious material will be required for the entire width of the trench or excavation. Each 200 mm (8 inch) layer for the entire trench width shall be completed before beginning the placement of the next layer."

Basis of Payment: This work will not be paid for separately but shall be included in the contract unit price per meter (foot) for PIPE CULVERTS, of the type and diameter specified. Trench backfill will be paid for as specified in Article 208.04.

### **INLETS, TYPE G-1, SPECIAL**

Effective October 1, 1995

This work shall consist of furnishing all labor, equipment, and material for the construction of Type G-1, Special inlets and Combination Concrete Curb and Gutter in accordance with

Sections 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLETS, G-1, SPECIAL" to Article 602.115 of the Standard Specifications. Delete the first paragraph in Articles 606.13 and 606.14.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLETS, TYPE G-1, SPECIAL" in accordance with details shown in the plans.

This work will be paid for at the contract unit price each for INLETS, TYPE G-1, SPECIAL.

### **INLETS, TYPE G-1, DOUBLE, SPECIAL**

Effective October 1, 1995

This work shall consist of furnishing equipment, labor, and materials for the construction of Type G-1, Double, Special Inlets and Combination Concrete Curb and Gutter in accordance with Section 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLETS, TYPE G-1, DOUBLE, SPECIAL" to Article 602.15 of the Standard Specifications. Delete the first paragraph in Articles 606.13 and 606.14.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLETS, TYPE G-1, DOUBLE SPECIAL" in accordance with details shown in the plans.

This work will be paid for at the contract unit price each for INLETS, TYPE G-1, DOUBLE, SPECIAL.

### **INLET-MANHOLE, TYPE G-1, 1.2 M (4') DIAMETER**

Effective October 1, 1995

This work shall consist of furnishing all labor, equipment, and materials for the construction of Inlet-Manhole, Type G-1, 1.2 m (4') Diameter and Combination Concrete Curb and Gutter in accordance with Sections 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLET-MANHOLE, TYPE G-1, 1.2 m (4') DIAMETER" to Article 602.15 of the Standard Specifications. Delete the first paragraph of Articles 606.13 and 606.14.

Payment for transitional Combination Curb and Gutter will be included in "INLET-MANHOLE, TYPE G-1, 1.2 m (4') DIAMETER" in accordance with details shown in the plans.

This work will be paid for at the contract unit price each for INLET-MANHOLE, TYPE G-1, 1.2 m (4') DIAMETER.

### **INLET-MANHOLE, TYPE G-1, 1.5 M (5') DIAMETER**

Effective October 1, 1995

This work shall consist of furnishing all labor, equipment, and materials for the construction of Inlet-Manhole, Type G-1, 1.5 m (5') Diameter and Combination Concrete Curb and Gutter in accordance with Sections 602 and 606 of the Standard Specifications and the details in the plans.

Add "INLET-MANHOLE, TYPE G-1, 1.5 m (5') DIAMETER" to Article 602.15 of the Standard Specifications. Delete the first paragraph of Articles 606.13 and 606.14.

Payment for transitional Combination Concrete Curb and Gutter will be included in "INLET-MANHOLE, TYPE G-1, 1.5 m (5') DIAMETER" in accordance with details shown in the plans.

The work will be paid for at the contract unit price each for INLET-MANHOLE, TYPE G-1, 1.5 m (5') DIAMETER.

### **GUARDRAIL AGGREGATE EROSION CONTROL**

Effective February 1, 1993

Revised May 1, 1995

This work shall consist of furnishing, placing, and shaping crushed aggregate placed around and behind guardrail posts in accordance with plan details.

Method of Measurement: The aggregate for constructing the Guardrail Aggregate Erosion Control will be measured in metric tons (tons).

The Geotextile Fabric will not be measured for payment.

Basis of Payment: Guardrail Aggregate Erosion Control will be paid for at the contract unit price per metric ton (ton) for GUARDRAIL AGGREGATE EROSION CONTROL measured as specified herein. The Geotextile Fabric will not be measured for payment, but shall be included in the cost per metric ton (ton) for GUARDRAIL AGGREGATE EROSION CONTROL.

### **FLEXIBLE DELINEATOR MAINTENANCE**

Effective May 5, 1992

Revised January 1, 1994

This item shall consist of all material and labor necessary to maintain the base of the flexible delineators required as part of Traffic Control and Protection, Standard \*.

The re-attachment of the flexible delineator to the base shall be considered incidental to Traffic Control and Protection, Standard \*.

Any unit which needs repair because the attachment of the base to the pavement failed within 120 hours after installation shall be re-attached by the Contractor at his expense.

The quantity listed in the contract is only an estimate of the anticipated number of units requiring repair.

FLEXIBLE DELINEATOR MAINTENANCE will be paid for in accordance with Article 109.04 of the Standard Specifications and shall consist of maintaining the flexible delineator bases required as part of Traffic Control and Protection, Standard \*.

## **FLEXIBLE DELINEATORS**

Effective October 1, 1995

Revised September 23, 1996

Flexible delineators shall meet the requirements of Traffic Control and Protection Standard 702001 of the Illinois Highway Design Standards for Traffic Control and as modified herein.

Flexible delineators post shall be of a hinged, self recovering design, as manufactured by Flexstake, Inc. or an approved equal.

The top portion of the post is made of a polycarbonate material which shall be resistant to impact, ultraviolet light, ozone hydrocarbons, and shall be self-erecting after withstanding vehicle impacts. Polycarbonate post shall remain dimensionally stable from -100° C (-150° F) (brittleness point) to 140° C (285° F) (melting point).

Post shall remain intact up to seventy-five impacts at a vehicle speed of 90 kph (55 MPH) by a typical American made car from either direction at temperatures from -35° C to 55° C (-30° F to 130° F).

The top section of the post shall be surface mount with a polyurethane hinge. The hinge shall have an internal memory and remain dimensionally stable to from -35° C (-30° F).

The minimum width at the top of the post shall be 75 mm (3 inches) and the maximum wall thickness shall be 5 mm (0.180 inches). Lengths shall be a minimum height of 1 m (3 feet).

The posts shall be orange in color. They shall be colorfast and shall be designed to provide an essential convex surface to accommodate a 100 mm (4 inches) wide reflective sheeting on both sides. Sheeting shall meet Article 1097.03 of the Standard Specifications and shall have two alternating, reflectorized white and two alternating orange stripes sloping downward at 45° toward the side on which traffic will pass.

Posts shall be free of surface porosity and other defects that may affect appearance and serviceability.

Posts shall contain a minimum of 40% (by weight) post consumer recycled material, and all material shall be recycled.

Posts shall be field-repairable with a repair kit. Posts and other components shall be field replaceable.

When an existing flexible delineator needs to be replaced due to numerous vehicular hits, the new flexible delineator will be paid for at the contract unit price.

This work will be paid for at the contract unit price per each for FLEXIBLE DELINEATORS.

### **PERMANENT SURVEY MARKER, TYPE 1, BRIDGE PLACEMENT**

Effective July 1, 1990

Revised September 1, 1997

This work shall consist of furnishing and installing a Permanent Survey Marker as shown on the plans and as specified herein. The survey marker shall be placed in either the abutment seat or in the top of the wingwall. The survey marker shall be located in the same corner as the Bridge Name Plate as shown on the current Standard for Name Plate for Bridges. If the survey marker is to be located on the abutment seat of the structure, it shall be placed in a location with at least 2.4 m (8'-0") vertical clearance directly above the survey marker, if possible.

After installation, the Contractor shall stamp the elevation provided by the Engineer in the face of the survey marker. The Engineer shall provide the District Chief of Surveys with the elevation and location of the marker.

This work will be paid for at the contract unit price each for PERMANENT SURVEY MARKER, TYPE I.

### **SPEEDING PENALTY**

Effective: January 21, 2005

For traffic control standards containing Illinois Sign Standard R2-I106. The dollar amount to be placed on the sign is \$375. Therefore, the sign shall read "\$375 FINE MINIMUM."

The cost of this work shall be included in the cost of the traffic control standard.

### **TRENCH AND BACKFILL, SPECIAL FOR CONDUIT INSTALLATION BENEATH BITUMINOUS SHOULDERS**

Effective March 21, 1994

Revised October 29, 1996

This work shall consist of constructing a trench beneath the bituminous paved shoulder and backfilling it.

The trench shall be constructed in accordance with and at the locations specified in the plans or as directed by the Engineer. The sides of the trench shall be saw-cut through the full depth of the bituminous shoulder material.

The trench shall be not less than 600 mm (24") in depth. The width shall be as required to accommodate the appropriate number of conduits required at each specified location. The bottom of the trench shall be tamped and the trench inspected by the Engineer before the conduits are placed in the trench.

All trenches shall be backfilled as soon as possible after the installation of the conduits. The trench shall be backfilled in accordance with Section 208 of the Standard Specifications. Cinders, rocks, or other deleterious materials will not be permitted in the backfilling material.

Backfilling materials shall be deposited in the trench in layers not to exceed 150 mm (6") in depth, and shall be thoroughly compacted with a mechanical tamper before the next layer is deposited in the trench.

Bituminous surfacing shall be used to restore the shoulders to the existing grade. The bituminous material shall be compacted and finished as directed by the Engineer.

This work will be paid for at the contract unit price per meter (foot), measured in place along a line perpendicular to the roadway centerline and between the edge of pavement and the outside edge of the shoulders, for TRENCH AND BACKFILL, SPECIAL. The price for this item shall include the cost of all excavation, furnishing, and placing all backfill material, the disposal of surplus material, and the bituminous surfacing.

### **TERMINAL FACILITY**

Effective March 21, 1994

Revised September 1, 1997

This item shall consist of furnishing and installing a loop terminal facility at the location indicated on the plans, or as directed by the Engineer.

The terminal facility shall be provided and wired as shown on the plans. The metal moisture-proof mounting box shall have a keyed entry and shall be mounted on a 102 mm x 152 mm x 1.83 m (4" x 6" x 6') or 102 mm x 102 mm x 1.83 mm (4" x 4" x 6') treated wood post (as directed by the Engineer) meeting the requirements of Section 1007 of the Standard Specifications. The treated wood post shall be installed at the location indicated on the plans or as directed by the Engineer. The P.V.C. conduit will be of the same type used in P.V.C. Conduit in Trench.

The #18 multi-pair twisted shielded wire loop leads shall be placed in the box to provide slack as necessary to connect to the terminal strip. The two lead wires from each loop shall be connected to their respective terminals on the terminal strip.

The metal moisture-proof mounting box shall be fastened to the treated wood post through at least two lugs with 38 mm (1-1/2") #8 round head wood screws. The metal moisture-proof mounting box shall be attached with a reducing adapter to the vertical section of P.V.C. conduit. The P.V.C. conduit shall be held in place against the treated wood post with a clamp located approximately 229 mm (9") above the ground line.

Care should be taken during the backfilling of the trench to not put excessive pressure on the conduit and cause a separation of conduit and reducing adapter.

This work will be paid for at the contract unit price each for TERMINAL FACILITY, which price shall be payment in full for all necessary labor, equipment, backfilling, disposal of surplus materials, and furnishing all materials for completion of the facility.

**ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18**

Effective March 21, 1994

Revised October 15, 2001

This work shall consist of furnishing and installing loop detector lead-in cables of interconnect cables of the number of pairs specified in the conduit in accordance with the requirements of Section 873 of the Standard Specifications and the following exceptions or additions:

Each end of the cable shall be identified with wire markers as directed by the Engineer.

The drain wire of each pair shall be grounded to chassis ground in the terminal facility junction box for surge suppression.

The electrical values of the cable shall be metered by the Contractor, in the presence of the Engineer, after they are spliced to the detector loop. Acceptance of the cable as metered will be determined by the Engineer.

This work will be paid for at the contract unit price per meter (foot) for ELECTRICAL CABLE IN CONDUIT, LEAD-IN, NO. 18, 1-PAIR or ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18, 3-PAIR, which price shall be payment in full for furnishing the material and making all electrical connections and installing the cable complete, measured as specified.

**DETECTOR LOOP, SPECIAL FOR TRAFFIC COUNTERS**

Effective March 21, 1994

Revised October 15, 2001

This work shall consist of furnishing, installing, and testing detector loops in the pavement in conformance with the requirements of the plans, Section 886 of the Standard Specifications for Type I Detector Loops with the following exceptions:

If the saw slot was dry cut, water does not have to be used in the cleaning of the sawed slot. The slot may be cleaned by air pressure alone. If water is used, all water must be cleaned from slots by compressed air before wire installation.

Drilled holes shall be made at all corners to prevent sharp bends in the wire. Diagonal saw cuts shall not be used. The diameter of the holes shall be 32 mm (1-1/4"). The sharp corners where the drilled holes intersect the saw slots shall be knocked off with a chisel.

The resistance shall be a minimum of 100 megohms above ground under any conditions of weather or moisture. The loop and lead-in circuit shall have an inductance between 50 and 350 microhenries, 175 microhenries nominal. The quality factor (Q) shall be greater than 5. The Contractor shall provide the necessary instruments and do all the testing in the presence of the Engineer, and shall provide a copy of test results.

Each detector lead-in shall be installed in a separate P.V.C. conduit as shown in the plans. This conduit extends from the edge of pavement to the nearest gulfbox or terminal facility. The lead-in wires from each loop shall be twisted a minimum of 5 turns per 305 mm (12").

Detector loops shall be centered in traffic lanes unless designated otherwise on the plans or by the Engineer. Traffic lanes shall be referred to by number as shown on the plans, and loop wires shall be color-coded accordingly. Color code shall be: Lane #1 - red, Lane #2 - white, Lane #3 - green, and Lane #4 - blue.

At all locations where pavement joints that are not doweled or pavement separation cracks (including areas where bituminous pavement abuts concrete pavement) are encountered by the slots sawed for the placement of the detector loops or lead-ins, a cored expansion hole shall be made per Standard 886001. The cored expansion holes are included in this pay item and no additional compensation will be made.

This work will be paid for at the contract unit price per meter (foot) of DETECTOR LOOP, SPECIAL of the type specified, measured along the sawed slot in the pavement containing the loops and lead-in, rather than the actual length of wire in the slot, which price shall be payment in full for furnishing, installing, and testing the detector loop complete in place.

### **GRANULAR AGGREGATE COURSES**

Effective February 19, 1992

Revised October 1, 1999

Revise the first sentence in the fifth paragraph of Article 1004.04(c) to read: "For granular aggregate courses--base, subbase, and shoulder except subbase Types B and C--gradation CA 6 or CA 10 may be used."

### **RAP MATERIALS - CRUSHED STEEL SLAG**

Effective April 1, 1997

Add the following to Article 1004.07 of the Standard Specifications: RAP containing crushed steel slag will be permitted in Bituminous Mixtures C and D as final top lift only.

### **SELF-CONSOLIDATING CONCRETE FOR CAST-IN-PLACE CONCRETE ITEMS**

Effective April 9, 2004

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

Usage. A self-consolidating admixture system may be used for cast-in-place concrete items when approved by the Engineer. The design and testing of a self-consolidating concrete mixture shall be according to Section 1020 of the Standard Specifications except as modified herein.

Materials. Materials shall conform to the following requirements:

- (1) Cement. The minimum cement factor shall be according to Article 1020.04 or as specified. The maximum cement factor shall be 418 kg/cu m (7.05 cwt/cu yd). The cement factor shall not be reduced if a water-reducing, retarding, or high range water-reducing admixture is used.



- (2) Water-Cement Ratio. The maximum allowable water/cement ratio shall be according to Article 1020.04 or 0.42, whichever is lower.
- (3) Slump Flow. The allowable slump flow range shall be 510 mm (20 in.) minimum to 760 mm (30 in.) maximum.
- (4) Visual Stability Index (VSI). The VSI shall be a maximum of 1.
- (5) Fine Aggregate. The fine aggregate proportion shall not exceed 50 % mass (weight) of the total aggregate used.
- (6) Coarse Aggregate. The allowable coarse aggregate gradations shall be CA 7, CA 11, CA 13, CA 14, CA 16, or a blend of these gradations.

All mix designs will be created by the Department in cooperation with the admixture supplier.

Self-Consolidating Concrete Trial Batch. A trial batch for the self-consolidating concrete mix design shall be scheduled a minimum of 21 calendar days prior to anticipated use, and shall be performed in the presence of the Engineer.

A minimum 1 cubic meter (1 cubic yard) trial batch shall be produced. The mixture will be evaluated by the Department for compressive strength, air content, slump flow, and visual stability index. The mixture shall be required to consolidate without vibration. The Contractor shall provide the labor, equipment, and materials to test the concrete. If necessary, the Contractor shall be responsible for disposal of the concrete according to Article 202.03.

For the trial batch, the slump flow shall be within  $\pm 20$  mm (0.75 in.) and the air content within  $\pm 0.5$  percent of the mix design target values. The values shall also be within specification limits. The visual stability index shall be a maximum of 1. Strength shall be determined by the Contractor at 3, 7, and 14 days. At the Contractor's option, strength may be determined for additional days. Each day's strength shall be determined as the average of a minimum of two cylinder breaks. The Contractor shall perform tests according to Illinois Modified AASHTO T 22, T 23, T 141, and T 152, except all specimen molds and test containers shall be filled in one lift without vibration, rodding, or tapping. The slump flow and visual stability index shall be done per the Department's test method.

Self-Consolidating Admixtures. The self-consolidating admixture system shall consist of either a high range water-reducing admixture only or a high range water-reducing admixture and a separate viscosity modifying admixture. The one or two component admixture system shall be capable of producing a flowable concrete that does not require mechanical vibration.

- (a) The high range water-reducing admixture shall comply with the requirements of AASHTO M 194, Type F.
- (b) The viscosity modifying admixture will be evaluated according to the test methods referenced in AASHTO M 194, and shall comply with the following physical requirements.

- (1) For initial and final set times, the allowable deviation of the test concrete from the reference concrete shall not be more than 1.0 hour earlier or 1.5 hours later.
- (2) For compressive and flexural strengths, the test concrete shall be a minimum of 90 percent of the reference concrete at 3, 7, and 28 days.
- (3) The length change of the test concrete shall be a maximum 135 percent of the reference concrete. However, if the length change of the reference concrete is less than 0.030 percent, the length change of the test concrete shall be a maximum 0.010 percentage units greater than the reference concrete.
- (4) The relative durability factor of the test concrete shall be a minimum 80 percent.

Mixing Procedures for Ready-Mix Suppliers. It may be necessary to alter batching sequences to incorporate the SCC admixture. Batching procedures will be established by the admixture supplier and approved by the Department.

Article 1020.11 (d)(2) for transit mixed concrete will be modified to increase the number of mixing revolutions at the plant from 70 revolutions to 100 revolutions minimum. Central-mixed plants may require additional mixing time for SCC batches if the desired initial flow is not evident at the jobsite. The additional mixing time will be determined by the Engineer.

At the start of a contract and in the absence of previous experience with the particular mix design, additional resources may be needed for supervision of all aspects of initial production of SCC.

Since the quality of freshly mixed concrete may fluctuate at the beginning of production, it is recommended that workability tests should be conducted by the producer on every load, until consistent and compliant results are obtained. Subsequently, every delivered batch should be visually checked before transportation to site, and routine testing carried out to the specified frequency as per the QC/QA specifications.

Careful and diligent monitoring of aggregate moisture content is paramount to the success of batching consistent SCC. More frequent adjustment of mix proportions, particularly water content, may need to be made, depending on the results from monitoring aggregate moisture content.

Delivery and Transportation. Depending on the size of the concrete structure to be produced in SCC, production capacity, journey time, and placing capability need to be balanced. Unexpected production stops can result in consistency variations that adversely affect the end result. Placing is faster, especially if a pump is used, but it is still essential to make sure that delivery and placing can be completed within the workability-retention (self-compactability) time of the concrete.

Concrete Placement and Formwork: Formwork should be built to ensure fluid concrete will not be lost through large gaps or openings. For forms in excess of 3m in height, the full hydrostatic head pressure of the concrete should be taken into consideration. This may require modification of the formwork design.

To limit the potential for mix segregation, the maximum distance of horizontal flow from point of discharge is 10m. This distance may be extended if the contractor can demonstrate that greater distances can be poured without adverse effects on the quality of the mix or the aesthetics of the finish.

Curing: SCC tends to dry faster than conventional concrete because there is little or no bleed water at the surface. Therefore, initial curing should be commenced as soon as practicable after placing in order to minimize the risk of shrinkage cracking.

## **DUST CONTROL**

Effective: March 8, 2002

### Description

This work shall consist of implementing dust control measures as outlined in a project Dust Control Plan. Work shall be governed by the project Dust Control Plan to be submitted by the Contractor, the applicable sections of Article 107.36 of the Standard Specifications, and modifications as contained herein.

The Contractor is responsible for the control of dust at all times during the duration of this contract, 24 hours per day, 7 days per week, including non-working hours, weekends, and holidays. This work shall be considered complete after the completion of all permanent erosion control measures required for the contract, and after all temporary and permanent seeding has taken place.

Work on this contract shall be conducted in a manner that will not result in excessive particulate matter emissions, nuisance dust conditions, or PM 10 (particulate matter with an aerodynamic diameter less than or equal to 10 microns).

The Dust Control Plan shall include legible copies of the product literature and Material Safety Data Sheets for dust suppression agents and stabilizers the contractor proposes to use. The Dust Control Plan shall involve the implementation of control measures before, during and after conducting any dust generating operation. These controls must be in place on non-working days and after working hours, not just while work is being done on the site. The Dust Control Plan must contain information specific to the project site, proposed work, and dust control measures to be implemented. A copy of the Dust Control Plan must be available on the project site at all times.

The Dust Control Plan must contain, at a minimum, all of the following information:

- Name, address and phone number of the person(s) responsible for the dust generating operation and for the submittal and implementation of the Dust Control Plan.
- A drawing specifying the site boundaries of the entire project with areas to be disturbed, the locations of the nearest public roads, and all planned exit and entrance locations to the site from paved public roadways.
- Control measures to be applied to all actual and potential fugitive dust sources, before, during and after conducting any dust generating operation, including non-work hours and on-work days.

- Dust suppressants to be applied, including product specifications, material data safety sheets, and label instructions that include method, frequency and intensity of applications. Information on the environmental impacts and approval or certifications related to the appropriate and safe use for ground applications.
- A contingency plan consisting of at least one contingency measure for each activity occurring on the site in case the primary control measures prove inadequate.

The contractor shall submit two copies of the dust control plan that outlines in detail the measures to be implemented by the Contractor complying with this section, including prevention, cleanup, and other measures at least 30 days before beginning any dust generating activity. The Contractor shall not begin any dust generating activities until the Engineer approves the Dust Control Plan in writing.

### Materials

#### 1. Dust Suppression Agents

Water shall meet the requirements of Article 1002 of the Standard Specifications. Calcium Chloride shall conform to the requirements of Article 1013.01 of the Standard Specifications. Other commercially available dust suppression agents may be substituted for calcium chloride subject to the approval of the Engineer. Dust suppression agents shall be water-soluble, non-toxic, non-reactive, non-volatile, and non-foaming.

2. Soil stabilizers shall consist of hydraulic mulch or chemical mulch meeting the requirements of Article 1081.06 (a)(2) and (3).

3. Covers for stockpiles shall be commercially available plastic tarps.

### Construction Methods

The use of petroleum products for dust control is prohibited.

Wet suppression or use of dust suppression agents shall be used to provide temporary control of dust on haul roads and other active work areas. Several applications per day may be necessary to control dust depending upon meteorological conditions and work activity. The contractor shall apply dust suppression on a routine basis as necessary or as directed by the Engineer, to control dust.

Wet suppression consists of the application of water or a wetting agent in solution with water. Wetting agents shall not be applied directly to live plant material.

Wet suppression equipment shall consist of sprinkler pipelines, tanks, tank trucks, or other devices approved by the Engineer, capable of providing regulated flow, uniform spray, and positive shut off.

Calcium chloride dust suppression agents may be used in lieu of wet suppression, and shall be used to control dust instead of wet suppression when freezing conditions exist. Calcium chloride shall be uniformly applied by a mechanical spreader at a rate of 2.2 kg per square

meter (1 ½ pounds per square yard) or its equivalent liquid, unless otherwise directed by the Engineer. Calcium chloride shall not be applied directly to live plant material.

Calcium Chloride must not be stored outdoors without an impermeable cover. Storage must be on an impermeable surface such as paved asphalt or appropriately treated concrete of sufficient thickness to avoid exfiltration. Storage should be as airtight as possible to limit the calcium chloride's absorbing moisture from the air. No storage facilities will be allowed within 30 meters of a freshwater wetland. Positive drainage must be maintained on all treated surfaces. Ditches, culverts and other structures must be kept clean to ensure proper drainage and to limit the amount of water infiltrating earth surfaces and thereby leaching out chlorides. If calcium chloride is applied dry or, if during dry periods, crystals are seen on the road surface, the road should be wetted sufficiently to dissolve the calcium chloride. Wetting should be limited to an amount, which will sufficiently cause the calcium chloride to penetrate the surface but not to the point of causing any runoff from the road surface.

Other approved dust suppression agents shall be applied and used as per the manufacturer's instructions.

Haul truck cargo areas shall be securely covered during material transport on public roadways.

#### Public Roadway Dust Control

Trackout, including carryout and spillage of material that adheres to the exterior surfaces of or are spilled from motor vehicles and /or equipment and subsequently fall onto a paved public roadway must be controlled at all times. Control of trackout can be accomplished using the control measures described below:

- Gravel Pads: This shall consist of a stabilized gravel construction pad placed at points where construction vehicles are entering onto paved public roadways. The gravel pads purpose is to remove mud and dirt from the tires of vehicles leaving the construction site. The gravel pad shall consist of 1" to 3" diameter washed, well-graded gravel or crushed rock. The gravel pad should be at least 10 meters wide by 15 meters long, and a minimum of 150 mm deep.
- Grizzly A-Device: This item shall consist of pipes, rails or grates used to dislodge mud, dirt and debris from the tires and undercarriage of motor vehicles prior to leaving the work site.

Gravel pads and/or Grizzly A-Devices must be routinely cleaned and maintained so that performance meets the satisfaction of the Engineer. Clean up of carryout and spillage is required immediately if it extends a cumulative distance of 15 meters or more. If the extent of carryout is less than 15 meters, clean up at the end of the day is permissible. Cleanup of paved surfaces shall be by wet spray power vacuum street sweeper. Dry power sweeping is prohibited.

#### Control of earthwork dust

During batch drop operation (i.e. earthwork with front-end loader, clamshell bucket, or backhoe) the free drop height of excavated or aggregate material shall be reduced as practical to minimize the generation of dust.

To prevent spills during transport, freeboard space shall be maintained between the material load and the top of the truck cargo bed rail.

#### Control of dust on stockpiles and inactive work areas

The contractor shall use the following methods to control dust and wind erosion of stockpiles and inactive areas of disturbed soil:

Wet suppression or dust suppression agents shall be used during active stockpile load-in, load-out, and maintenance activities.

Soil stabilizers shall be applied to the surface of inactive stockpiles and other inactive areas of disturbed soil. Final grading and seeding of inactive areas shall occur as soon as possible.

Plastic tarps may be used on small stockpiles, secured with sandbags or an equivalent method to prevent the cover from being dislodged by the wind. The contractor shall repair or replace the covers whenever damaged or dislodged at no additional cost.

#### Method of Measurement

The application of water for dust suppression will be measured in units of 1000 L applied, determined by use of tanks of known capacity or by satisfactory installed meters. All measuring devices shall be furnished by the contractor and approved by the Engineer.

Calcium chloride and other approved dust suppression agents shall be mixed with water at the rate specified by the manufacturer and measured for payment in units of 1000 L of solution applied.

The application of soil stabilizers shall be measured by weight (kilogram) of soil stabilizer added to water to form a solution in accordance with the manufacturer's recommendation.

Street sweeping by wet spray power vacuum street sweeper will be measured per hour and shall consist of actual time spent sweeping.

Construction of gravel pads or Grizzly A-Devices shall be measured on an each basis. Maintenance of these devices will not be measured or paid for separately.

All other dust control measures specified in this section will be considered as included in the cost of the various earthwork pay items and will not be measured for payment.

#### Basis of Payment

Water will be paid for at the contract unit price per unit for WATER (DUST CONTROL).

The application of dust suppression agents shall be paid for at the contract unit price per unit for APPLY DUST SUPPRESSION AGENTS.

Soil stabilizers will be paid for at the contract unit price per kilogram for SOIL STABILIZERS.

Street sweeping will be paid for at the contract unit price per hour for STREET SWEEPING.

Gravel pads and Grizzly A-Devices will be paid for at the contract unit price each for DUST CONTROL PADS.

### **COMPLIANCE WITH LOCAL LAWS, ORDINANCES AND REGULATIONS (CITY OF EAST PEORIA)**

Effective May 16, 2002

Revised June 6, 2002

This project is located within the City of East Peoria. The Contractor is advised to coordinate with the City of East Peoria to determine the requirements for the placement of trailers, material storage, staging areas, work areas outside the right-of-way.

The Contractor may contact the City of East Peoria Public Works Department, which is located at 2232 East Washington Street, East Peoria, IL to discuss the use of the areas located outside the right-of-way.

The storage or staging of any materials or equipment on the public right of way outside of the I-74 access control limits must be coordinated with the City of East Peoria. The Contractor shall contact Mr. Rick Jeremiah, Director of Public Works at 309-698-4716, prior to the start of any work involving staging/storage of equipment and/or materials in these areas.

### **OVERSIZED LOADS**

Effective May 17, 2002

Revised July 17, 2003

The Contractor is advised that the Department has restrictions on the movement of oversized loads at night and on weekends. The Contractor may be required to stage loads in the Peoria area during daylight hours. The Contractor may be required to use additional escort vehicles when transporting oversized loads from the staging area to the job site at night. The Contractor may contact Permits Unit at (217) 785-8967 regarding requirements for transporting oversized loads. No additional compensation will be considered because of these requirements.

### **EQUIPMENT OPERATIONS**

Effective July 10, 2002

The Contractor is advised that the Federal Aviation Administration (FAA) has guidelines related to the height of objects in the vicinity of airport runways. Due to the proximity of the Greater Peoria Airport, booms for cranes and similar equipment that are utilized on the project shall not exceed the maximum allowable heights stipulated by the FAA.

When performance of the work requires such equipment, the contractor shall comply with all applicable FAA requirements. The contractor shall submit completed [FAA Form 7460-1, "Notice of Proposed Construction or Alteration"](#) to the [Air Traffic Division of the FAA Regional Office](#) if the height of the equipment exceeds the limitations outlined in Title 14 of the Code of Federal Regulations CFR [Part 77](#)

For additional information and copies of Form 7460-1, the contractor may contact:

Federal Aviation Administration  
Great Lakes Regional Office  
Air Traffic Division, AGL-520  
2300 East Devon Avenue  
Des Plaines, IL 60018  
847-294-7568

Forms are also available on the FAA website: [www.faa.gov/ats/ata/ata400/oeaaa.html](http://www.faa.gov/ats/ata/ata400/oeaaa.html)

A listing of the documents which may be applicable is as follows:

- Title 14 of the Code of Federal Regulations CFR [Part 77](#)
- [FAA Form 7460-1, Notice of Proposed Construction or Alteration](#)
- [Instructions for completing the FAA Form 7460-1](#)

### **COORDINATION MEETINGS**

Effective April 19, 2002

Revised November 19, 2002

The Contractor will be required to participate in weekly coordination meetings with Department staff and other attendees deemed appropriate by the Department.

### **RIGHT OF WAY RESTRICTIONS**

Effective February 5, 2002

The Contractor will be required to secure and provide parking off the public right-of-way for worker's vehicles.

### **NOISE RESTRICTIONS (RESIDENTIAL ONLY)**

Effective January 31, 2002

Revised March 15, 2002

Special attention is called to Article 107.35 of the Standard Specifications. Several residences are located in close proximity to the work site. Construction will be permitted 24 hours a day. However, in no case will pavement breaking or pile driving be allowed between 10 P.M. and 6 A.M.

### **UTILITY REMOVAL**

Effective January 15, 2004

Certain abandoned utility facilities cannot be removed until the I-74 or ramp lanes have been closed to traffic. When the Contractor has removed the overburden of pavement and/or earth and encounters the abandoned utility facility, he/she shall notify the owner of the facility. The Owner of the facility has 48 hours to remove the abandoned facility during which time no claim will be considered due to delay.



The Owner of the abandoned facility may contract with the Contractor for the removal of the abandoned facility. If the Contractor and the Utility Owner contract for the removal of the abandoned facility, no claims will be considered because of delay due to the removal of the facility.

### **FORMAL PARTNERING**

Effective March 24, 2003

The Department desires to utilize a formal Partnering program with the Contractor for this project.

### **PROGRESS SCHEDULE**

Effective September 1, 2001

Description. This work shall consist of preparing, revising and updating a detailed progress schedule based upon the Critical Path Method (CPM). This work shall also consist of performing time impact analysis of the progress schedule based upon the various revisions and updates as they occur.

Requirements. The software shall be Primavera SureTrak 3.0 Project Manager, published by Primavera Systems, Inc.

Format. The schedule format shall contain the following:

- (a) Project Name: (Optional).
- (b) Template: Construction.
- (c) Type: SureTrak: Native file format for stand-alone contracts.
- (d) Planning Unit: Days (calendar/working).
- (e) Number/Version: Original or updated number.
- (f) Start Date: Not later than ten days after execution of the contract.
- (g) Must Finish Date: Completion date for completion date contracts.
- (h) Project Title: Contract number.
- (i) Company Name: Contractor's name.

### Calendars.

- (a) Completion Date Contracts. The base calendar shall show the proposed working days of the week and the proposed number of work hours per day.

(b) Working Days Contracts. The base calendar shall show the distribution of working days according to the following table:

MONTH	WORKING DAYS
MAY	15
JUNE	17
JULY	17
AUGUST	17
SEPTEMBER	16
OCTOBER	16
NOVEMBER	14

The number of days shown above shall not be exceeded. The proposed number of hours to be worked per day shall also be shown. No work shall be shown during the period of December 1 and April 30.

Schedule Development. The detailed schedule shall incorporate the entire contract time. The minimum number of activities shown on the schedule shall represent the work incorporating the pay items whose aggregate contract value constitutes 80 percent of the total contract value. These pay items shall be determined by starting with the pay item with the largest individual contract value and adding subsequent pay item contract values in descending order until 80 percent of the contract value has been attained. Any additional activities required to complete the contract beyond 95 percent and any additional activities required to maintain the continuity of the schedule logic shall also be shown.

The schedule shall be limited exclusively to Finish-to-Start (FS) relationships with no lead or lag duration between schedule activities. Start-to-Start (SS), Start-to-Finish (SF) or Finish-to-Finish (FF) relationships will not be allowed. Activity constraints shall not be used without the approval of the Engineer.

The following shall be depicted in the schedule for each activity:

- (a) Activity Identification (ID) Numbers. The Contractor shall utilize numerical designations to identify each activity. Numbering of activities shall be in increments of not less than ten digits.
- (b) A description of the work represented by the activity (maximum forty-five characters). The use of descriptions referring to a percentage of a multi-element item (i.e., construct deck 50%) shall not be used. Separate activities shall be included to represent different elements of multi-element items (i.e., forms, reinforcing, concrete, etc.). Multiple activities with the same work description shall include a location as part of the description.
- (c) Proposed activity duration shall be shown in whole days. The Contractor shall provide production rates to justify the activity duration. Schedule duration shall be contiguous and not interruptible.

The schedule shall indicate the sequence and interdependence of activities required for the prosecution of the work. The schedule logic shall not be violated.

Total Float shall be calculated as finish float. The schedule shall be calculated using retained logic. The Contractor shall not sequester float by calendar manipulation or extended duration. Float is not for the exclusive use or benefit of either the Department or the Contractor.

Tabular Reports.

- (a) The following tabular reports will be required with each schedule submission:
  - (1) Classic Gantt
  - (2) Pert with Time Scale
- (b) The heading of each tabular report shall include, but not be limited to, the project name, contract number, Contractor name, report date, data date, report title and page number.
- (c) Each of the tabular reports shall also contain the following minimum information for each activity.
  - (1) Activity ID
  - (2) Activity Description
  - (3) Original Duration (calendar day/working day)
  - (4) Remaining Duration (calendar day/working day)
  - (5) Activity Description
  - (6) Early Start Date
  - (7) Late Start Date
  - (8) Early Finish Date
  - (9) Late Finish Date
  - (10) Percent Complete
  - (11) Total Float
  - (12) Work performed by DBE Subcontractors and Trainees shall be shown in the Gantt Report.
- (d) Reports shall be printed in color on 8.5 in. x 14 in. (minimum) size sheets. The Classic Gantt shall show all columns, bars, column headings at the top, time scale at the top and shall show relationships.

Submission Requirements. The initial schedule shall be submitted prior to starting work but no later than five calendar days after execution of the contract. Updated schedules shall be submitted according to Article 108.02 except that as a minimum, updated schedules will be required at the 25, 50, and 75 percent completion points of the contract.

The schedule shall be submitted in the Sorted by Activity Layout (SORT4). The activities on the schedule shall be plotted using early start, late start, early finish, late finish and total float.

For every schedule submission, the Contractor shall submit to the Engineer, four IBM compatible compact disks of all schedule data. Included on the disks shall be all of the tabular and graphic reports, network diagrams and bar chart data. Two copies shall be submitted on CD/R disks and two copies shall be submitted on CD/RW disks. In addition, four plots of the schedule shall be submitted with the disks. When reviewed and approved by the Engineer, the CD/R disks will be the approved initial or revised progress schedule for the contract. The approval will be documented by the Engineer on a corresponding plot of the schedule and returned to the Contractor.

Four copies of each schedule submission shall be printed in color on 8.5 in. x 14 in. (minimum) size sheets showing all columns, bars, column headings at the top, time scale at the top and showing relationships.

The schedule shall indicate the critical path to contract completion. Only one controlling item shall be designated at any point in time on the schedule.

Basis of Payment. This work will not be paid for separately, but shall be considered as included in the cost of the various items of work in the contract.

## **PROSECUTION OF WORK**

Effective April 19, 2002

In order to assure the timely completion of the work involved in this project, it may be necessary for the Contractor to work extended work hours. Any expenses incurred by the Contractor in order to comply with this special provision will not be paid for separately, but shall be included in the contract price.

## **SIGN FACE**

Effective July 3, 2002

### Materials

Use of sign face materials shall conform with Section 1091 of the Standard Specifications except as follows:

On fully access-controlled sections of highway (freeways or expressways) all reflectorized signs, and supplemental panels, except green and yellow guide signs and blue general service signs shall be fabricated using faces of Type A or AP retroreflective sheeting. Green guide sign faces and blue general service sign faces shall be fabricated using Type A retroreflective sheeting.

Yellow guide sign faces shall be Type AA prismatic retroreflective sheeting.

All borders, legends, shields and such features on supplemental panels which may be attached to the green and yellow guide signs and blue general service signs shall be fabricated with Type AA prismatic retroreflective sheeting produced by the same manufacturer of the sign facing. This shall apply to the mainline, ramp, crossroad interchange approach directional signing, route markers, and all signs within the interchange.

Type A retroreflective sheeting shall be used on the face, border, and legend of new bridge-mounted street name signs.

All Type A retroreflective sheeting and Types AA and AP prismatic retroreflective sheeting shall be in accordance with IDOT material specifications T-14-01 and T-36-01, respectively.

### **REPLACEMENT OF UNSUITABLE MATERIAL**

Effective June 21, 2002

Revised August 22, 2002

Delete the third sentence of the last paragraph of Article 202.03 of the Standard Specifications and insert:

If unsuitable material is present at or below the finished grade on I-74 mainline and ramp PCC pavements, it shall be removed and replaced with Aggregate Subbase, according to the special provision entitled "Extended Life Pavement (30 Year)".

If unsuitable material is present at or below the finished grade on the roadways other than the I-74 mainline and ramp PCC pavements, it shall be removed and replaced with subbase granular material Type A or Type B, according to Section 311 of the Standard Specifications.

### **TRENCH BACKFILL, SPECIAL**

Effective January 1, 2002

Revised July 24, 2003

Description. This work shall consist of furnishing fine aggregate or controlled low-strength material (CLSM) at the contractor's option, except when CLSM is specified in the plans, for backfilling material for all trenches made in the subgrade of the proposed improvement and all trenches outside of the subgrade where the inner edge of the trench is closer than 600 mm (2 ft) to the edge of the proposed pavement, stabilized sub-base, shoulder, curb, or sidewalk.

This work also includes the disposal of the surplus excavated material which is replaced by the trench backfill. Such disposal shall be made according to Article 202.03.

When trench backfill is used, this work will be completed in accordance with Article 208 of the Standard Specifications, except it shall be measured and paid as specified herein.

When CLSM is used or specified, this work shall be completed in accordance with the following:

**Materials.** Materials shall be according to the following Articles of Section 1000 – Materials:

Item	Article/Section	
(a) Portland Cement, Type 1.....		1001
(b) Water .....		1002
(c) Fine Aggregate–FA 1 or 2 Sand (Note 1) .....	1003.01(a), 1003.01(c), 1003.04(b)	
(d) Fly Ash .....	1010.02, 1010.03	
(e) Admixtures (Note 2) .....	1021.01	

Note 1: Blending fine aggregate materials will not be permitted.

Note 2: The air-entraining admixture may be in powder form. Prior to approval, a CLSM air-entraining admixture shall be evaluated in a field or laboratory experimental pour. The Engineer will verify the experiment. The department will maintain an Approved Air-Entraining Admixtures for CLSM list.

**Equipment.** Equipment shall be according to the following Articles of Section 1100 – Equipment:

Item	Article/Section	
(a) Concrete Mixers .....		1103.01
(b) Batching and Weighing Equipment .....	1103.02, 1103.03	
(c) Mobile Portland Cement Concrete Plants .....	1103.04	
(d) Water Supply Equipment.....	1103.11	

**Proportioning.** When CLSM is used for trench backfill, the mix shall be District 4 Mix A or B and yield approximately one cubic meter (cubic yard).

	District 4 Mix A	District 4 Mix B
Portland Cement	56 kg (94 lb)	15 kg (25 lb)
Fly Ash – Class C or F	-	74 kg (125 lb)
Fine Aggregate – Saturated Surface Dry	1602 kg (2700 lb)	1483 kg (2500 lb)
Water	143 (29 gal)	143 (29 gal)
Air Content	15-25%	15-25%
Darafill or equivalent	1 pouch	1 pouch

**Mix Design.** A contractor may submit their own mix design and may propose alternate fine aggregate materials, fine aggregate gradations, or material proportions.

The mix design shall meet the following criteria.

**Mix Design Criteria**

Flow  $\geq$  178 mm (7 in.)

Air Content 0 – 25%

Dynamic Cone Penetrometer (DCP) at 3 days  $\leq$  39 mm/blow (1.5 in./blow)

Compressive Strength at 28 and 180 days  $\geq$  207 kPa (30 psi) to  $<$  1034 kPa (150 psi)

The mix design shall include the following information:

- (1) Source of materials.
- (2) Gradation of fine aggregate.
- (3) Absolute volumes, specific gravities, unit weights, and any other values used in the mix design process.
- (4) Type and proposed dosage of admixtures.
- (5) Target flow and air content.
- (6) Test data indicating compressive strength at 28 and 180 days.

If the Contractor submits a mix design, which has not been previously verified by the Department, a trial batch shall be required. The trial batch shall be scheduled a minimum of 30 calendar days prior to anticipated use, and shall be performed in the presence of the Engineer. A minimum of 0.75 cu m (1 cu yd) trial batch shall be produced and placed off site. The trial batch shall be produced with the equipment and methods intended for construction. The trial batch will be evaluated for temperature, flow, air content, DCP, and 28 day compressive strength by the Engineer.

Verification of the mix design will include the trial batch test results, field observations (i.e. flowability and solid suspension), and other criteria as determined by the Engineer. The Contractor will be notified in writing of verification. Verification of a mix design by the Engineer shall in no manner be construed as acceptance of any CLSM produced.

Test Methods. Sampling the freshly mixed flowable fill shall be performed according to Illinois Modified AASHTO T 141, except the elapsed time for obtaining the composite sample shall not exceed two minutes. The flow test shall start within five minutes of obtaining the composite sample. The molding of strength test specimens shall start within ten minutes of obtaining the composite sample.

The temperature test shall be according to Illinois Modified ASTM C 1064.

The flow test shall consist of filling a 76 mm (3 in.) inside diameter by 152 mm (6 in.) long plastic cylinder. The maximum variation from the normal inside diameter and length shall be 3 mm (1/8 in.). The plastic cylinder shall be smooth, rigid and open at both ends. The test method shall consist of placing the cylinder on a flat, level, firm surface which is free of vibration or other disturbances. The cylinder shall be firmly held in place and filled in one lift. The top of the cylinder shall be struck off to form a level surface while holding the cylinder in place. The cylinder shall be pulled straight up, and the approximate diameter of the mixture's spread shall be measured.

The air content test shall be according to Illinois Modified AASHTO T 121 or Illinois Modified AASHTO T 152, except the bowl shall be filled in one lift without vibration, rodding, or tapping.

The DCP test shall be according to the Department's test method. The compressive strength test shall be according to Illinois Modified AASHTO T 22, except neoprene caps shall be used for compressive testing. Strength is defined as the average of two or more cylinder breaks. The 152 mm x 305 mm (6 in. x 12 in.) cylinders shall be made according to Illinois Modified AASHTO T 23, except the cylinders shall be filled in one lift without vibration, rodding, or tapping. When bleed water appears at the top of the mold after a few minutes, the mold shall be

refilled. The curing method shall be modified by not removing the covered specimen from the mold until the time of testing. The cylinders shall be stored in a shaded area with a controlled temperature of 16 °C to 27 °C (60 °F to 80 °F).

Mixing and Mix Adjustments. The mix shall be produced according to Section 1020 of the Standard Specifications. Sufficient mixing capacity shall be provided to permit the placement without interruption. The mixer drum shall be emptied prior to initial batch to ensure that no additional cement fines are incorporated into the mix.

The Engineer reserves the right to adjust the proportion of materials in the field for flowability, to maintain solid suspension of the mix, and other criteria. No additional compensation will be paid to the Contractor for a mix adjustment.

### CONSTRUCTION REQUIREMENTS

Placement. The mix shall not be placed on frozen ground, in standing water, or during wet weather conditions. Mixing and placing shall begin only if the air temperature is 2 °C (35 °F) minimum and rising. At time of placement, the material temperature shall be 5 °C (40 °F) minimum. Mixing and placing shall stop when the air temperature is 5 °C (40 °F) and falling.

The mix shall be placed directly from the chute into the space to be filled. Other placement methods may be approved by the Engineer if the mix design is appropriate.

When backfilling against structures, the mix shall be placed in layers to prevent damage by lateral pressures. Side slopes shall be stepped or serrated to prevent wedging action of the backfill against the structure. Each layer shall be allowed to harden prior to placing the next layer.

When backfilling pipe culverts or storm sewers, the mix shall be distributed evenly on each side of the pipe to prevent movement. To prevent uplift of the pipe, the first layer shall stop at one-fourth the height of the pipe. After settlement of the first layer, as determined by the Engineer, the second layer shall stop at one-half the height of the pipe. After settlement of the second layer, as determined by the Engineer, the remainder of the trench shall be filled. A mix may be placed in a single layer for portland cement pipes.

The mix shall not be exposed to freezing temperatures or wet weather conditions during the first 24 hours after placement.

Applied Load. The mix may be subjected to loading upon approval by the Engineer, or when a penetration of 39 mm/blow or less has been obtained with the DCP test.

Method of Measurement. Regardless of whether trench backfill or CLSM is used, this work shall be measured in accordance with Article 208.03 of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price per cubic meter (cubic yard) for TRENCH BACKFILL, SPECIAL



## **GEOTECHNICAL FABRIC FOR GROUND STABILIZATION**

Effective March 1, 2002

The fabric shall be a woven geotextile fabric conforming to Article 1080.02 of the Standard Specifications.

## **SUB-BASE GRANULAR MATERIAL, TYPE A AND SUB-BASE GRANULAR MATERIAL, TYPE B**

Effective October 15, 2001

Revised June 10, 2002

This work shall consist of the construction of Sub-Base Granular Material, Type A or Sub-Base Granular Material, Type B of depths specified in the plans in accordance with applicable portions of Section 311 of the Standard Specifications with the following exception: The three-day drying period specified in Article 301.03(b) will be waived under the conditions outlined herein.

To avoid project delays due to wet subgrade, the Engineer will determine the depth of removal and replacement prior to excavation of the work area. In addition, the Contractor shall only excavate in one day the same area, which can be replaced with Sub-Base Granular Material, to finish grade, in the same day.

This work will be paid for at the contract unit price per metric ton for SUB-BASE GRANULAR MATERIAL, TYPE A or SUB-BASE GRANULAR MATERIAL, TYPE B for which the price shall be payment in full for all material, labor and equipment necessary to complete the work.

## **BITUMINOUS BASE COURSE AND BITUMINOUS BASE COURSE WIDENING**

Effective June 21, 2002

Delete Articles 355.11 and 356.07 of the Standard Specifications.

Revise Article 355.12 of the Standard Specifications to read:

Method of Measurement. Bituminous Base Course will be measured for payment in accordance with Article 406.23 of the Standard Specifications.

Revise Article 355.13 of the Standard Specifications to read:

Basis of Payment. This work will be paid for at the contract unit price per metric ton (ton) for BITUMINOUS BASE COURSE.

Revise Article 356.10 of the Standard Specifications to read:

Method of Measurement. Bituminous Base Course Widening will be measured for payment in accordance with Article 406.23 of the Standard Specifications.

Revise Article 356.11 of the Standard Specifications to read:

Basis of Payment. This work will be paid for at the contract unit price per metric ton (ton) for BITUMINOUS BASE COURSE WIDENING.

### **EXISTING BITUMINOUS MIXES CONTAINING STEEL SLAG**

Effective April 21, 2004

The Contractor is reminded to verify the existence of bituminous surface course mixes that may contain steel slag prior to removal and recycling. Much of the bituminous to be milled or otherwise removed within the project limits contains steel slag. The use of RAP containing steel slag shall be in accordance with the Standard Specifications and Special Provisions.

### **EXTENDED LIFE PAVEMENT (30 YEAR)**

Effective June 21, 2001      Revised February 4, 2003

The requirements of this special provision are only applicable to I-74 mainline and ramp Portland Cement Concrete pavements.

Description. This work shall consist of constructing an extended life Portland cement concrete pavement, shoulders, and gutter, curb, and median, according to Section 420 for Portland Cement Concrete Pavement (PCCP), Section 421 for Continuously Reinforced Portland Cement Concrete Pavement (CRCP), Section 483 for Portland Cement Concrete Shoulders, and Section 606 for Concrete Gutter, Curb, Median, and Paved Ditch, of the Standard Specifications for Road and Bridge Construction, except as follows:

#### Definitions.

Aggregate Subbase – The aggregate above the subgrade and below the aggregate subbase cap.

Aggregate Subbase Cap – The 75 mm (3 in.) of aggregate above the aggregate subbase and below the base.

Base – The Superpave IL-19.0L placed over the aggregate subbase cap and immediately below the pavement.

Materials. Materials shall be according to Article 420.02 for PCCP, 421.02 for CRCP, and 483.02 for PCC Shoulders, of the Standard Specifications except:

The freeze-thaw rating expansion limit for coarse aggregate shall be a maximum 0.040 percent according to Illinois Modified AASHTO T 161, Procedure B.

Equipment. Equipment shall be according to Article 420.03 for PCCP, 421.03 for CRCP, and 483.03 for PCC Shoulders, of the Standard Specifications, except:

The Contractor shall submit to the Engineer, for approval before paving, the proposed internal type vibrator spacing for the paver. The Contractor shall also provide the proposed operating frequencies for a paving speed greater than or equal to 0.9 m (3 ft.) per minute, and for a paving speed less than 0.9 m (3 ft.) per minute.

Base. The base shall be constructed according to Section 312 of the Standard Specification, except that the material used shall be Superpave IL-19.0L.

Embankment. The embankment shall be constructed according to Section 205 of the Standard Specifications, except that the embankment shall be compacted to not less than 95 percent of the maximum dry density determined according to AASHTO T 99. The embankment shall not be compacted at moisture content in excess of 110 percent of the optimum moisture content determined according to AASHTO T 99.

All material that is proposed for use in embankment construction must be approved by the Engineer. The proposed material shall have a Standard Dry Density of not less than 1450 kg/m<sup>3</sup> (90 lb./ft<sup>3</sup>) when tested according to AASHTO T 99 and shall not have an organic content greater than 10 percent when tested according to AASHTO T 194. Soils that demonstrate the following properties shall be restricted to the interior of the embankment:

- a. A grain size distribution with less than 35% passing the 75 µm (#200) sieve.
- b. A plasticity index (PI) of less than 12.
- c. A liquid limit (LL) in excess of 50.

Such soils shall be covered on the sides and top of the embankment by a minimum of 900 mm (3 ft.) of soil not characterized by any of the items a, b or c above. Other materials which may be considered by the Engineer as having the potential for erosion or excess volume change shall not be used in the 3 ft. (900 mm) cover on the sides or the top of the embankment.

Subgrade. The subgrade shall be constructed according to Section 301 of the Standard Specifications. The compaction moisture content in the upper 200 mm (8 in.) shall not exceed 110 percent of the soil optimum moisture content, obtained according to AASHTO T 99.

Aggregate Subbase. This work shall consist of furnishing, transporting, and placing Aggregate Subbase, Type C, as specified in Section 311 of the Standard Specifications, except:

The quality requirement in Article 1004.04(b) shall not apply.

The material shall be classified as Category III in the Aggregate Gradation Control System (AGCS), and shall meet the following gradation requirements:

1. Crushed Stone, Crushed Slag, and Crushed Concrete

<u>Sieve Size</u>	<u>Percent Passing</u>
200 mm (8 in.)	100
150 mm (6 in.)	97±3
100 mm (4 in.)	90±10
50 mm (2 in.)	45±25
75 µm (#200)	5±5

## 2. Crushed Gravel

<u>Sieve Size</u>	<u>Percent Passing</u>
150 mm (6 in.)	100
100 mm (4 in.)	90±10
50 mm (2 in.)	55±25
4.75 mm (#4)	30±20
75 µm (#200)	5±5

The aggregate subbase shall be well-graded from coarse to fine. Aggregate subbase that is gap-graded or single-sized will not be accepted.

The aggregate shall be placed to the thickness specified in one lift. When aggregate meeting the Aggregate Subbase requirements is used to replace unstable material, the Aggregate Subbase may be placed simultaneously with the material for subgrade replacement, when the total thickness to be placed is 600 mm (24 in.) or less. The Aggregate Subbase (and subgrade replacement material, if any) shall be rolled with a vibratory roller meeting the requirements of Article 1101.01 of the Standard Specifications to obtain the desired keying or interlock and compaction. The Engineer shall verify that adequate keying has been obtained.

Aggregate Subbase Cap. This work shall consist of furnishing, transporting, and placing an Aggregate Subbase, Type C, as a cap as specified in Section 311 of the Standard Specifications, except the material gradation shall be CA 6. The lift thickness shall be 75 mm (3 in.), nominal. Reclaimed Asphalt Pavement (RAP) meeting Article 1004.07 of the Standard Specifications and having 100% passing the 37.5mm (1-1/2inches) sieve and well graded down through the fines may also be used as capping aggregate. RAP shall not contain steel slag or other expansive material. The results of the Department's tests on the RAP material will be the determining factor for consideration as expansive.

Placing Concrete Pavement. Placement shall be according to Article 421.05 of the Standard Specifications except that, if the shoulder and mainline pavements are of different reinforcement designs, they shall not be placed in a single operation.

Concrete Mixture Temperature. Article 1020.14 of the Standard Specifications shall apply except that, prior to paving, the Contractor shall indicate to the Engineer how the concrete mixture temperature will be controlled. If the mixture temperature exceeds the value stated in Article 1020.14, production of additional mix shall stop until action to reduce mixture temperature is taken or conditions causing elevated temperatures change. The Engineer will allow the Contractor to deliver concrete mixture en route to the paving site.

Curing. Curing of the pavement shall be according to Article 1020.13 of the Standard Specifications, except:

Method 4 shall be completed within 10 minutes after tining.

The curing period shall be 7 days minimum.

Opening to Traffic. The pavement shall not be opened to public traffic or construction vehicles before the minimum curing period is completed.

Method of Measurement. The method of measurement for aggregate subbase shall be as follows:

- (a) Contract Quantities. Contract quantities shall be in accordance with Article 202.07(a).
- (b) Measured Quantities. Aggregate subbase will be measured for payment in metric tons (tons) according to Article 311.08 (b).

Basis of Payment. This work will be paid for at the contract unit price per metric ton (ton) for AGGREGATE SUBBASE, including the Aggregate Subbase Cap.

All other items will be measured and paid for according to the appropriate section of the Standard Specifications.

**WHITEWASHING BITUMINOUS CONCRETE BASE OR SUBBASE**

Effective October 1, 2001

Revised November 21, 2002

Description. This work shall consist of furnishing, preparing, and applying an aqueous solution of white pigment in a uniform coat to the top of the bituminous concrete base or subbase prior to placing the portland cement concrete (PCC) pavement reinforcement or load transfer devices. This work shall be according to the Standard Specifications for Road and Bridge Construction and as follows:

Materials. White pigmented materials shall meet the following requirements:

- Hydrated Lime..... 1012.01
- Calcium Carbonate Pigments ..... (Note 1)

Note 1. ASTM D-1199, Type GC or PC, Grade II or finer. Other materials or grades may be used with the approval of the Engineer provided the resulting coating is bright white and uniform in nature. By-product lime will not be allowed.

Equipment. Equipment shall be capable of mixing, continuously agitating, and applying the prepared solution in a uniform manner.

Construction Requirements. If the PCC pavement or shoulders will be placed between the dates of May 15 and October 15, the top of the bituminous concrete base or subbase shall be whitewashed. All milling, patching, overlaying, and cleaning shall be completed prior to whitewashing. No work shall be started if local conditions indicate that rain is imminent.

The whitewash mixture shall be prepared by mixing water and white pigment at a ratio of 2 parts water to 1 part pigment by weight until smooth in consistency and free of lumps. If sufficient coating can be demonstrated, the ratio may be increased up to 3 parts water to 1 part pigment by weight with the approval of the Engineer. After mixing, the mixture shall be continually agitated either mechanically or by continuously circulating the mixture until applied.

The mixture shall be applied in a uniform manner at a rate of 0.35 liters per square meter (0.075 gallons per square yard) to coat over 95 percent of the area with a thin, white film. If the coating is insufficient, additional material shall be applied. If sufficient application can be demonstrated at lower rates, they may be allowed with the approval of the Engineer. Application shall be by spraying, distributor truck, or water truck or other methods approved by the Engineer. All methods shall produce a uniform coating free of streaks and spills. If a truck is used to apply the mixture, a medium to long nap carpet, weighted sufficiently, shall be dragged behind the spray bar to ensure uniform application. The carpet shall be pre-wetted with the coating mixture slightly before application. Excessive materials shall not be applied. Thick films from spills or over-application shall be removed by broom or other means that does not damage the bituminous concrete base or subbase. Reapplication of whitewash may be required prior to placement of the reinforcing steel or load transfer devices as directed by the Engineer.

Once the whitewash mixture is placed, traffic shall be kept to a minimum on the bituminous concrete base or subbase. The whitewash shall be maintained until placement of the PCC pavement and shoulders.

Method of Measurement. Whitewashing the bituminous concrete base or subbase will be measured for payment in place and the area computed in square meters (square yards). The width for measurement will be the width of concrete pavement and shoulders to be placed. The length for measurement will be as shown on the plans or as directed by the Engineer. The white pigment and water for the whitewash mixture will not be measured for payment.

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

## **PAVEMENT REINFORCEMENT**

Effective June 7, 2002

Revised November 7, 2002

All tie bars, reinforcement, and chair supports in I-74 mainline and ramp pavements, shoulders, gutters and curb and gutter and bridge approach pavement shall be epoxy coated in accordance with Article 420.02 of the Standard Specifications.

For work outside the limits of bridge approach pavement on all roadways other than the I-74 mainline and ramps, all references to epoxy coating in the Highway Standards and Standard Specifications for reinforcement, tie bars and chair supports will not apply for pavement, shoulders, curb, gutter, combination curb and gutter and median.

## **WARRANTY FOR CONCRETE PAVEMENTS (BDE)**

Effective January 1, 2000

Revised September 4, 2003

### Description

This work shall consist of providing a warranty for concrete pavement constructed on the I-74 mainline and the I-74 ramps with the following pay items Portland Cement Concrete Pavement 250mm (Jointed); Continuously Reinforced Portland Cement Concrete Pavement 290mm; Pavement Reinforcement 290mm. The warranty will include the concrete pavement and joints

between the mainline pavement and adjacent structures, such as shoulders, curb and gutter, tapers, and ramps if the adjacent structures are like items. The pavement has been designed for a 30 year design life. Current traffic information is shown on the plans.

The Contractor warrants that all work completed under the above contract pay items, including all materials and workmanship furnished by the Contractor and subcontractors, shall comply with the contract, and that the work shall be free from defects or failures for a period of 5 years after commencement of the warranty period. The Contractor does not warrant the work against failures due to design defects (including unanticipated significant increases in traffic volume), due to the Department's routine maintenance operations, or due to the occurrence of acts of nature that the finished work was not designed to withstand.

The Contractor guarantees that after receipt of notice from the Department as provided herein, he/she shall perform the warranty work as specified in the notice in accordance with the warranty work actions specified herein including all necessary incidental work to complete the action and restore the complete facility, and damage to adjoining structures caused by failure of the warranted work, including but not limited to removal, engineering, material procurement, reinstallation, or replacement 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 in accordance herewith shall be secured by a performance and payment bond provided by the Contractor in a form furnished by the Department, and said bond to remain in full force and effect for the duration of the warranty 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 warranty requirements.

**Preventive Maintenance.** Any activity on the pavement surface to extend the pavement life or prevent the development of higher distress levels. This includes joint and crack sealing and bump grinding.

**Routine Maintenance.** Any activity to maintain the right-of-way which is not part of the pavement structure. This includes snow removal, de-icing, anti-icing, repairs to safety appurtenances, drainage structures, pavement markings and markers, mowing, and sign maintenance.

**Warranty Bond.** A bond that guarantees the concrete pavement installed under the contract, against defects in materials and/or workmanship or preventive maintenance needs which may develop after the Warranty Period Start Date for the specified warranty period. The warranty bond shall be in force continuously from the date of the first Warranty Period Start Date until release from the warranty on the last warranted section.

**Warranty Period.** A 5-year duration initiating on the Warranty Period Start Date.

**Warranty Period Start Date.** The date the Engineer approves the request for commencement of the warranty period will constitute the start date for the warranty period for the project or stage of construction.

**Warranty Work.** Corrective action taken to bring the concrete pavement into compliance for release of the warranty bond. If corrective action is required, the entire section or sections will be repaired.

**Working Days.** Any calendar day between May 1 and November 30 inclusive except Saturdays, Sundays, or legal holidays observed by the Contractor's entire workforce in Illinois.

#### Commencement of Warranty Period

Unless the Contractor requests warranty commencement as herein provided, the Warranty Period Start Date shall be the date of final inspection. The Contractor may request the warranty commence when the pavement or stage of construction is substantially completed. For the request to be approved, substantial completion means that all pavement lane markings (temporary or permanent), abutting shoulder and/or curb and gutter, and safety items such as guardrail must be installed, and the pavement is opened to continuous traffic. The date the Engineer approves the request is then the Warranty Period Start Date for the pavement or stage of construction.

Commencement of warranty does not relieve the Contractor of any remaining or contractual obligations. Approval of the Warranty Period Start Date shall not be construed as final acceptance of the work of the contract not subject to approval.

#### Warranty Bond

The Contractor shall furnish the Department a performance and payment bond with good and sufficient sureties in the full amount of \$ 534,000.00 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 closure periods used to remediate any warranted pavement distresses. If there are multiple Warranty Period Start Dates, the warranty bond shall be in effect from the Warranty Period Start Date on the first stage of construction until the release from the warranty period on the last stage.

The warranted concrete pavement will be measured according to specific parameters, as defined in the table entitled "Warranted Pavement Distresses." At the end of the warranty period and remedy of any distress occurring within the warranty period, the Contractor will be released, in writing, from further warranty work or responsibility under this contract, provided all previous warranty work under this contract has been completed and approved by the Department.

#### Warranty Requirements

The Department will notify the Contractor of the need for corrective action. The Contractor shall perform corrective action promptly as defined in the notification. The notification will provide for a requested start date for performance of corrective action covered by the notice, and for a



number of working days estimated to complete the corrective action. The Department and Contractor may agree upon a start date and reasonable period of performance to define prompt completion.

The Contractor shall provide the designated warranty work for each section for the extent and severity parameters in the following table. The distress parameters are defined in SHRP's "Distress Identification Manual for the Long-Term Pavement Performance Project" (SHRP-P-338).

**Warranted Pavement Distresses**

PARAMETER		EXTENT	SEVERITY	WARRANTY WORK
Cracking	Transverse	10 lin. ft.	Moderate	Patch <sup>1/</sup>
		Any within section	High	
	Longitudinal	10 lin. ft.	Moderate	Patch Full Length of Distressed Lane
		Any within section	High	
	Corner Breaks	Any within section	Moderate	Patch <sup>1/</sup>
		Any within section	High	
International Roughness Index (IRI)		Within section <sup>2/</sup>	Avg. 150 in./mi.	Pavement Grinding
Spalling	Longitudinal Joints, Transverse Joints & High Steel <sup>3/</sup>	10 lin. ft.	Moderate	Partial-Depth Patch 150% of Distressed Area using Polymer Concrete or Approved Equivalent
		Any within section	High	
Scaling		50 sq. ft.	All severity levels	Patch 150% Length and Full Width of Distressed Lane <sup>1/</sup>
Patch/Patch Deterioration		100 sq. ft.	Moderate	Patch <sup>1/</sup>
		Any within section	High	
Punchouts; in CRC pavement Only		Any within section	Moderate	Patch <sup>1/</sup>
		Any within section	High	

1/ Patching shall be full-lane width and full-depth according to Section 442. Class A patches shall be used for CRC pavement and Class B patches shall be used for jointed concrete pavement.

2/ IRI shall be measured in each wheelpath using ¼ car model then averaged for section.

3/ High Steel Spalling is defined as cracking, breaking, chipping, or fraying of the slab directly over reinforcing steel in Continuously Reinforced Concrete (CRC) pavement.

If the Contractor disputes the Department's request for corrective action and the Contractor and the Department are not able to resolve the matter between themselves, either party may seek resolution of the dispute by the Conflict Resolution Team (CRT). 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 a default, including but not limited to the cost and expense of any future warranty work required.

The Contractor may undertake preventive maintenance at his/her discretion. Preventive maintenance and warranty work shall be coordinated with the Department and performed at no cost to the Department. Prior to proceeding with any work, the Contractor shall obtain a permit from the Department. The Department may restrict the time of work according to the traffic needs of the facility.

Evaluation of the warranted concrete pavement will be in 0.10-mile (0.16-km) sections. Warranty work by the Contractor shall be approved by the Department and meet the same requirements of the original warranted pavement specified herein. Replacing any pavement shall be full-lane width to a depth not to exceed the warranted pavement. The warranty work is warranted for the remainder of the warranty period.

#### Rights and Responsibilities of the Department

The Department:

- a. Is responsible for notifying the Contractor, in writing, of any required warranty work.
- b. Reserves the right to approve the date(s) and time(s) requested by the Contractor to perform preventive maintenance and warranty work.
- c. Reserves the right to approve all materials and methods used in preventive maintenance and warranty work.
- d. Reserves the right to determine if warranty work performed by the Contractor meets the contract requirements.
- e. Reserves the right to perform, or have performed, routine maintenance during the warranty period. This routine maintenance will not relieve the Contractor from meeting the warranty requirement of this Special Provision.
- f. Reserves the right to perform or have performed, any emergency repairs deemed necessary by the Department. Any such emergency repairs undertaken will not relieve the Contractor from meeting the warranty requirements of this Special Provision. The Department shall document the emergency repair.

#### Rights and Responsibilities of the Contractor

The Contractor:

- a. Shall unconditionally warrant to the Department that the concrete pavement shall be free of defects in materials and workmanship as defined by the warranty

- requirements as set forth above, for a period of five years from the concrete pavement Warranty Period Start Date.
- b. Shall submit the Warranty Bond to the Department on a form furnished by the Department prior to the Warranty Period Start Date.
  - c. Is responsible for insuring that all warranty work described herein is performed. If warranty work or preventive maintenance performed by the Contractor necessitates a corrective action to restore pavement markings, adjacent lanes, roadway shoulders, etc., then such corrective action to those areas shall be the responsibility of the Contractor.
  - d. Shall retain all records for a period of 1 year beyond the end of the warranty period or completion of any warranted repairs, whichever is later.
  - e. Is responsible for replacing all temporary repairs, resulting from the concrete pavement being in non-compliance with the warranty requirements, with Department approved materials and methods.
  - f. Has the right to perform preventive maintenance. The Contractor shall submit a permit form and a written course of action proposing preventive maintenance. Approval of the Department must be obtained prior to the anticipated commencement of any preventive maintenance.
  - g. Shall submit a permit form and a written course of action proposing appropriate corrective measures for the needed warranty work. Approval by the Department must be obtained prior to the anticipated commencement of any warranty work.
  - h. Shall follow all traffic control and work zone safety requirements of the contract when any preventive maintenance or warranty work is performed.
  - i. Shall complete all warranty work and preventive maintenance in a neat and uniform manner and shall meet the requirements specified in the contract.
  - j. Is required to supply to the Department original documentation pursuant to Section 107 of the Standard Specifications in effect at the time this contract was awarded that all insurance required by the contract is in effect during the period(s) that any warranty work is being performed.
  - k. Is responsible for all costs of all repairs to the concrete pavement resulting from deficiencies in materials or workmanship.

#### Conflict Resolution Team

The responsibility of the Conflict Resolution Team (CRT) is to provide a decision on disputes between the Department and the Contractor regarding the pavement distress experienced, the extent and severity thereof, and the warranty work required to be performed in accordance with the warranty requirements. The CRT will also mediate disputes related to unanticipated significant increases in traffic. 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 qualified 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.

### Basis of Payment

This work will be paid for at the lump sum price for CONCRETE PAVEMENT WARRANTY. Payment will be made at the commencement of the warranty period, after the Warranty Bond form has been submitted. *(as a separate bid item)*

### **METRIC PAVEMENT DIMENSIONS**

Effective March 1, 2002

The Contractor shall construct all proposed pavements, shoulders and other appurtenances to the metric dimensions shown on the plans. English dimensions shown on the plans shall not be used for construction.

### **TYPE A FINAL FINISH OF PORTLAND CEMENT CONCRETE PAVEMENT WITH VARIABLY SPACED TINING**

Effective August 9, 2001

Revised December 18, 2003

Type A final finish on Portland Cement Concrete Pavement shall be in accordance with Article 420.11 (e)(1), except as modified herein.

“The 10 ft (3 m) metal comb shall consist of a single line of tempered spring steel tines variable spaced between 9/16 inch (14 mm) and 3-1/16 inches (78 mm) as shown in the table below, securely mounted in a suitable head. The tines shall be flat and have a size and stiffness sufficient to produce a groove of the specified dimensions in the plastic concrete without tearing of the pavement edge or surface. The Contractor shall modify the equipment or operations if an acceptable pavement or surface is not produced. The mechanically operated metal comb shall be attached to an exclusive piece of equipment, which is mechanically self-propelled and capable of traversing the entire pavement width being placed in a single pass. The artificial turf carpet drag may be attached to this piece of equipment provided a surface texture is produced satisfactory to the Engineer. The tining device shall be operated so as to produce a pattern of grooves at a 1:6 skew across the pavement, variably spaced between 9/16 inch (14 mm) and 2-1/8 inches (54 mm), 1/8 inch to 3/16 inch (3 to 5 mm) deep and 1/10 to 1/8 inch (2.5 to 3.2 mm) wide. No other operation will be permitted with this equipment. Separate passes will be required for the turf dragging operation and the tining operation.”

Metal Comb Tine Spacing (Metric, Center to Center of Tines, mm):

34	36	47	54	48	43	32	31	27	36	29	46
21	43	23	42	52	24	48	25	40	34	27	26
25	27	20	37	38	52	53	45	37	43	53	14
27	37	42	41	29	43	14	45	44	30	37	33
40	28	31	50	34	45	15	20	45	50	16	53
51	29	25	18	16	53	18	38	51	40	17	45
49	50	39	51	36	36	38	46	29	38	50	24
33											

Metal Comb Tine Spacing (English, Center to Center of Tines, In):

1-11/32"	1-13/32"	1-27/32"	2-1/8"	1-7/8"	1-11/16"	1-1/4"	1-7/32"	1-1/16"	1-13/32"	1-5/32"	1-13/16"
13/16"	1-11/16"	29/32"	1-21/32"	2-1/16"	15/16"	1-7/8"	31/32"	1-9/16"	1-11/32"	1-1/16"	1-1/32"
31/32"	1-1/16"	25/32"	1-15/32"	1-1/2"	2-1/16"	2-3/32"	1-25/32"	1-15/32"	1-11/16"	2-3/32"	9/16"
1-1/16"	1-15/32"	1-21/32"	1-5/8"	1-5/32"	1-11/16"	9/16"	1-25/32"	1-23/32"	1-3/16"	1-15/32"	1-5/16"
1-9/16"	1-3/32"	1-7/32"	1-31/32"	1-11/32"	1-25/32"	19/32"	25/32"	1-25/32"	1-31/32"	5/8"	2-3/32"
2"	1-5/32"	31/32"	23/32"	5/8"	2-3/32"	23/32"	1-1/2"	2"	1-9/16"	21/32"	1-25/32"
1-15/16"	1-31/32"	1-17/32"	2"	1-13/32"	1-13/32"	1-1/2"	1-13/16"	1-5/32"	1-1/2"	1-31/32"	15/16"
1-15/16"											

**BRIDGE APPROACH PAVEMENT (SPECIAL)**

Effective October 18, 2002

Revised October 31, 2003

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

Expansion joints shall be constructed in accordance with the requirements the special provisions entitled "Expansion Joints 75 mm" and/or "Expansion Joints 100 mm".

Bridge approach pavement (special) shall be measured in accordance with the requirements for bridge approach pavement given in Article 420.22 of the Standard Specifications.

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

The unit price bid for Bridge Approach Pavement (Special) shall include tie bars, polyethylene bond breaker, granular base, reinforcement bars, the concrete pad (including reinforcement and excavation), concrete median (including reinforcement), concrete parapets (including reinforcement), concrete median barrier (including reinforcement), concrete sidewalk (including reinforcement), and all other items necessary to complete this item of work.

**EXPANSION JOINT 75 MM (3")**

Effective September 8, 2003

Revised November 7, 2003

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

Expansion joints will be measured in place along the centerline of the joint including the adjacent curb, gutter, shoulder, solid median or median surface when the expansion joint continues through these features. Grass medians, concrete median barrier or the length of the concrete pad, when required, shall not be included in the measured length of the expansion joint.

This work will be paid at the contract unit price per meter (foot) for EXPANSION JOINT 75 MM (3").

When required, tie bars, preformed joint filler, polyethylene bond breaker, granular base, reinforcement bars, dowel bars, concrete pad (including reinforcement and excavation), and all other items necessary to complete this item of work shall be included in the unit price bid for Expansion Joint 75 mm (3").

**LONGITUDINAL CONSTRUCTION JOINTS**

Effective October 14, 2003

Contractors shall provide holes along longitudinal construction joints in proposed pavements, shoulders, concrete median barriers and related appurtenances for the installation of tie bars in accordance with Article 420.10 (b) of the Standard Specifications where adjacent work is to be constructed by others. The holes shall be temporarily plugged to the satisfaction of the Engineer.

Subsequent Contractors shall remove temporary plugs from holes along longitudinal construction joints in pavements, shoulders, concrete median barriers and related appurtenances constructed by others and furnish and install tie bars in accordance Article 420.10 (b) of the Standard Specifications.

This work will not be paid for separately, but shall be considered as included in the contract unit price bid for the pavement, shoulder, concrete median barrier and related appurtenances items.

**BRACED EXCAVATION**

Effective August 9, 1995

Revised December 3, 2002

Description. This work shall consist of furnishing, installing and removing all necessary sheeting and bracing members required to support the excavation according to the applicable requirements of Section 502 of the Standard Specifications. This item shall also include all excavation of earth necessary to obtain the bottom of footing elevations shown on the plans where braced excavation is indicated. The bracing shall properly support excavations by the use of sheeting, timber or plates etc., to prevent movement of soil, structures, pavements or utilities outside of the excavated area.

Construction Requirements. The Contractor shall submit design calculations and shop drawings prepared and sealed by an Illinois Licensed Structural Engineer for the temporary earth retention system. Shop drawings shall show the design and all necessary details for the construction of the bracing system. The design calculations and shop drawings shall be submitted to the Engineer for approval.

Approval of the Engineer shall be received before the Contractor proceeds with his construction operations. However, in any event, The Contractor shall be fully responsible for the safety, stability and adequacy of the bracing system and shall be solely responsible and liable for all damages resulting from his construction operations or from failure or inadequacy of the bracing system.

In the event the bracing system protecting the existing embankment fails or is otherwise inadequate, in the judgement of the Engineer, the Contractor shall, at his own expense, take all necessary steps to restore the embankments to a safe operating condition to the satisfaction of the Engineer.

Bracing members shall be installed as soon as an excavation level is reached to permit their installation.

Method of Measurement. This work shall be measured in cubic meters (cubic yards) according to the requirements for structure excavation as specified in Section 502.14 of the Standard Specifications.

Basis of Payment. This work, as herein specified and shown on the plans, will be paid for at the contract unit price per cubic meter (cubic yard) for BRACED EXCAVATION. Payment for BRACED EXCAVATION will be limited to those locations shown on the plans. All sheeting and bracing members associated with braced excavation will not be measured for payment but shall be included in the cost for BRACED EXCAVATION. No separate payment will be made for structure excavation where BRACED EXCAVATION is shown.

## **EXCAVATION FOR STRUCTURES**

Effective January 15, 2004

Structure Excavation shall be done in accordance with Section 502 of the Standard Specifications. Structure excavation shall include the removal of abandoned utility facilities within the limits of the Structure Excavation shown on the plans.

## **FORM LINER LIMESTONE SURFACE, FORM LINER GRID & FIN SURFACE, FORM LINER PARAPET SURFACE**

Effective February 5, 2002

Revised April 26, 2004

### Description of Work

This work shall consist of designing, developing, furnishing and installing form liners and forming concrete using form liners to achieve the various concrete treatments as shown in the drawings and specifications. Form lined surfaces shall include areas of retaining walls, abutments, piers, and parapets as shown in details in the plans. Work shall comply with Section 503 of the Standard Specifications and as specified herein.

### Fabricator Requirements

The following form liner manufacturers have been pre-approved to provide the listed pattern for the limestone surface form liner. Only the following manufacturers and patterns will be permitted to supply the limestone pattern form liners:

- a) Custom Rock International, St. Paul, MN. (Jim Rogers, 1-800-637-2447)  
Pattern No. 1118 - Form Liner Limestone Surface
- b) Increte Systems, Odessa, FL. (Irina Haas, 800-752-4626)  
Pattern No. 99999-S - Form Liner Limestone Surface

Manufacturers other than those listed above may provide the grid and fin and the parapet form liners. It should be noted that the grid and fin pattern detailed in the plans is not a stock pattern; the manufacturer will be required to produce a liner to the details shown in the plans. All manufacturers of form liners shall adhere to the provisions listed herein and in the plans.

### Shop Drawings

Shop drawings of the concrete facing patterns shall be submitted for each area of textured concrete. Shop drawing submittals shall include:

1. Individual form liner pattern descriptions, dimensions, and sequencing of form liner sections. Include details showing typical cross sections, joints, corners, step footings, stone relief, stone size, pitch/working line, mortar joint and bed depths, joint locations, end and edge treatments, and any other special conditions.
2. Elevation views of the form liner panel layouts for the limestone and grid and fin textures showing the full length and height of the structures including the footings with each form liner panel outlined. The arrangement of the form liner panels shall provide a continuous pattern without visual disruption.
3. The shop drawings shall depict a sufficient number of different, individual form sections and their proposed orientation and arrangement such that the proposed limestone wall's appearance will be free from a repetition of a distinguishable pattern.

To minimize the possibility of preparing an unsatisfactory Cast Concrete Mockup as described herein, the Contractor may elect to provide shop drawings for the Mockups.

### Materials

Form liners shall be of high quality, highly reusable and capable of withstanding anticipated concrete pour pressures without causing leakage or causing physical defects. Form liners shall attach easily to pour-in-place forms and be removable without causing concrete surface damage or weakness in the substrate. Liners used for the limestone and grid and fin textures shall be made from high-strength elastomeric urethane material which shall not compress more than 6mm when poured at a rate of 3 vertical meters per hour. Form release agents shall be non-staining, non-residual, non-reactive and shall not contribute to the degradation of the form liner material. Forms for smooth faced surfaces shall be plastic coated or metal to provide a smooth surface free of any impression or pattern.



If the contractor elects to use form ties for concrete forming, only fiberglass form ties will be permitted. Use of removable metallic form ties will not be allowed.

#### Cast Concrete Mockup

The Contractor shall provide a cast concrete mockup containing the limestone and grid and fin patterns and smooth form liner surface. The mockup shall be a minimum of 10 square meters in size. The mockup shall be constructed at or near the project location. The form liner manufacturer's technical representative shall be on-site for technical supervision during the installation and removal operations. The mockup shall include examples of each condition required for construction i.e. liner joints, construction joints, expansion joints, steps, corners, etc.

Upon receipt of comments from inspection of the mockup, adjustments or corrections shall be made to the molds where imperfections are found. If required, additional mockups shall be prepared when the initial mockup is found to be unsatisfactory.

#### Installation

Form liners shall be installed in accordance with the manufacturers' recommendations to achieve the highest quality concrete appearance possible. Form liners shall withstand concrete placement pressures without leakage causing physical or visual defects. A form release agent shall be applied to all surfaces of the liner which will come in contact with concrete as per the manufacturer's recommendations. After each use, liners shall be cleaned and made free of build-up prior to the next placement, and visually inspected for blemishes or tears. If necessary, the form liners shall be repaired in accordance with the manufacturer's recommendations. All form liner panels that will not perform as intended or are no longer repairable shall be replaced. An on-site inventory of each panel type shall be established based on the approved form liner shop drawings and anticipated useful life for each form liner type.

The liner shall be securely attached to the forms according to the manufacturer's recommendations. Liners shall be attached to each other with flush seams and seams filled as necessary to eliminate visible evidence in cast concrete. Liner butt joints shall be blended into the pattern so as to create no visible vertical or horizontal seams or conspicuous form butt joint marks. Liner joints must fall within pattern joints or reveals. Finished textures shall be continuous without visual disruption and properly aligned over adjacent and multiple liner panels. Continuous or single liner panels shall be used where liner joints may interrupt the intended pattern. Panel remnants shall not be pieced together.

The Contractor shall coordinate concrete pours to prevent visible differences between individual pours or batches. Concrete pours shall be continuous between construction or expansion joints. Cold joints shall not occur within continuous form liner pattern fields. Wall ties shall be coordinated with the liner and form to achieve the least visible result. Liners shall be stripped between 12 and 24 hours as recommended by the manufacturer. Curing methods shall be compatible with the desired aesthetic result. Use of curing compounds will not be allowed. Concrete slump requirements shall meet the form liner manufacturers' recommendations for optimizing the concrete finish.

The finish on all form lined surfaces is to be of the highest quality, architectural-grade finish, so that patching or rubbing of the finished surface shall not be needed. "Architectural-grade finish" is defined as follows: the finished surface shall be smooth and free of air holes and voids; the surface shall contain less than 2% (by area) of voids in any 1 square meter area; the maximum

allowable area of any void shall be 0.3 square centimeters; and the maximum depth of any void shall be 2mm. All form lined seams shall be tight in order to eliminate any visual evidence of the seam. Patching or rubbing of the finished surface is specifically prohibited as a means to meet the requirements of the architectural-grade finish. The Contractor shall employ consolidation methods to achieve the architectural-grade finish through the use of internal and external vibration methods or the use of self consolidating concrete (SCC), which is known to be capable of providing the specified finish.

Internal vibration shall be achieved with a vibrator of appropriate size, the highest frequency and low to moderate amplitude. Concrete placement shall be in lifts not to exceed 450mm. Internal vibrator operation shall be at appropriate intervals and depths and withdrawn slowly enough to assure the minimum amount of surface air voids and the best possible finish without causing segregation. Any use of external form vibrators must be approved by the form liner manufacturer. Any use of SCC shall be in accordance with the Special Provision "Self Consolidating Concrete" and shall be coordinated with the District's Bureau of Materials.

No additional compensation will be directly provided for any methods or materials used to achieve the architectural-grade finish, but shall be considered to be included in the unit prices of the associated pay items. Failure to meet any requirements of this Special Provision shall be cause for rejection and replacement of the structure.

#### Guidelines for Use of Form Liners to Achieve Desired Architectural Results

Form liners are being used on this project to achieve very specific architectural results. The Contractor shall not deviate from the guidelines contained herein unless authorized by the Engineer in writing. Following is a list of each project element containing a form lined surface and the intended application of each form liner type to be used.

Bridge Parapets – The vertical face(s) of bridge parapets shall be formed using smooth faced form liner material as shown on the plans.

Bridge Piers – The elliptical faces of bridge piers below the precast bollard shall be formed using smooth faced form liner material. The smooth surface shall extend from 300mm below proposed grade to the top of the pier.

Bridge Abutments – Grid and fin and limestone rustications shall be placed on bridge abutments as per the details shown in the plans. The proposed limestone wall's appearance shall be free from a repetition of a distinguishable pattern. The elliptical face of the abutment below precast bollards shall be formed using smooth faced form liner material as per the details shown in the plans.

Retaining Walls – Limestone and grid and fin rustications shall be placed on retaining walls as per the details shown in the plans. The proposed limestone wall's appearance shall be free from a repetition of a distinguishable pattern. Smooth faced border strips and crash surfaces shall be formed using smooth faced form liner material and placed as per the details shown in the plans. The vertical face(s) of retaining wall parapets shall be formed using smooth faced form liner material as specified on the plans.

#### Method of Measurement

This work shall be measured and paid for in place and the area computed in square meters of

actual concrete surface area formed with concrete form liners. The pay limits of form lined concrete surface shall be as follows. In computing the area for payment, no deductions will be made for omissions for access doors on vaulted abutments.

Bridge Parapets – The pay area shall be the actual measured area in square meters of the vertical face(s) of the bridge parapet with form lined surface.

Bridge Piers – The smooth form lined surface on the bollard area of bridge piers will not be measured for payment, but shall be considered included in the cost of CONCRETE STRUCTURES.

Bridge Abutments – The pay area for limestone form liners shall be the actual cast area of form lined surface measured in place in square meters. The pay area for grid and fin form liners on abutment faces shall be the actual cast area of grid and fin form lined surface plus the actual measured area of smooth faced form lined surfaces, measured in square meters.

Retaining Walls – The pay area for limestone surface shall be the actual cast area of limestone surface plus the actual area of any adjacent smooth form lined horizontal cap and crash barrier faces measured in square meters. The pay area for grid and fin surface shall be the actual cast area of grid and fin surface plus the actual area of any adjacent smooth form lined border strips and crash barrier faces measured in square meters. The pay area for parapet surface shall be the actual measured area in square meters of the vertical face(s) of the parapet with form lined surface.

Add "No deductions will be made for the volume of concrete displaced by limestone or grid and fin form lined surfaces." after the last sentence of the first paragraph of Article 503.21 (b) of the Standard Specifications.

Cast concrete form liner mockups will be measured for payment on an each basis. Required adjustments or corrections needed to address mockup comments and the cost of additional mockups, if required, will not be paid for separately, but shall be included in the contract unit price each for this item.

#### Basis of Payment

Smooth form lined surfaces on the parapets will be paid for at the contract unit price per square meter for FORM LINER PARAPET SURFACE. Limestone form lined surfaces and adjacent smooth form lined horizontal cap and smooth formed crash barrier surfaces will be paid for at the contract unit price per square meter for FORM LINER LIMESTONE SURFACE. Grid and fin form lined surfaces and adjacent smooth form lined border, crash barrier, and bollard surfaces will be paid for at the contract unit price per square meter for FORM LINER GRID AND FIN SURFACE. For all form lined surfaces, the unit price bid shall include all design, material, hardware, labor, delivery, storage, installation, and use of limestone, grid and fin, and parapet patterns as specified in this special provision.

Cast concrete form liner mockups will be paid for at the contract unit price each for FORM LINER MOCKUP. The unit price bid shall include all labor and material costs associated with forming, pouring, and disposal of a satisfactory cast concrete mockup panel to the requirements included herein.

## **INSTALL BOLLARD AND LUMINAIRES**

Effective February 5, 2002

Revised October 30, 2003

### **1. Description**

This work shall consist of receiving, assembling, and installing all precast concrete Bollards and Bollard Luminaires as shown on the plans. The work includes but is not limited to required submittals, unloading, storing, placing, aligning, drilling, grouting, fastening, and all other miscellaneous work required for complete installation. The work shall also consist of furnishing and installing silicone joint sealer, and furnishing, transporting, and installing flexible metallic conduit and setscrew connectors. Included in this item is coordination with the Bollard and Bollard Luminaire Fabricator for delivery and installation requirements. All work shall conform to the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2002 and as specified herein.

#### General

##### **1.1 Related Documents**

- (a) Drawings and general provisions of the Contract.

##### **1.2 Definitions**

- (a) Fabricator: Fabricator (supplier) of Bollard and Bollard Luminaire.
- (b) Contractor: The general contractor(s) awarded a highway construction contract, includes responsibility for Bollard and Bollard Luminaire installation.
- (c) Engineer: IDOT's designated representative.
- (d) Bollard: Disengaged or Engaged Bollard including Bollard Base and steel connection assembly.
- (e) Engaged: Bollard location requiring an interruption of the concrete parapet.
- (f) Disengaged: Bollard location outside the limits of the concrete deck.
- (g) Unit: Precast concrete unit: Engaged Bollard, Disengaged Bollard or Bollard Base.
- (h) Bollard Luminaire: Metal luminaire to be installed atop each precast bollard. Includes all electrical components required for complete, fully functional luminaire.

##### **1.3 Work Under Separate Contract**

Bollard and Bollard Luminaire fabrication and delivery will be conducted by others.

##### **1.4 Performance Requirements**

- (a) Bollards and Bollard Luminaires shall be installed per Fabricator's design and instruction, capable of withstanding design loads within limits and under conditions indicated.
  - (1) Refer to drawings and general notes for load requirements.
  - (2) Refer to Fabricator's approved Shop Drawings to be provided by Engineer.
- (b) Bollards and Bollard Luminaires shall be installed, as shown in the plans, in alignment with the pier or abutment below. Bollards shall be installed true, plumb and in correct alignment with respect to the bridge parapet. Bollard Luminaires shall be installed in correct alignment with respect to the Bollard below.
- (c) Performance Submittals
  - (1) Product Data: Submit product data for each type of product indicated:
    - (i) Silicone Joint Sealer
    - (ii) Grout and Grouting materials

### **2. Materials**

- 2.1 Grout Materials:** Provide grout materials that meet the specifications as noted below:

- (a) Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, plasticizing and water-reducing agents, complying with ASTM C 1107, of consistency suitable for application.
  - (b) Epoxy Grout: The contractor shall use a sealed glass capsule or a sealed glass adhesive cartridge that has been previously tested and given prior approval by the Department, containing premeasured amounts of the adhesive chemical.
- 2.2** Silicone Joint Sealer shall conform to the requirements of Special Provision entitled "Silicone Joint Sealer At Bollards".
- 2.3** Liquid-tight flexible metallic conduit shall conform to the requirements of SECTION 1088.01 in the Standard Specifications.
- 3. Shop Drawings**
- 3.1** These drawings shall include the following:
- (a) Detail installation of Bollards and Bollard Luminaires including plans, elevations, dimensions, as all necessary information to fully describe the installation.
  - (b) Sequence of installation operation.
  - (c) Lifting methods and devices.
  - (d) Locations and details of anchorage devices to be embedded in other construction.
- 3.2** Obtain copy of Fabricator's, final, approved Shop Drawings and include with Shop Drawing submittal.
- 4. Quality Assurance/Quality Control**
- 4.1** The Contractor will be held responsible for any damage to the units and bollard luminaires during the Contractor handling and installation. The Contractor shall comply with the applicable guidelines of the most recent State of Illinois Department of Transportation, Bureau of Materials and Physical Research, Springfield, POLICY MEMORANDUM: QUALITY CONTROL/QUALITY ASSURANCE PROGRAM FOR PRECAST CONCRETE PRODUCTS.
- (a) Cracks or Fractures. These are considered cause for rejection if they pass through the unit. A single end crack that does not extend into the unit is not a cause for rejection. Any crack having a surface width of 0.25 mm or more and more than 0.3 m in length, regardless of position in the unit, is considered cause for rejection.
  - (b) Chipped or Damaged Ends: This is considered cause for rejection if the damage is 25 mm or more into an edge and has a length of more than 10 percent of the end circumference or perimeter. Small chips may be properly patched and accepted, subject to approval by the Engineer.
- 4.2** Coordination:
- (a) Other items to be attached to the bollards include:
    - (1) Bollard Luminaire. Coordinate with installation information to assure proper compatibility and sequencing between all interconnecting components.
- 5. Delivery, Storage, and Handling**
- 5.1** The Contractor shall supply the Engineer with a delivery schedule for each Bollard and Bollard Luminaire within 6 weeks of contract award. The contractor shall supply the delivery schedule to the Fabricator upon approval. It shall be the responsibility of the contractor to coordinate delivery with the Fabricator.

- (a) Delivery should be coordinated as to minimize handling and on-site storage requirements. If required, storage at the project site shall be provided by the Contractor.
- (b) A minimum of 4 Bollards per delivery is required.
- (c) Bollards and Bollard Luminaires shall be stored in such a manner as to prevent staining, discoloration, or other damage.
- (d) Obtain Fabricator's recommendations for the handling of Bollards and Bollard Luminaires. Lift and support only at designated lifting and supporting points as shown on the Fabricator's approved Shop Drawings.
- (e) Inspection and Acceptance: The Contractor shall examine and document the condition of the Bollards and Bollard Luminaires, in the presence of the Engineer, before accepting delivery. The Contractor shall be held responsible for any repairs or replacements required due to any change in condition caused by site handling, storage and installation.

**6. Installation**

**6.1** Examine substrates and conditions for compliance with requirements for installation tolerances, true and level bearing surfaces, and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

**6.2** Install precast concrete Bollard Assemblies:

- (a) Establish and verify proper alignment and positioning of anchorage devices to ensure accurate installation of Bollards.
- (b) Provide temporary supports and bracing as required to maintain position, stability, and alignment as units are being permanently connected.
- (c) Anchor precast concrete units in position by bolting, welding, grouting, or as otherwise indicated. Remove temporary shims, wedges, and spacers as soon as possible after anchoring and grouting are completed.
- (d) Protect precast concrete units and adjacent construction from damage by installation operations and provide noncombustible shields as required.
- (e) Repair damaged metal surfaces by cleaning and applying a coat of zinc rich, galvanized repair paint to galvanized surfaces.
- (f) Grouting Connections and Joints: After precast concrete units and flexible metallic conduit have been placed and secured, grout open spaces at connections, and joints as follows:
  - (1) Joints shall be grouted using nonmetallic, nonshrink grout as follows: Provide forms or other approved method to retain grout in place until hard enough to support itself. Pack spaces with stiff grout material, tamping until voids are completely filled. Place grout to finish smooth, level, and plumb with adjacent concrete surfaces. Keep grouted joints damp for not less than 24 hours after initial set. Promptly remove grout material from exposed surfaces before it hardens. Exposed grout surfaces shall be finished to match adjacent surface of precast concrete.
  - (2) Anchor rods shall be grouted using a sealed glass capsule or a sealed glass adhesive cartridge according to the manufacturer's recommendations and procedures.

**6.3** Install Bollard Luminaire: Provide complete installation of Bollard Luminaires to make a safe, complete and fully operative installation.

- (a) Protect precast Bollard units from damage or staining, due to Bollard Luminaire installation operations.

- (b) Install all components and accessories furnished with each luminaire including all electrical components, wiring and lamps. Permanent wiring and connections to the final mainline circuits will be performed by the Contractor(s) whose contract includes the mainline circuitry.
- (c) Verify proper alignment and positioning with Bollard below and anchor Bollard Luminaire in position as indicated. Remove temporary shims, wedges, and spacers as soon as possible after anchoring is completed.
- (d) Test each luminaire for proper connection and operation using a mobile generator. Inspect each installed fixture for damage and replace damaged fixtures, components and surfaces.

**7. Repairs and Cleaning**

- 7.1** Repair as necessary exposed exterior surfaces of Bollards and Bollard Luminaires to match color, texture, and uniformity of surrounding material as subject to approval by Engineer.
- 7.2** Cracks shall be repaired according to the provisions of Article 590 of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2002 with the following exceptions:
  - (a) The concrete surface should not be drilled for grout injection.
  - (b) The concrete surface should not be chipped. Loose materials and dirt should be removed before grouting in such a way that will leave the least noticeable repair.
- 7.3** Chipped or damaged ends shall be repaired using an approved commercial patch mix or grout applied as recommended by the manufacturer.
- 7.4** All repairs are subject to approval by the Engineer. Remove and replace damaged Bollards and Bollard Luminaires if repairs do not comply with requirements.
- 7.5** Clean exposed surfaces of Bollards and Bollard Luminaires after installation to remove weld marks, other markings, dirt, stains, etc.
  - (a) Wash and rinse according to Fabricator's written recommendations. Protect other work from staining or damage due to cleaning operations.
  - (b) Do not use cleaning materials or processes that could change the appearance of exposed finishes.

**8. Basis of Payment**

This work will be paid for at the contract unit price per each for INSTALL BOLLARD AND LUMINAIRES, which price shall include all material, hardware, storage, and labor required for complete installation of Bollards, Silicone Joint Sealer, Flexible Metallic Conduit and Setscrew Connectors, and Bollard Luminaires as specified herein.

**SILICONE JOINT SEALER AT BOLLARDS**

Effective October 30, 2003

Revised May 6, 2004

Description. This work shall consist of furnishing all labor, equipment, technical assistance and materials necessary to install the silicone joint sealer between the bollards and the bridge as shown on the plans and as specified herein.

Materials:

- (a) Silicone Joint Sealer. The silicone joint sealer shall be rapid cure, self-leveling, cold applied, two component silicone sealant. The sealant, upon curing, shall demonstrate resilience, flexibility and resistance to moisture and puncture. The sealant shall also

demonstrate excellent adhesion to portland cement concrete, polymer concrete and steel over a range of temperatures from -34 to 54°C (-30 to 130°F) while maintaining a watertight seal. The sealant shall not contain any solvents or diluents that cause shrinkage or expansion during curing. Acid cure sealants are not acceptable. The date of manufacture shall be provided with each lot. Materials twelve months old or older from the date of manufacture will not be accepted.

The manufacturer shall certify that the sealant meets or exceeds the following test requirements before installation begins. The Department reserves the right to test representative samples from material proposed for use.

Physical Properties:

Each component as supplied:

Specific Gravity (ASTM D1475)	1.3-1.4
Extrusion Rate (MIL-5-8802)	200 - 550 grams per minute
Flow	Self-leveling
Durometer Hardness, Shore (ASTM D 2240) "00" (0° and 25°C ± 1°C (32°F and 77±3°F.))	40-80
Ozone and U.V. (ASTM C 793) Resistance	No chalking, cracking or bond loss after 5,000 hours.

After Mixing:

Tack Free Time (ASTM C679)	60 minutes max.
Joint Cure Rate (% of total cure)	50% within 4 - 6 hours 75% within 24 hours 100% within 48 - 160 hours

Upon Complete Cure: (ASTM D-3569<sup>1</sup>)

Joint Elongation (adhesion to concrete/steel/polymer concrete)	600% min
Joint Modulus	21-83 kPa (3-12 psi) @ 100% elongation

<sup>1</sup>Modified; Sample cured 2 days at 25±1°C (77±2°F) 50±5% relative humidity

- (b) Backer Rod. The backer rod shall conform to ASTM D5249, Type 3 and shall be gray in color.

**CONSTRUCTION REQUIREMENTS**

General. Technical assistance provided by the manufacturer during surface preparation and installation shall be furnished at no additional cost to the Department. The Contractor shall furnish the Engineer with the manufacturer's written product information, installation procedures, and instructional video at least two weeks prior to installation. The Contractor, the manufacturer's representative, and the Engineer shall meet to review and clarify installation procedures, and requirements prior to starting the work. A technical representative must be present for the start of surface preparations and installation for at



least one day. The Contractor shall contact the manufacturer at least two weeks prior to installation.

When placing the silicone against concrete, the concrete surface shall be dry. For newly placed concrete, the concrete shall be fully cured and allowed to dry out a minimum of 7 additional days prior to placement of the silicone. Cold, wet, inclement weather will require an extended drying time.

(a) Surface Preparation:

- (1) Sandblasting. Both faces of the joint shall be sandblasted. A separate pass for each face for the full length of the joint and to the design depth of the center of the backer rod will be required. The nozzle shall be held at an angle of 30-90 degrees to the joint face, at a distance of 25-50 mm (1 - 2 in.).

For portland cement concrete and polymer concrete surfaces, sandblasting will be considered acceptable when both joint faces have a roughened surface with clean, exposed aggregate. The surface shall be free of foreign matter or plastic residue.

For steel surfaces, sandblasting will be considered acceptable when the steel surfaces have been cleaned to an SSPC-SP10 degree of cleanliness.

After sandblasting is completed, the joint shall be cleaned of debris using compressed air with a minimum pressure of 620 kPa (90 psi). The air compressor shall be equipped with traps to prevent the inclusion of water and/or oil in the air line.

- (2) Priming. This operation will immediately follow sandblasting and cleaning and will only be permitted to proceed with the air and substrate temperatures are at least 5°C (41°F) and rising. Sandblasting, priming and sealing must be performed on the same day. The entire sandblasted surface shall be primed using a brush applied primer. The primer shall be allowed to dry a minimum of one hour or more until it is thoroughly dry, whichever is longer, before proceeding. For steel surfaces, the minimum drying time shall be extended to 90 minutes when the substrate temperature is below 15°C (60°F).

For portland cement concrete and polymer concrete, the primer shall be in according to the manufacturer's recommendations. For steel surfaces, the primer shall be a rust inhibiting primer recommended by the sealant manufacturer.

The primer shall be supplied in original containers and shall have a "use-by" date clearly marked on them. Only primer, freshly poured from the original container into clean pails will be permitted. The primer must be used immediately. All primer left in the pail after priming shall be disposed of and shall not be reused.

(b) Joint Installation:

- (1) Backer Rod Placement. The backer rod shall be installed to a uniform depth as specified on the plans and as recommended by the manufacturer. All splices in the

backer rod shall be taped to prevent material loss during sealing. The backer rod shall be installed to within 3 mm (1/8 in.) tolerance prior to sealing.

- (2) Sealant Placement. The thickness above the center of the backer rod shall be one-half of the bonding surface thickness. Sealant placement will only be permitted when the air and substrate temperatures are above 5°C (41°F) and 2.8°C (5°F) above the dew point. The joint must be kept clean and dry during sealing. If the joint becomes wet and/or dirty during sealing, the operation will be halted until the joint has been restored to a clean and dry state.

Sealing shall be performed using a pneumatic gun approved by the sealant manufacturer. Prior to sealing, the gun shall be inspected to insure that it is in proper working order and that it is being operated at the recommended air pressure.

The gun must demonstrate proper mixing action before sealant will be allowed into the joint. Unmixed sealant will not be permitted in the joint. All unmixed sealant found in the joint will be removed and replaced at the Contractors expense.

After the Engineer has determined that the pneumatic gun is functioning properly, the joint shall be sealed to the thickness and depth as shown on the plans. The sealant must be allowed to achieve initial set before opening the joint to traffic.

End of seal treatment at vertical faces of curbs, sidewalks or parapets shall be as recommended by the manufacturer and as shown on the plans.

Sealant placed incorrectly shall be removed and replaced by the Contractor at no additional cost to the Department.

- (3) Field Testing. A minimum of one joint per bridge per joint configuration will be tested by the Engineer by performing a Pull Test. The sealant shall be allowed to cure for a minimum of 24 hours before testing. The locations for the tests will be determined by the Engineer. The tests will be performed per the manufacture's written instructions. As part of the test, the depth and thickness of the sealant will be verified. All joint system installations failing to meet the specifications shall be removed and replaced, by the Contractor, to the satisfaction of the Engineer at no additional cost to the Department. In addition, the "Pull Test" is a destructive test, the Contractor shall repair the joint after completion of the test per the manufacturer's written instructions at no additional cost to the Department.

Basis of Payment. The silicone joint sealer will not be paid for separately, but shall be considered as included in the cost of Install Bollard and Luminaires

## **SURFACE PREPARATION AND PAINTING OF GALVANIZED STEEL TRAFFIC STRUCTURES**

Effective: July 3, 2002

Revised: May 4, 2004

Surface Preparation. Galvanized steel surfaces to be painted (the exterior surfaces of all members and any other surfaces so indicted in the plans or specification) shall be clean and

free of oil, grease, and other foreign substances. Surface preparation shall include, but not be limited to the following:

- Absolutely no water quenching or chromate conversion coating is allowed of the galvanized surface that is to be painted, as they will interfere with the adhesion of the paint coatings to the zinc surface.
- Surface preparation necessary to provide adequate adhesion of the coating shall be performed according to ASTM D 6386.
- Zinc high spots shall be removed by cleaning with hand or power tools as described in SSPC-SP2 or SP3. The zinc should be removed until it is level with the surrounding area, taking care that the base coating is not removed by the cleaning methods. After cleaning, the surface shall be inspected for conformance to the required zinc thickness in accordance with ASTM A 123 utilizing a magnetic or eddy current type thickness instrument in accordance with ASTM E 376. Any item falling below the required zinc thickness, before or after removal of any high spots, shall be repaired in accordance with practice ASTM A 780.
- All galvanized steel surfaces that are to be painted shall be checked for the presence of chromate conversion coating according to ASTM D 6386 Appendix X1. Surfaces where chromate conversion coating is found shall be cleaned according to the same appendix and blown down with clean, compressed air according to ASTM D 6386 Section 6.1.
- All galvanized steel surfaces that are to be painted shall be checked for the presence of wet storage stain. Surfaces where wet storage stain is found shall be cleaned, rinsed and completely dried according to ASTM D 6386 Section 6.2.
- All galvanized steel surfaces that are to be painted shall be cleaned according to SSPC-SP1 (Solvent Cleaning) with a non-hydrocarbon cleaner. After cleaning, all chemicals shall be thoroughly rinsed from the surface with a suitable solvent. The steel shall be allowed to completely dry prior to coating application.
- Following cleaning as outlined above, all galvanized steel surfaces that are to be painted shall be prepared according to SSPC-SP7 (abrasive sweep or brush blasting). Particle size should be in the 8 mils to 20 mils (200  $\mu$ m to 500  $\mu$ m) range. Materials that can be used are aluminum/magnesium silicate, soft mineral sands with a Mohs hardness of 5 or less, corundum, limestone, and organic media such as corncobs or walnut shells. The purpose of the sweep blasting is to deform not to remove the galvanized metal. Any area falling below the required zinc thickness, before or after the sweep blasting, shall be repaired in accordance with ASTM A 780. Sweep blasting of zinc shall not be less than 110 square meters per hour using these types of abrasives. Substrate shall be maintained at a temperature greater than 5 degrees Celsius above the dew point temperature. After brush blasting, surfaces shall be blown down with clean, compressed air. The formation of zinc oxide on the blasted surface will begin very quickly; consequently the paint coating should be applied immediately, within 60 minutes, after brush blasting.
- Following cleaning and surface preparation, thickness readings shall verify the acceptable thickness of the galvanizing according to AASHTO M 111/ASTM A 123.

Shop Conditions. The surfaces to be painted after surface preparation shall remain free of moisture and other contaminants. The Contractor shall control the operations to insure that dust, dirt, or moisture does not come in contact with surfaces prepared or painted that day. In addition to the manufacturer's written instructions for surface preparation and painting, the following conditions shall apply (when in conflict, the most restrictive conditions shall govern):

The minimum steel and air temperatures shall be 10° C (50° F). The maximum steel and air temperatures shall be 37° C (100° F) and 32° C (90° F) respectively. Painting shall not be applied to steel that is at a temperature that will cause blistering, porosity, or be otherwise detrimental to the life of the painted surfaces. Painting shall not be applied when the steel surface temperature is less than 3° C (5° F) above the dew point. Painting shall not be applied to wet, damp, or frosted surfaces.

Paint shall not be applied when the relative humidity is above 85%. Work accomplished under unfavorable weather conditions shall be considered unacceptable and complete re-cleaning and painting of these areas shall be required at no additional cost to the Department.

Paint Requirements. The areas of galvanized steel to be painted shall receive one primer coat, one finish coat and a second clear finish coat with the dry film thickness (DFT) of each coat measured according to SSPC-PA2 and conforming to the following:

- prime coat having a DFT such as the following or an approved equal:
  - Carboguard 888, polyamide epoxy primer (3 - 5 mils) – Carboline Company (Herman Rodriguez 847-289-3767)
  - ZRU Primer, moisture cured zinc rich urethane (2 - 5 mils) – Freda Inc. (Richard Milheim 800-348-4621)
  - KL3200, Kolor-Poxy Red, polyamide epoxy primer (3 - 5 mils) – PPG/Keeler & Long (Wayne Bell Jr. 724-272-5040)
  - Macropoxy 646, polyamide epoxy primer, (4 - 6 mils) – Sherwin-Williams (Vince Thomas 312-371-0709)
- semi gloss finish coat matching Munsell Color N1 Black and having a DFT such as the following or an approved equal:
  - Carbothane 133 HB (satin), aliphatic acrylic-polyester polyurethane (3 - 5 mils) – Carboline
  - I2 Topcoat (semi gloss), aliphatic polyurethane (2.5 - 5 mils) – Freda Inc.
  - KLN2-Series (semi gloss), neothane hi-solids urethane (2.5 - 5 mils) – PPG/Keeler & Long
  - Acrolon 218HS (semi gloss), polyester mod acrylic polyurethane (3 - 5 mils) – Sherwin-Williams
- clear, semi gloss second finish coat having a DFT such as the following or an approved equal:
  - Carbothane Clear Coat (satin), aliphatic acrylic polyurethane (1 - 2 mils) – Carboline
  - I2 Topcoat (semi gloss), aliphatic polyurethane (1.5 - 5 mils) – Freda Inc
  - KLN25227 (semi gloss), neothane hi-solids urethane (2.5 - 5 mils) – PPG/Keeler & Long
  - Diamond-Clad Clear (SGB65T115 Series), waterbased acrylic polyurethane (1 - 2 mils) – Sherwin-Williams

As an alternative to the paint system outlined above, the areas of galvanized steel to be painted shall receive one coat of a polyamide epoxy primer and one finish coat with the dry film thickness (DFT) of each coat measured according to SSPC-PA2 and conforming to the following:

- prime coat having a DFT such as the following or an approved equal:
  - Carboguard 888, polyamide epoxy primer (3 - 5 mils) – Carboline Company
  - Corafalon ADS High Build Epoxy, polyamide epoxy (2.5 - 6 mils) – PPG/Keeler & Long
  - Macropoxy 646, polyamide epoxy primer (4 - 6 mils) – Sherwin-Williams
  
- finish coat matching Munsell Color N1 Black and having a DFT such as the following or an approved equal:
  - Carboxane 2000 (gloss), modified siloxane hybrid (3 - 7 mils) – Carboline
  - Corafalon ADS (semi gloss), fluoropolymer (1.5 - 3 mils) – PPG/Keeler & Long
  - Polysiloxane XLE (gloss), epoxy siloxane (3 - 7 mils) – Sherwin-Williams

All cleaning, preparation for painting and painting shall be done in the same shop to ensure single source responsibility of the entire coating system. Also, all paint materials shall be from a single source to ensure compatibility and samples of components submitted for approval by the Department, before use.

In addition, sequence of operation shall be submitted describing the procedure used in preparing the galvanized surface, the brand names of the paint to be used, and certification that the paint that is used is compatible with galvanized surfaces.

Paint storage, mixing, and application shall satisfy this specification and the paint manufacturer's written instructions and product data sheets. In the event of a conflict the Contractor shall advise the Engineer and comply with the Engineer's written resolution. Until a resolution is provided, the most restrictive conditions shall apply.

- a) Paint Storage and Mixing. All paint shall be stored according to the manufacturer's published instructions, including handling, storage and application temperatures, and shelf life. All coatings shall be supplied in sealed containers bearing the manufacturer's name, product designation, batch number and mixing instructions. Leaking containers shall not be used.

Mixing shall be according to the manufacturer's instructions. Thinning shall be performed only with the type approved, and to the extent allowed by the manufacturer's written instructions. In no case shall thinning cause the coating to exceed the local Volatile Organic Compound (VOC) emission restrictions. For multiple component paints, only complete kits shall be mixed and used. Partial kit mixing is not allowed.

The ingredients shall be thoroughly power mixed in their original containers before use or combining with other paint system components. Mixing shall break up all lumps, completely disperse pigment and result in a uniform composition. Mixed paint shall be examined for uniformity and to verify that no unmixed pigment remains in the container.

Multiple component coatings shall not be used beyond the manufacturer-specified pot life.

Paint that contains either skinning that cannot be readily mixed back into the paint for a uniform composition, or partial hardening due to improper or prolonged storage will be rejected.

The Engineer reserves the right to field sample and analyze previously approved individual components and/or mixed material. If the paint does not meet requirements due to excessive thinning or other problems, any defective coating applied shall be removed and replaced as directed by the Engineer.

- b) **Application Methods.** Unless prohibited by the coating manufacturer's written instructions, paint may be applied by spray, rollers, or brushes. If applied with conventional or airless spray methods, paint shall form a uniform layer by overlapping the edges of the spray pattern.

The painters shall monitor the wet film thickness of each coat during application. The desired range of wet film thickness shall be calculated based on the solids volume and the amount of vehicle and thinner added.

When brushes or rollers are used to apply the coating, additional applications according to manufacturer's recommendations may be required to achieve the specified thickness per layer.

- c) **Recoating and Film Continuity.** Paint shall be considered dry for recoating based upon the time/temperature/humidity criteria provided in the manufacturer's instructions and when the next coat can be applied without film irregularities such as lifting, wrinkling, or loss of previous coat adhesion. Contaminated surfaces shall be cleaned prior to application.

Painting shall be done in a professional manner. Each coat of paint shall form a continuous film of uniform thickness, free of defects including, but not limited to, runs, sags, overspray, dryspray, pinholes, and voids. Runs shall be brushed out immediately during application.

**Construction Requirements.** The contact surfaces of splice flange connections (mating flange faces and areas under splice bolt heads and nuts) shall be free of paint prior to assembly. If white rust is visible on the mating flange surfaces, the steel shall be prepared by hand wire brushing or brush-off blasting according to SSPC-SP7. Power wire brushing is not allowed.

After field erection, the following areas shall be prepared by cleaning according to SSPC-SP1 (Solvent Cleaning) with a non-hydrocarbon cleaner, tie- or wash-coated if applicable, and then painted or touched up with the paint specified for shop application (the prime and two finish coats or the alternate two coat system):

- exposed unpainted areas at bolted connections
- areas where the shop paint has been damaged
- any other unpainted, exposed areas as directed by the Engineer.

Quality Control. The Contractor shall conduct a quality control program that ensures that the work accomplished complies with these specifications. The quality control program shall consist of:

- Qualified personnel to manage the program and conduct quality control tests.
- Proper quality measuring instruments.
- Quality Control Plan.
- Condition and quality recording procedures.

The personnel managing the quality control program shall have experience and knowledge of industrial coatings and the measurements needed to assure quality work. The personnel performing the quality control tests shall be trained in the use of the quality control instruments. These personnel shall not perform surface preparation and painting. Painters shall perform wet film thickness measurements. The Contractor shall supply all necessary equipment to perform quality control testing of shop conditions, equipment, surface preparation, and profile and paint film thickness. The Contractor's personnel in accordance with the equipment manufacturer's recommendations shall calibrate these instruments.

The Contractor shall implement a Quality Control Plan approved by the Engineer including a schedule of required measurements and tests as outlined herein, procedures for correcting unacceptable work, and procedures for improving surface preparation and painting quality as a result of quality control findings. The Contractor shall supply and use forms approved by the Engineer to record the results of quality control tests. These reports shall be available at the work site for review by the Engineer. The purpose of the quality control program is to assist the Contractor in the proper performance of the work. Quality control tests performed by the Contractor will not be used as the sole basis for acceptance of the work.

Warranty. The Contractor shall unconditionally warrant to the Illinois Department of Transportation (IDOT) that all surface preparation and painting of galvanized steel traffic structures work completed under all the contract pay items for OVERHEAD SIGN STRUCTURE, including all materials and workmanship furnished by the Contractor and subcontractors, shall comply with the Contract, and that the surface preparation and painting system applied be free of defects, as hereinafter defined for a period of 10 years after the Warranty Period Start Date. The Contractor shall secure all appropriate documentation from the paint manufacturer and the paint applicator as required to support the warranty.

The work associated with the above stated pay items shall be accomplished according to all contract documents and the provisions outlined in this Special Provision. Acceptance by the Engineer, of any portion of the work during the original contract for surface preparation and painting, will not relieve the Contractor of the requirements of this warranty.

The Contractor guarantees that after receipt of notice from the Department as provided herein, he/she shall perform the 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 Department's remedies under this warranty are not exclusive but are in addition to any other remedies provided by this contract or law.

Definitions:

Warranty Period. A 10-year duration initiating on the Warranty Period Start Date.

Warranty Period Start Date. The date the Engineer and Contractor document and execute the final inspection will constitute the start date for the warranty period for the project. Under Contracts where the surface preparation and painting of more than one structure is to be warranted under this item, the Warranty Period Start Date shall be the date the final inspection is executed for the last structure to be painted.

Warranted Distress. The surface preparation and painting will be considered distressed if an occurrence of visible rust or rust breakthrough, paint blistering, flaking and checking, cracking or loss of color are discovered during the Warranty Period. "Distressed" is defined more specifically as follows:

- a) Rust: Any one area of at least 0.36 square meters (0.6 m x 0.6 m) that is Grade 6 or worse as defined by ASTM D 610-01.
- b) Blistering: More than a few #4 blisters as defined by ASTM D 714-87(2000).
- c) Flaking and Checking: Any one area of at least 0.36 square meters (0.6 m x 0.6 m) with 10% or more of that area showing evidence of flaking or checking as defined by ASTM D 772-86(2000) and D 660-93(2000).
- d) Cracking: Evidence of at least No. 8 cracking as defined by ASTM D 661-93(2000).
- e) Color Retention: A change in the black color greater than 8 Delta E Units.

Warranty Work. Corrective action taken to bring the Warranted Distress into compliance. If corrective action is required for more than 40% of the structure during the warranty period, the paint system for the entire structure or structures shall be removed and replaced as directed by the Department.

Working Days. Any calendar day between May 1 and November 30 inclusive except Saturdays, Sundays, or legal holidays observed by the Contractor's entire workforce in Illinois.

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 warranty requirements.

Commencement of Warranty Period. At the final inspection according to Article 105.13, the Engineer and Contractor shall review the surface preparation and painting for compliance with the contract, including any written documentation from the Contractor required by the contract.

The Engineer and the Contractor shall document and execute the final inspection on a form furnished by the Department when the surface preparation and painting of the structure(s) is determined by the Engineer to be in compliance with the Contract. This date is then the Warranty 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 warranty requirements for the surface preparation and painting of the structure(s).

At the end of the 10-year Warranty Period and remedy of any distress occurring within the Warranty Period, the Contractor will be released, in writing, from further Warranty Work, provided all previous Warranty Work has been completed and approved by the Engineer.

Warranty Requirements. During the warranty period, the Contractor may monitor the warranted work using non-destructive procedures. All laboratories and equipment used for independent testing shall be approved by the Department.

The Department will notify the Contractor of the need for Warranty Work. If the Contractor disputes the Department's request for Warranty Work written notification of the dispute shall be provided to the Department within 30 days. However, any dispute by the Contractor shall be based on the appraisals and technical merit of a NACE Certified Inspector. 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.

The Contractor shall perform Warranty Work promptly as defined in the notification. The notification will provide a requested start date for performance of Warranty Work covered by the notice, and a number of working days estimated to complete the Warranty Work. The Department and the Contractor may agree upon a start date and a reasonable period of performance to define prompt completion.

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 painting specifications. A repair procedure shall be submitted in writing to the Engineer for review and approval prior to commencing any work. All paint repair work will be done the same season as the inspection, unless the seasonal limitations stated in the painting specifications prevents the completion that season. In this case, the corrective work will be completed the following season. The Engineer shall be allowed full inspection of all operations and provided safe access to the areas being repaired.

The Contractor may perform preventative action with the approval of the Department, at no cost to the Department. Prior to proceeding with any 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. The Department may restrict the time of work according to the traffic needs surrounding the structure.

Evaluation of the warranted work will be accomplished on a per structure basis. 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 or elective preventative action 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 routine maintenance during the warranty such as washing, applying de-icing chemicals, 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 rights and responsibilities of the Department are as follows:

- a. Is responsible for notifying the Contractor, in writing, of any required warranty work.
- b. Reserves the right to approve the date(s) and time(s) requested by the Contractor to perform preventative maintenance and warranty work.
- c. Reserves the right to approve all materials and methods used in preventative maintenance and warranty work.
- d. Reserves the right to determine if warranty work performed by the Contractor meets the contract requirements.
- e. Reserves the right to perform, or have performed, routine maintenance during the warranty period. This routine maintenance will not relieve the Contractor from meeting the warranty requirement of this Special Provision.
- f. Shall document the condition of the paint system prior to and after any warranty work.

Rights and Responsibilities of the Contractor. The rights and responsibilities of the Contractor are as follows:

- a. Shall unconditionally warrant to the Department that the surface preparation and painting of the galvanized steel shall be free of defects in materials and workmanship as defined by the warranty requirements as set forth above, for a period of 10 years from the Warranty Period Start Date for the project.
- b. Shall submit to the Department the warranty on forms furnished by the Department, prior to the Warranty Period Start Date.
- c. Is responsible for performing all warranty work, including, but not limited to, traffic control, obtaining railroad liability insurance where applicable at no additional cost to the Department.
- d. Shall retain all records for a period of 1 year beyond the end of the Warranty Period or the completion of any warranted repairs, whichever is later.

- e. Is responsible for replacing all temporary repairs, resulting from the painting 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 is performed.
- g. Shall complete all warranty work 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(s) that any warranty work is being performed.
- i. Shall notify the Department and shall submit a written course of action proposing appropriate corrective measures for the 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 preconstruction meeting and will be knowledgeable in the terms and conditions of this warranty, as well as the methods used to determine paint system distress. Changes to the team membership will be made in writing for the warranty period.

Basis of Payment. The cost of all surface preparation, galvanizing, painting, warranty and all other work described herein shall be considered as included in the unit price bid for the applicable pay items covering the traffic structure items to be galvanized and painted, according to the Standard Specifications.

**ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**

**1 OF 2**

**WARRANTY**

**PAINT QUALITY**

THIS WARRANTY, made by \_\_\_\_\_  
(Contractor)  
of \_\_\_\_\_ hereinafter called "Warrantor",  
in favor of the Illinois Department of Transportation, hereinafter called "Department";

WITNESSETH:

RECITALS:

1. The Department has contracted for the surface preparation and painting of galvanized steel overhead sign structures included in the Interstate 74 Reconstruction Project (structures over I-74 and the ramps and arterial streets associated with the interchanges) in Peoria and Tazewell Counties, Illinois.

Under the provision of Contract No. \_\_\_\_\_, pertaining in part to painting of galvanized steel, entered into by

\_\_\_\_\_, and the Department,  
(Contractor)

the \_\_\_\_\_ is required  
(Contractor)

to furnish the Department a written warranty for the paint system warranting against defect as stated in said contract for a period(s) of ten years from the date(s) of final inspection by the Engineer, of \_\_\_\_\_'s work under said contract.

(Contractor)

**ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**

**2 OF 2**

**WARRANTY**

**PAINT QUALITY**

NOW, THEREFORE, in consideration of the foregoing, Warrantor hereby agrees and warrants that in every case in which any defect, as described in Contract No. \_\_\_\_\_, occurs within said ten years period(s), Warrantor shall, forthwith upon receipt of written notice of such defect, repair said defective area.

It is expressly understood and agreed that the warranty and 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:\_\_\_\_\_

\_\_\_\_\_

## **GALVANIZED STEEL TRAFFIC STRUCTURES**

Effective January 14, 2004

General: All steel overhead sign structures, both span and cantilever, shall be finished with a duplex finishing system. The sign structures shall be hot dipped galvanized in accordance with AASHTO M111 and then the exterior of all the members shall be painted as specified in the Special Provision "*Surface Preparation and Painting of Galvanized Steel Traffic Structures*".

Absolutely no water quenching or chromate conversion coating is allowed of the galvanized surface that is to be painted, as they will interfere with the adhesion of the paint coatings to the zinc surface.

Basis of Payment. The cost of all galvanizing, surface preparation, painting, warranty and all other work described in AASHTO M111 and the Special Provision "*Surface Preparation and Painting of Galvanized Steel Traffic Structures*" shall be considered as included in the unit price bid for the applicable pay items covering the traffic structures.

## **ALUMINUM RAILING, TYPE H, SPECIAL ALUMINUM RAILING, TYPE L, SPECIAL**

Effective February 5, 2002

Revised July 24, 2003

### **1. Description**

This work shall consist of furnishing, and installing Aluminum Railing on concrete bridge parapets and elsewhere as shown on the plans. The work includes but is not limited to, coordination, submittals, materials, fabrication, finishing, transportation, installation, and all other miscellaneous elements required for complete provision of the Railing. All work shall conform to the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2002, and as specified herein.

### **2. General**

#### **2.1 Related Documents**

Drawings and general provisions of the Contract and SECTION 509: METAL RAILINGS of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2002 except as noted otherwise.

### **3. Materials**

#### **3.1 Finishes**

- (a) All exposed Aluminum Rail materials shall be given an anodic oxide coating, dyed black (Munsell Number N1), conforming to the requirements of ASTM designation B 580, Type B, Architectural Class I.
- (b) The exposed heads and nuts of all hot-dip galvanized anchor rods shall be spot painted using an approved paint system to match finish color. The surface to be painted shall first be cleaned with an approved solvent.
- (c) Any damage to the coatings shall be repaired promptly in accordance with the manufacturer's recommendations or replaced with undamaged components. Repairs shall be subject to approval by the Engineer. Finish all damaged, cut or other uncoated surfaces, subject to approval by the Engineer, with high performance finish coat, compatible with anodic oxide coating system, to match finish color.

### **3.2 Submittals**

- (a) Product Data: Submit product data for each type of product indicated:
  - (1) Aluminum Components
  - (2) Fasteners
  - (3) Finish Systems - including factory and field applied systems.
- (b) Material Certifications: Submit material certifications signed by manufacturers certifying that each of the following items complies with requirements:
  - (1) Aluminum Components
  - (2) Fasteners
  - (3) Finish Systems - including factory and field applied systems.

### **4. Method of Measurement**

#### **Measured Quantities:**

ALUMINUM RAILING, TYPE H, SPECIAL and ALUMINUM RAILING, TYPE L, SPECIAL will be measured per installed meter. The length paid for shall be the overall length along the top of the rail through all posts and gaps. Railing installed on a curve or grade will be measured along the curve or grade.

### **5. Basis of Payment**

This item shall be paid for at the contract unit price per meter for ALUMINUM RAILING, TYPE H, SPECIAL or ALUMINUM RAILING, TYPE L, SPECIAL, which price shall include all material, hardware, labor, transportation, cleaning and finishing as specified in this special provision.

## **PERMANENT GROUND ANCHORS**

Effective: October 4, 1995

Revised: October 6, 1997

This work shall consist of designing, furnishing, installing, testing and stressing permanent cement-grouted ground anchors according to the plans and the special provisions. This work also includes the furnishing and installing of the anchorage head assemblies.

This is a performance specification for a single ground anchor. The Contractor is given the responsibility for the ground anchor design, construction and performance. The anchor bond lengths shown on the plans are estimated based on the soil data and were determined according to AASHTO Specifications. The Contractor shall select the ground anchor type, the installation method and determine the bond length and anchor diameter. The Contractor shall be responsible for installing ground anchors that will develop the design capacity indicated on the Contract Plans according to the testing subsection of this Specification.

## **SITE GEOLOGY AND SOILS CONDITIONS**

The geologic conditions for this project are represented by the boring information shown on the plans. The Contractor, utilizing his/her expertise, shall be responsible for interpreting the data, including but not limited to, the making of additional borings as necessary to be fully familiar with the existing conditions in order to design and successfully install the permanent ground anchors

as specified. Variations in geologic deposits, rock surface or ground water elevations, etc., are to be expected between borings and shall not be considered a change in site conditions as defined by Article 104.03 of the Standard Specifications.

## **SUBMITTALS**

Qualifications. The Contractor performing the work described in this Specification shall have installed permanent ground anchors for a minimum of three (3) years. At the time of the preconstruction meeting, the Contractor shall submit a list containing at least five (5) projects, completed within the last three (3) years, where the Contractor has installed permanent ground anchors. A brief description of each project and a reference shall be included for each project listed. As a minimum, the reference shall include an individual's name, company and current phone number.

The Contractor shall submit a list identifying the engineer, drill operators and on-site supervisors who shall be assigned to the project. The list shall contain a summary of each individual's experience and it shall be complete enough for the Engineer to determine whether or not each individual has satisfied the following qualifications.

The Contractor shall assign an engineer to supervise the work with at least three (3) years of experience in the design and construction of permanently anchored structures. The Contractor may not use consultants or manufacturer's representatives in order to meet the requirements of this section. Drill operators and on-site supervisors shall have a minimum of one (1)-year experience installing permanent ground anchors with the Contractor's organization.

Work shall not be started on any ground anchor wall system nor materials ordered until approval of the Contractor's qualifications are given. The Engineer may suspend the ground anchor work if the Contractor substitutes unqualified personnel for approved personnel during construction. If work is suspended due to the substitution of unqualified personnel, the Contractor shall be fully liable for additional costs resulting from the suspension of work and no adjustments to contract time resulting from suspension will be allowed.

Shop plans. At least four weeks before work is to begin, the Contractor shall submit to the Engineer for review and approval complete shop plans and design calculations describing the ground anchor system or systems intended for use. The submittal shall include the following:

- (1) A ground anchor schedule giving:
  - (a) Ground anchor number
  - (b) Ground anchor design load
  - (c) Type and size of tendon
  - (d) Minimum total anchor length
  - (e) Minimum bond length
  - (f) Minimum tendon length
  - (g) Minimum unbonded length
  
- (2) A drawing of the ground anchor tendon and the corrosion protection system, including details for the following:



- (a) Spacers separating elements of tendon and their location
- (b) Centralizers and their location
- (c) Unbonded length corrosion protection system
- (d) Bond length corrosion protection system
- (e) Anchorage head assembly and trumpet
- (f) Anchorage cover corrosion protection system
- (g) Drilled or formed hole size
- (h) Level of each stage of grouting
- (i) Any revisions to structure details necessary to accommodate the ground anchor system intended for use.

(3) The grout mix design and procedures for placing the grout.

No work on ground anchors shall begin until shop plans have been approved in writing by the Engineer. Such approval shall not relieve the Contractor of any responsibility under the contract for the successful completion of the work.

#### MATERIALS

Prestressing Steel: Ground anchor tendons shall consist of single or multiple elements of one of the following prestressing steels:

- 1) Uncoated, seven-wire strands, conforming to AASHTO M203
- 2) Indented, seven-wire strands, conforming to ASTM A886/A886M
- 3) Epoxy coated, seven-wire strands, conforming to ASTM A882/A882M

Prestressing Steel Couplers: Prestressing steel couplers shall be capable of developing 95 percent of the minimum specified ultimate tensile strength of the prestressing steel.

Grout: Cement shall be Type I, II or III portland cement conforming to Section 1001 of the Standard Specifications. Cement used for grouting shall be fresh and shall not contain any lumps or other indications of hydration or "pack set."

Aggregate shall conform to the requirements for fine aggregate Section 1003 of the Standard Specifications.

Admixtures may be used in the grout subject to the approval of the Engineer. Expansive admixtures may only be added to the grout used for filling sealed encapsulations, trumpets, anchorage head assemblies and covers. Accelerators shall not be used.

Water for mixing grout shall be according to Section 1002 of the Standard Specifications.

Steel Elements: Anchorage head assemblies, including bearing and wedge plates, shall be fabricated from steel conforming to AASHTO M270 (ASTM A702) Grade 250 (36), or be a ductile iron casting conforming to ASTM A536.

Trumpets used to provide a transition from the anchorage head assembly to the unbonded length corrosion protection shall be fabricated from a steel pipe or tube conforming to the requirements of ASTM A-53 for pipe or ASTM A-500 for tubing. Minimum wall thickness shall be 5 mm (0.20 inch).

Anchorage covers used to enclose exposed anchorage's shall be fabricated from steel, steel pipe, steel tube, or ductile cast iron conforming to the requirement of AASHTO M270 (ASTM A709) Grade 250 (36) for steel, ASTM A-53 for pipe, ASTM A-500 for tubing, and ASTM A-536 for ductile cast iron. Minimum thickness shall be 2.5 mm (0.10 inch).

Corrosion Protection Elements: Corrosion inhibiting grease shall conform to the requirements of the Post Tensioning Institute's "Specifications for Unbonded Single Strand Tendons," Section 3.2.5.

The sheath for the unbonded length of a tendon shall consist of one of the following:

- (1) Seamless polyethylene (PE) tube having a minimum wall thickness of 1525 microns (60 mils) plus or minus 250 microns (10 mils). The polyethylene shall be cell classification 334413 by ASTM D3350.
- (2) Seamless polypropylene tube having a minimum wall thickness of 1525 microns (60 mils) plus or minus 255 microns (10 mils). The polypropylene shall be cell classification PP210B55542-11 by ASTM D4101.
- (3) Heat shrinkable tube consisting of a radiation crosslinked polyolefin tube internally coated with an adhesive sealant. The minimum tube wall thickness before shrinking shall be 610 microns (24 mils). The minimum adhesive sealant thickness shall be 510 microns (20 mils).
- (4) Corrugated polyvinyl chloride (PVC) tube having a minimum wall thickness of 760 microns (30 mils).

Encapsulation for the tendon bond length shall consist of one of the following:

- (1) Corrugated high density polyethylene (HDPE) tube having a minimum wall thickness of 760 microns (30 mils) and conforming to AASHTO M252 requirements.
- (2) Deformed steel tube or pipe having a minimum wall thickness of 635 microns (25 mils).
- (3) Corrugated polyvinyl chloride (PVC) tube having a minimum wall thickness of 760 microns (30 mils). (ASTM D-1784) class 13464-B
- (4) Fusion-bonded epoxy conforming to the requirements of AASHTO M284, except that it shall have a film thickness of 380 microns (15 mils).

Miscellaneous Elements: The bondbreaker for a tendon shall consist of smooth plastic tube or pipe that is resistant to aging by ultra-violet light and that is capable of withstanding abrasion, impact and bending during handling and installation.

Spacers for separation of elements of a multi-element tendon shall permit the free flow of grout. They shall be fabricated from plastic, steel or material which is not detrimental to the prestressing steel. Wood shall not be used.

Centralizers shall be fabricated from plastic, steel or material which is not detrimental to either the prestressing steel or any element of the tendon corrosion protection. Wood shall not be used.

## FABRICATION

Tendons for ground anchors may be either shop or field fabricated from materials conforming to this specifications requirements. Tendons shall be fabricated as shown on the approved shop plans.

Bond Length and Tendon Bond Length: The Contractor shall determine the bond length necessary to satisfy the load test requirements. The minimum bond length shall be 3 m (10 ft) in rock, 4.6 m (15 ft) in soil. The minimum tendon bond length shall be 3 m (10 ft).

Spacers shall be placed along the tendon bond length of multi-element tendons so that the prestressing steel will bond to the grout. They shall be located at 3 m (10 ft) maximum centers with the upper one located a maximum of 1.5 m (5 ft) from the top of the tendon bond length and the lower one located a maximum of 1.5 m (5 ft) from the bottom of the tendon bond length.

Centralizers shall be able to maintain the position of the tendon so that a minimum of 19 mm (0.75 inches) of grout cover is obtained on the tendons at all locations along the tendons. They shall be located at 1.5 m (5 ft) maximum centers with the lower one located 305 mm (1 ft) from the bottom of the bond length. Centralizers are not required on tendons installed utilizing a hollow-stem auger if it is grouted through the auger and the drill hole is maintained full of a stiff grout 230 mm (9 inch) slump or less during extraction of the auger, or when installed utilizing a pressure injection system in coarse grained soils using grout pressures greater than 1035 kPa (150 psi).

Encapsulation Protected Ground Anchor Tendon: The tendon bond length shall be encapsulated by a grout-filled corrugated plastic or deformed steel tube, or by a fusion-bonded epoxy coating. The tendon can be grouted inside the encapsulation prior to inserting the tendon in the drill hole or after the tendon has been placed in the drill hole. Punching holes in the encapsulation and allowing the grout to flow from the encapsulation to the drill hole, or vice versa, will not be permitted. The tendon shall be centralized within the encapsulation and the tube sized to provide an average of 5 mm (0.20 inch) of grout cover for the prestressing steel. The anchorage device of tendons protected with fusion-bonded epoxy shall be electrically isolated from the structure.

Unbonded Length: The unbonded length of the tendon shall be a minimum of 4.6 m (15 ft) or as indicated on the plans.

Corrosion protection shall be provided by a sheath completely filled with corrosion inhibiting grout, or a heat shrinkable tube. Continuity of corrosion protection shall be provided at the transition from the bonded length to unbonded length of the tendon.

If the sheath provided is not a smooth tube, then a separate bondbreaker must be provided to prevent the tendon from bonding to the anchor grout surrounding the unbonded length.

Anchorage and Trumpet: Nonrestressable anchorage's may be used unless restressable anchorage's are designated on the plans.

The trumpet shall be welded to the bearing plate. The trumpet shall have an inside diameter at least 6 mm (1/4 inch) larger than the hole in the bearing plate. The trumpet shall be long enough to accommodate movements of the structure during testing and stressing. For strand tendons with encapsulation over the unbonded length, the trumpet shall be long enough to enable the tendons to make a transition from the diameter of the tendon in the unbonded length to the diameter of the tendon at the anchorage head assembly without damaging the encapsulation. Trumpets shall be filled with grout and have a temporary seal provided between the trumpet and the unbonded length corrosion protection.

Tendon Storage and Handling: Tendons shall be stored and handled in such a manner as to avoid damage or corrosion. Damage to tendon prestressing steel as a result of abrasions, cuts, nicks, welds and weld splatter will be cause for rejection by the Engineer. Grounding of welding leads to the prestressing steel is not permitted. Prior to inserting a tendon into the drilled hole, its corrosion protection elements shall be examined for damage. Any damage found shall be repaired in a manner approved by the Engineer.

## **INSTALLATION**

The first two (2) anchors of each level should be installed and performance tested successfully before drilling any other anchors at that level. In the event that one or both anchors fail the performance test, the Contractor shall re-evaluate the installation procedure and take necessary corrective action. In addition, the first two (2) anchors installed after the Contractor takes necessary corrective action shall be performance tested. The above process shall be repeated until these anchors pass the performance test.

The Contractor shall follow the same installation procedures that are used on the two (2) successful performance test anchors.

Drilling: The drilling method used may be core drilling, rotary drilling, percussion drilling, auger drilling or driven casing. The method of drilling used shall be that which prevents loss of ground above the drilled hole that may be detrimental to the structure or existing structures. Casing for anchor holes, if used, shall be removed, unless permitted by the Engineer to be left in place. Excessive amounts of water shall not be used in the drilling operation. Inclination and alignment shall be within plus or minus 3 degrees of the planned angle at the anchorage head assembly. Drilling in shale shall require the hole to be completed, tendon inserted, and grouted within the same working day.

Tendon Insertion: The tendon shall be inserted into the drilled hole to the desired depth without difficulty. When the tendon cannot be completely inserted it shall be removed and the drill hole cleaned or redrilled to permit insertion. Partially inserted tendons shall not be driven or forced into the hole.

Grouting: The grouting equipment shall produce a grout free of lumps and undispersed cement. A positive displacement grout pump shall be used. The pump shall be equipped with a pressure gauge to monitor grout pressures. The pressure gauge shall be capable of measuring pressures of at least 1035 kPa (150 psi) or twice the actual grout pressures used, whichever is greater. The grouting equipment shall be sized to enable the grout to be pumped in one continuous operation. The mixer shall be capable of continuously agitating the grout.

The grout shall be injected from the lowest point of the drilled hole. The grout may be pumped through grout tubes, casing, hollow-stem augers or drill rods. The grout may be placed before or after insertion of the tendon. The quantity of the grout and the grout pressures shall be recorded. The grout pressures and grout takes shall be controlled to prevent excessive heave of the ground or fracturing of rock formations.

Except where indicated below, the grout above the top of the bond length may be placed at the same time as the bond length grout, but it shall not be placed under pressure. The grout at the top of the drill hole shall stop 150 mm (6 inches) from the back of the trumpet.

If the ground anchor is installed in a fine-grained soil using a drilled hole larger than 150 mm (6 inches) in diameter, then the grout above the top of the bond length shall be placed after the ground anchor has been load tested. The entire drill hole may be grouted at the same time if it can be demonstrated that the ground anchor system does not derive a significant portion of its load resistance from the soil above the bond length portion of the ground anchor.

If grout protected tendons are used for ground anchors anchored in rock, then pressure grouting techniques shall be utilized. Pressure grouting requires that the drill hole be sealed and that the grout be injected until a 345 kPa (50 psi) grout pressure can be maintained on the grout within the bond length for a period of 5 minutes.

Upon completion of grouting, the grout tube may remain in the drill hole provided it is filled with grout.

After grouting, the tendon shall not be loaded for a minimum of three days.

Trumpet and Anchorage: The corrosion protection surrounding the unbonded length of the tendon shall extend into the trumpet a minimum of 150 mm (6 inches) beyond the bottom seal in the trumpet.

The corrosion protection surrounding the unbonded length of the tendon shall not contact the bearing plate or the anchorage head assembly during load testing or stressing.

The trumpet shall be completely filled with corrosion inhibiting grout. The grout shall be placed after the ground anchor has been load tested and locked off at the design load. The Contractor shall demonstrate that the procedures selected for placement of grout will produce a completely filled trumpet and anchorage head assembly.

Anchorage's not encased in concrete wall fascia shall be covered with a corrosion inhibiting grout-filled steel enclosure.

## **TESTING AND STRESSING**

Each ground anchor shall be load tested by the Contractor in the presence of the Engineer. No load greater than 10 percent of the design load may be applied to the ground anchor prior to load testing. The test load shall be simultaneously applied to the entire tendon.

Testing Equipment: Two dial gauges or vernier scales capable of measuring displacements to 25 microns (.001 inch) shall be used to measure ground anchor movement on either side of the

jack from two independent points. They shall have adequate travel so total ground anchor movement can be measured without resetting the devices.

A hydraulic jack and pump shall be used to apply the test load. The jack and a calibrated pressure gauge shall be used to measure the applied load. The pressure gauge shall be graduated in 690 kPa (100 psi) increments or less. When the theoretical elastic elongation of the total anchor length at the maximum test load exceeds the ram travel of the jack, the procedure for recycling the jack ram shall be included in the working drawings. Each increment of test load shall be applied in one minute or less.

A calibrated reference pressure gauge shall be available at the site. The reference gauge shall be calibrated with the test jack and pressure gauge.

An electrical resistance load cell and readout shall be provided when performing a creep test.

The stressing equipment shall be placed over the ground anchor tendon in such a manner that the jack, bearing plates, load cell and stressing anchorage are axially aligned with the tendon and the tendon is centered within the equipment.

Performance Test: Five percent of the ground anchors or a minimum of three ground anchors, whichever is greater shall be performance tested according to the following procedures. The Engineer shall select the ground anchors to be performance tested. The remaining anchors shall be tested according to the proof test procedures.

The performance test shall be made by incrementally loading and unloading the ground anchor according to the following schedule unless a different maximum test load and schedule are indicated on the plans. The load shall be raised from one increment to another immediately after recording the ground anchor movement. The ground anchor movement, on either side of the jack, shall be measured and recorded to the nearest 25 micron (.001 inch) with respect to the independent fixed reference points at the alignment load and at each load increment. The load shall be monitored with a pressure gauge. The reference pressure gauge shall be placed in series with the pressure gauge during each performance test. If the load determined by the reference pressure gauge and the load determined by the pressure gauge differ by more than 10 percent, the jack, pressure gauge and reference pressure gauge shall be recalibrated. At load increments other than the maximum test load, the load shall be held just long enough to obtain the movement reading.

Performance Test Schedule

<u>Load</u>	<u>Load (Continued)</u>
AL	AL
0.25DL*	0.25DL
AL	0.50DL
0.25DL	0.75DL
0.50DL*	1.00DL
AL	1.20DL*
0.25DL	AL
0.50DL	0.25DL
0.75DL*	0.50DL
AL	0.75DL
0.25DL	1.00DL
0.50DL	1.20DL
0.75DL	1.33DL*
1.00DL*	(Max. test load)
	Reduce to lock-off load (1.00DL)

Where: AL = Alignment Load  
 DL = Design load for ground anchor  
 \* = Graph required

The maximum test load in a performance test shall be held for 10 minutes. The jack shall be repumped as necessary in order to maintain a constant load. The load hold period shall start as soon as the maximum test load is applied and the ground anchor movement shall be measured and recorded at 1, 2, 3, 4, 5, 6 and 10 minutes. If the ground anchor movements between 1 minute and 10 minutes exceed 1 mm (0.04 in), the maximum test load shall be held for an additional 50 minutes. If the load hold is extended, the ground anchor movement shall be recorded at 15, 20, 25, 30, 45 and 60 minutes.

A graph shall be constructed showing a plot of ground anchor movement versus load for each load increment marked with an asterisk (\*) in the performance test schedule and a plot of the residual ground anchor movement of the tendon at each alignment load versus the highest previously applied load. Graph format shall be approved by the Engineer prior to use.

Proof Test: The proof test shall be performed by incrementally loading the ground anchor according to the following schedule. The load shall be raised from one increment to another immediately after recording the ground anchor movement. The ground anchor movement, on either side of the jack, shall be measured and recorded to the nearest 25 micron (.001 inch) with respect to the independent fixed reference points at the alignment load and at each increment of load. The load shall be monitored with a pressure gauge. At load increments other than the maximum test load, the load shall be held just long enough to obtain the movement reading.

Proof Test Schedule

<u>Load</u>	<u>Load (Continued)</u>
AL	1.00DL
0.25DL	1.20DL
0.50DL	1.33DL
0.75DL	(Max. test load)
	Reduce to lock-off load (1.00DL)

Where: AL = Alignment Load  
DL = Design load for ground anchor

The maximum test load in a proof test shall be held for 10 minutes. The jack shall be repumped as necessary in order to maintain a constant load. The load hold period shall start as soon as the maximum test load is applied and the ground anchor movement shall be measured and recorded at 1, 2, 3, 4, 5, 6 and 10 minutes. If the ground anchor movement between 1 minute and 10 minutes exceeds 1 mm (0.04 inch), the maximum test load shall be held for an additional 50 minutes. If the load hold is extended, the ground anchor movement shall be recorded at 15, 20, 25, 30, 45 and 60 minutes. A graph shall be constructed showing a plot of ground anchor movement versus load for each load increment in the proof test.

Creep Test: Creep tests shall be performed only if required by the plans. The Engineer shall select the ground anchor(s) to be creep tested.

The creep test shall be made by incrementally loading and unloading the ground anchor according to the performance test schedule used. At the end of each loading cycle, the load shall be held constant for the observation period indicated in the creep test schedule below unless a different maximum test load is indicated on the plans. The times for reading and recording the ground anchor movement during each observation period shall be 1, 2, 3, 4, 5, 6, 10, 15, 20, 25, 30, 45, 60, 75, 90, 100, 120, 150, 180, 210, 240, 270 and 300 minutes as appropriate. Each load hold period shall start as soon as the test load is applied. In a creep test the pressure gauge and reference pressure gauge will be used to measure the applied load, and the load cell will be used to monitor small changes of load during a constant load hold period. The jack shall be repumped as necessary in order to maintain a constant load.



Creep Test Schedule

<u>Load</u>	<u>Observation Period (Minutes)</u>
AL	
0.25DL	10
0.50DL	30
0.75DL	30
1.00DL	45
1.20DL	60
1.33DL	300

A graph shall be constructed showing a plot of the ground anchor movement and the residual movement measured in a creep test as described for the performance test. Also, a graph shall be constructed showing a plot of the ground creep movement for each load hold as a function of the logarithm of time.

Ground Anchor Load Test Acceptance Criteria: A performance-tested or proof-tested ground anchor with a 10 minute load hold is acceptable if the:

- (1) Ground anchor resists the maximum test load with less than 1 mm (0.04 inch) of movement between 1 minute and 10 minutes; and
- (2) Total movement at the maximum test load exceeds 80 percent of the theoretical elastic elongation of the unbonded length.
- (3) Total movement at the maximum test load for ground anchors in rock may not exceed the theoretical elastic elongation of the unbonded length plus 50 percent of the theoretical elastic elongation of the bonded length.

A performance-tested or proof-tested ground anchor with a 60 minute load hold or a creep tested ground anchor is acceptable if the:

- (1) Ground anchor resists the maximum test load with a creep rate that does not exceed 2 mm (0.08 inch) in the last log cycle of time; and
- (2) Total movement at the maximum test load exceeds 80 percent of the theoretical elastic elongation of the unbonded length.
- (3) Total movement at the maximum test load for ground anchors in rock may not exceed the theoretical elastic elongation of the unbonded length plus 50 percent of the theoretical elastic elongation of the bonded length.

If the total movement of the ground anchor at the maximum test load does not exceed 80 percent of the theoretical elastic elongation of the unbonded length, the ground anchor shall be replaced at the Contractor's expense.

A ground anchor which has a creep rate greater than 2 mm (0.08 inch) per log cycle of time can be incorporated into the structure at a design load equal to one-half of its failure load. The failure load is the load resisted by the ground anchor after the load has been allowed to stabilize for 10 minutes.

When a ground anchor fails, the Contractor shall modify the design and/or the installation procedures. These modifications may include, but are not limited to, installing a replacement ground anchor, reducing the design load by increasing the number of ground anchors, modifying the installation methods, increasing the bond length or changing the ground anchor type. Any modification which requires changes to the structure shall be approved by the Engineer. Any modifications of design or construction procedures shall be without additional cost to the Department and without extension of contract time.

Retesting of a ground anchor will not be permitted, except that regouted ground anchors may be retested each time they are regouted.

Lock Off: Upon successful completion of the load testing, the ground anchor load shall be reduced to the design load indicated on the plans and transferred to the anchorage device. The ground anchor may be completely unloaded prior to lock-off. After transferring the load and prior to removing the jack, a lift-off load reading shall be made. The lift-off load shall be within 10 percent of the specified lock-off load. If the load is not within 10 percent of the specified lock-off load, the anchorage shall be reset and another lift-off load reading shall be made. This process shall be repeated until the desired lock-off load is obtained.

#### **METHOD OF MEASUREMENT**

This work will be measured per each permanent ground anchor, installed according to the plans or as approved by the Engineer, and passing the testing program(s) required in this Special Provision.

#### **BASIS OF PAYMENT**

This work will be paid for at the contract unit price each for PERMANENT GROUND ANCHORS and shall be compensation in full for designing, furnishing, installing and testing the permanent ground anchors and anchorage head assemblies.

#### **DRIVING STEEL H-PILES**

Effective March 4, 2002

Revised March 13, 2003

All steel H-piles piles shown to be driven to refusal based on 12 ksi shall be driven according to Section 512 of the Standard Specifications except as modified herein.

*512.10(b) Add the following paragraph to the end of this Article:*

All pile driving equipment shall be equipped with a suitable thickness of hammer cushion material to prevent damage to the hammer or pile and to ensure uniform driving behavior. Hammer cushions shall be made of durable manufactured materials provided according to the hammer manufacturer's guidelines except that the use of wood, wire

rope and asbestos hammer cushions are not allowed. A striker plate as recommended by the hammer manufacturer shall be placed on the hammer cushion to ensure uniform compression of the cushion material. The hammer cushion shall be inspected in the presence of the Engineer when beginning pile driving and after each 100 hours of pile driving. When the reduction in thickness of hammer cushion exceeds 25 percent of the original thickness, the hammer cushion shall be replaced by the Contractor before driving is permitted to continue. The cushion material type and thickness shall be consistent with that shown in the approved "pile and driving equipment data form".

*512.10(g) Replace this Article with the following:*

(g) Hammers for Steel Piles. Steel piles shall be driven with a steam, air, diesel, or hydraulic hammer. All pile driving equipment furnished by the Contractor shall be subject to the approval of the Engineer. All pile driving equipment be sized such that production piles can be driven with reasonable effort to the required bearing value without being damaged during driving. The Contractor shall submit to the Engineer the necessary pile driving equipment information on the "Pile and Driving Equipment Data Form" below for each substructure unit within 30 days after award of the contract. No extension of contract time shall be granted for delays due to failure of the Contractor to observe this time requirement. Approval of the pile driving equipment will be based on wave equation analysis. In no case shall the driving equipment be transported to the site until approval of the equipment is received in writing from the Engineer.

The criteria, which the Engineer will use to evaluate the driving equipment from the wave equation results, consists of both the required number of blows per inch and the pile stresses at the required bearing value. The required number of hammer blows indicated by the wave equation at the bearing value shall be between 3 and 15 blows per inch for the driving equipment to be acceptable. In addition, for the driving equipment to be acceptable, the compressive stress in the pile due to driving as indicated by the wave equation shall not exceed 90 percent of the yield point of the pile material.

The Engineer will evaluate only one pile driving system at a time for each pile type. The Contractor is advised to submit only the pile driving system intended for use for each pile type driven. If more than one system is submitted per pile type, delays in approval may be expected and no additional compensation or extension of contract time will be given. If the proposed driving equipment or methods are found to be unacceptable, the Contractor shall modify or replace the proposed equipment or methods at his expense and submit revised Pile and Driving Equipment Data Forms until subsequent wave equation analyses indicates the equipment or methods are acceptable. During the pile driving operations, the Contractor shall use the approved system. No variations in the driving system will be permitted without the Engineer's written approval. Any change in the approved driving system will be considered only after the Contractor submits the necessary information for a revised wave equation analysis.

Approval of the pile driving equipment does not relieve the Contractor of the responsibility to properly install the piling. The hammer approval and driving criteria will be based on commonly accepted hammer efficiencies, component properties, and soil parameters. Local soil conditions and the actual driving system will affect the driving. If, in the opinion of the Engineer, the approved driving system fails to perform satisfactorily

during actual driving, the Department reserves the right to revise the driving criteria and to require the Contractor to submit another hammer system.

*512.11 Delete the first paragraph in this Article and replace with the following:*

The steel H piles shall be driven to a depth at which the wave equation analysis indicates that the required bearing value as determined in Article 512.14 has been achieved.

*512.14(b) Replace this Article with the following:*

- (c) By Wave Equation. Piles shall be driven to the required bearing value in pounds, defined as 2.5 times 12000 times the pile cross section in square inches. The actual pile bearing obtained during driving shall be determined by using a graph relating bearing vs. penetration resistance, developed by the Engineer based on a wave equation analysis of the Contractors driving system information proposed at each substructure unit. The Contractor shall submit a request to the Engineer of Bridges and Structures for development and analysis using the wave equation.

### **STORM SEWER REMOVAL**

Effective April 22, 2004

Trench backfill material for storm sewer removal will not be paid for separately, but shall be considered as included in the contract unit price bid for Storm Sewer Removal of the diameter specified.

### **PIPE UNDERDRAIN**

Effective August 1, 2003      Revised June 11, 2005

This work shall be according to Section 601 of the Standard Specifications and plan details except as modified herein:

#### **BACKFILL FOR UNDERDRAINS OR BEDDING**

FA 4 or FM 4 meeting the following gradations shall be used for backfilling the underdrain trench:

<b>Sieve Size</b>	<b>Percent Passing</b>	
	<b><u>FA 4</u></b>	<b><u>FM 4</u></b>
3/8" (9.5 mm)	100	100
No. 4 (4.75 mm)		97 ± 3
No. 8 (2.36 mm)		5 ± 5
No. 10 (2 mm)	21% max	
No. 16 (1.18 mm)	5 ± 5	2 ± 2
No. 200 (75)	2% max	2% max

Only natural sands and gravel shall be used.

**PIPE UNDERDRAIN**

A pipe slot of 1.75mm± 0.25mm shall be used. The number of slots and the slot length may be manipulated to maintain the inlet flow specified in AASHTO M 252-96 as long as it does not compromise any other requirements specified in AASHTO M 252-96. No fabric envelope for the pipe underdrain or the trench shall be used. The District may conduct a number of Ploog Washer tests, using this pipe with random samples of the backfill material. The loss of fines through the pipe slot in the Ploog Washer tests shall not exceed 4%.

**PIPE UNDERDRAIN, 150 MM**

The pipe underdrains shall be encased in a nonwoven fabric envelope for pipe underdrains in accordance Section 1080 of the Standard Specifications. A knitted or woven fabric will not be permitted. If the pipe slot of 1.75 mm ± 0.25 mm can be produced in the 150 mm sized pipe underdrain, the nonwoven fabric envelope shall be deleted.

**SEQUENCE OF PIPE UNDERDRAIN INSTALLATION**

The Contractor shall install the Pipe Underdrain for the Extended Life PCC Pavement as shown in the Project Standard for Sub-Surface Drains with the following exception. The Contractor will be permitted to install the Pipe Underdrain after placement of the Bituminous Binder Course provided the Pipe Underdrain trench is backfilled to the satisfaction of the Engineer. If the Contractor fails to backfill the Pipe Underdrain adequately to provide a smooth base for the Extended Life PCC Pavement the installation method shall return to the method as shown on the Project Standard for Sub-Surface Drains.

In the event the Pipe Underdrain installation is deformed or crushed during construction, the damaged areas shall be removed and replaced to the satisfaction of the Engineer. No additional compensation will be allowed for repair of Pipe Underdrain damaged as a result of the Contractor's operations.

**CONCRETE BARRIER**

Effective February 3, 2003

Revised June 11, 2005

**Description.** This work shall consist of constructing a concrete barrier and, when required, a concrete barrier base.

**Materials.** Materials for concrete barrier and concrete base shall conform to the requirements of the following Articles of Section 1000 - Materials:

Item	Article/Section
(a) Portland Cement Concrete.....	1020
(b) Welded Wire Fabric (Note 1).....	1006.10(a)(c)
(c) Reinforcement Bars (Note 2) .....	1006.10(a)(b)
(d) Protective Coat.....	1023
(e) Non-Shrink Grout .....	1024
(f) Poured Joint Sealer.....	1050
(g) Prefomed Fiberboard .....	1051.04
(h) Prefomed Expansion Joint Filler .....	1051.08 – 1051.09

Note 1. Welded wire fabric shall be 150 mm x 150 mm, 5.7 mm diameter (6 in. x 6 in., W4 x W4) weighing approximately 2.83 kg/sq m (58 lb/100 sq ft).

Note 2. Reinforcement bars shall be Grade 400 (Grade 60). All tie bars, dowel bars, reinforcement bars and chair supports shall be epoxy coated.

## **CONSTRUCTION REQUIREMENTS**

**General.** Concrete barrier shall be constructed according to the applicable portions of Section 503 of the Standard Specifications and details as shown in the plans.

Cast-in-place barrier shall be used. Precast barrier will not be permitted.

**Concrete Barrier Base.** The concrete barrier base shall be constructed separate from the barrier and portland cement concrete shoulder or pavement. The concrete base shall be constructed according to Articles 483.01 to 483.10 of the Standard Specifications.

**Portland Cement Concrete Shoulder Base.** When portland cement concrete shoulder is used as a base for the barrier, the shoulder shall be constructed separate from the barrier. The portland cement concrete shoulder shall be constructed according to Section 483 of the Standard Specifications.

**Anchoring.** Barrier shall be anchored to the base by the methods shown on the plans. Dowel bars used to secure concrete barrier to the base shall be No. 25 (No. 8) deformed reinforcement bars of a length necessary to obtain the minimum embedment shown on the plans. Dowel bars shall be on 1.2 m (4 ft) centers and staggered side to side. Dowel bars placed subsequent to concrete base shall be set in grout in drilled or preformed holes to the satisfaction of the Engineer. . When necessary to permit traffic to use temporary crossovers or ramps, dowel bars shall be drilled and set at the time of barrier construction.

As shown on the plans, the concrete barrier base or concrete barrier shall be tied to the lower shoulder or pavement on one side of the barrier. The side of barrier tied to the adjacent shoulder or pavement shall only be switched at an expansion joint in the barrier base and/or concrete barrier. A fiberboard bond breaker shall be placed along the other side of the concrete barrier base or concrete barrier. The fiberboard bond breaker joint shall be sealed as shown in the plans with hot poured joint sealer.

**Concrete Barrier.** Where the horizontal alignment of the concrete barrier is curved, the barrier shall be constructed either on the curved alignment or on cords not more than 3 m (10 ft) in length.

In lieu of welded wire fabric reinforcement in the concrete barrier, the Contractor may elect to use No. 15 (No. 4) deformed horizontal reinforcement bars on 225 mm (9 in.) centers and No. 15 (No. 4) deformed vertical reinforcement bars on 750 mm (2 ft 6 in.) centers. (The vertical bars may be omitted if the wall is slip formed.) The reinforcement bars shall be lapped a minimum of 325 mm (13 in.). If the Contractor elects to use reinforcement bars in lieu of welded wire fabric, the reinforcement bars will not be measured for payment, but shall be considered included in the contract unit price bid for concrete barrier items.

**Slipforming.** When slip form methods are used, the machine shall be approved by the Engineer. Barriers having dimensions outside the tolerance limits will be rejected and shall be removed and replaced.

The vertical centerline of the barrier shall not vary from the proposed centerline by more than 75 mm (3in.) nor by more than 13 mm in 3 m (1/2 in. in 10 ft). All surfaces shall be checked with a 3 m (10 ft) straightedge as the concrete exits the slipform mold. Surface irregularities greater than 10 mm in 3 m (3/8 in. in 10 ft) shall be corrected immediately. Continued variations in the barrier surface exceeding 6 mm in 3 m (1/4 in. in 10 ft) will not be permitted and remedial action shall immediately be taken to correct problem.

Any deformations or bulges remaining after the initial set shall be removed by grinding after the concrete has hardened. All holes and honeycomb shall be patched immediately.

**Finishing.** The surface of concrete barrier shall be finished according to Article 503.16(a).

### **Joints.**

(a) Construction Joints. Construction joints shall be formed with the use of a smooth header and the reinforcement shall be continuous through the joint. Construction joints shall be constructed in the barrier whenever there is an interruption in the pour of more than 30 minutes.

(b) Expansion Joints. Expansion joints in the adjacent pavement/shoulder that is tied to the base or barrier shall be continued through both the base and the barrier and shall be similar in opening to the type of joint adjoining it. At locations where barrier abuts a rigid structure, a 50 mm (2 in.) preformed expansion joint filler conforming to the shape of the barrier and the structure shall be installed between the barrier and the structure as shown on the plans. Concrete nails or other suitable methods shall be used to hold the expansion joint filler in place.

When dowel bars are required for expansion joints, a light coating of oil shall be uniformly applied to dowel bars prior to placing concrete.

(c) Contraction Joints. Contraction joints in the barrier and the base shall be aligned with contraction joints in the adjacent concrete pavement or shoulder on the side the barrier base is tied to the concrete pavement or shoulder and at uniform intervals with a maximum spacing of 6.0 m (20 ft). Contraction joints shall be formed by a groove 3 mm (1/8 in.) wide by 25 mm (1 in.) deep either formed in the plastic concrete or sawed after the concrete has set. The reinforcement shall be continuous through the joints.

**Protective Coat.** When required, the top and vertical surfaces of the barrier exposed to traffic shall receive a protective coat. The application of the protective coat shall be according to Article 420.21.

**Method of Measurement.** This work will be measured as follows:

(a) Contract Quantities. The requirements for the use of contract quantities shall be according to Article 202.07(a).

(b) Measured Quantities. Concrete barrier base will be measured for payment in square meters (square yards) in place. Furnishing and placing tie bars will not be measured for payment, but shall be considered included in the contract unit price bid for concrete barrier base.

When the shoulder is widened to provide a base for the concrete barrier, the widened shoulder will be measured in accordance with Article 483.11 as portland cement concrete shoulder.

Concrete barrier, single face (modified) will be measured for payment in meters (feet) in place, along the face of the barrier. Furnishing and placing reinforcement bars and bar splicers, dowel bars and the thickened portland cement concrete shoulder, when required, will not be measured for payment, but shall be considered included in the contract unit price bid for concrete barrier, single face (modified).

Concrete barrier, double face (modified) and concrete barrier transition (modified) will be measured for payment in meters (feet) in place, along the centerline of the barrier. Furnishing and placing welded wire fabric, reinforcement bars and dowel bars will not be measured for payment, but shall be considered included in the contract unit price bid for concrete barrier, double face (modified) or concrete barrier transition (modified).

Concrete barrier, double face (special) and concrete barrier transition (special) will be measured for payment in cubic meters (cubic yards) in place. No deductions shall be made for conduits, junction boxes, inlets or other similar appurtenances that are embedded in the concrete barrier or base. Furnishing and placing welded wire fabric and tie bars will not be measured for payment, but shall be considered included in the contract unit price bid for concrete barrier, double face (special) and concrete barrier transition (special).

Protective coat will be measured for payment according to Article 420.22(b).

When an overhead sign or high mast light tower is located in the median, the foundation will not be measured for payment as concrete barrier or concrete barrier base, but shall be paid for separately.

Construction, expansion and contraction joints as outlined herein and shown on the plans will not be measured for payment, but shall be considered included in the contract unit price bid for concrete barrier items.

**Basis of Payment.** This work will be paid for at the contract unit price per meter (foot) for CONCRETE BARRIER BASE; CONCRETE BARRIER, DOUBLE FACE (MODIFIED); CONCRETE BARRIER TRANSITION (MODIFIED); or CONCRETE BARRIER, SINGLE FACE (MODIFIED); at the contract unit price per cubic meter (cubic yard) for CONCRETE BARRIER, DOUBLE FACE (SPECIAL); or CONCRETE BARRIER TRANSITION (SPECIAL).

Protective coat will be paid for according to Article 420.23.

## **SHOULDER RUMBLE STRIPS**

Effective: January 1, 2003

Revised: March 10, 2003

Delete the third paragraph of Article 482.06 of the Standard Specifications.



Delete the last two sentences of the fourth paragraph of Article 483.06 of the Standard Specifications.

Add the following to the Standard Specifications:

#### **“SECTION 642. SHOULDER RUMBLE STRIPS**

**642.01 Description.** This work shall consist of constructing rumble strips in shoulders.

**642.02 Equipment.** The equipment shall be a self-propelled milling machine with a rotary-type cutting head(s). The cutting head(s) shall be suspended from the machine such that it can align itself with the slope of the shoulder and any irregularities in the shoulder surface. The teeth of the cutting head(s) shall be arranged to provide a smooth cut, with no more than a 3 mm (1/8 in.) difference between peaks and valleys.

Prior to commencement of the work, the Contractor shall demonstrate, to the satisfaction of the Engineer, the ability of the equipment to achieve the desired results without damaging the shoulder.

#### **CONSTRUCTION REQUIREMENTS**

**642.03 General.** The rumble strips shall be cut to the dimensions shown on the plans. Guides shall be used to ensure consistent alignment, spacing and depth.

Rumble strips shall be omitted within the limits of structures, entrances, side roads, entrance ramps and exit ramps. In portland cement concrete shoulders, rumble strips shall not be placed within 150 mm (6 in.) of transverse joints.

Cuttings resulting from this operation shall be disposed of according to Article 202.03 of the Standard Specifications and the shoulders shall be vacuumed clean.

**642.04 Method of Measurement.** This work will be measured for payment in meters (feet) along the edge of pavement. Measurement will include both the cut and uncut sections of the shoulder rumble strips with exceptions for bridge decks, approach pavements, turn lanes, entrances and other sections where shoulder rumble strips have been omitted.

**642.05 Basis of Payment.** This work will be paid for at the contract unit price per meter (foot) for SHOULDER RUMBLE STRIPS.”

#### **ENGINEER’S FIELD OFFICE, TYPE A (SPECIAL)**

Effective November 21, 2002

Revised July 17, 2003

This item shall consist of furnishing and maintaining an Engineer’s Field Office as specified in Article 670.01 of the Standard Specifications and herein.

The field office shall have a ceiling height of not less than 2m (7 ft) and a floor space of not less than 185 sq m (2000 sq ft). The office shall be provided with sufficient heat, natural or artificial light and air conditioning. Doors and windows shall be equipped with locks approved by the Engineer.

1. Adequate all weather parking space shall be available to accommodate a minimum of twenty vehicles.
2. Sanitary facilities shall include hot and cold potable running water, lavatory and toilet as an integral part of the office.
3. Solid waste disposal consisting of ten waste baskets and an outside trash container of sufficient size to accommodate a weekly provided pick-up service. Weekly garbage pick up service shall be provided.
4. The Contractor shall provide the following equipment and furniture meeting the approval of the Engineer.
  - a. Eight desks with minimum working surface 1.8m x 1.2m (72 in. x 48 in.) each.
  - b. Two desks with minimum working surface 1.1 m x 750 mm (42 in. x 30 in.) with height adjustment of 585 to 750 mm (23 in. to 30 in.) for computer use.
  - c. Ten non-folding office chairs on wheels with upholstered seats, arm rests and backs.
  - d. Three 4-post drafting tables with minimum top size of 950mm x 1.2m (37-½ in. x 48 in.). The top shall be basswood or equivalent and capable of being tilted through an angle of 50 degrees. Three adjustable height drafting stools with upholstered seats and backs shall also be provided.
  - e. Three freestanding file cabinets with locks, legal size, four drawers, with an Underwriter's Laboratories insulated file device 350 degrees one hour rating.
  - f. Fifteen folding chairs or stackable chairs.
  - g. One equipment cabinet with lock of minimum dimension of 1100mm (44 in.) x 600mm (24in.) x 750mm (30 in.) deep. The walls shall be of steel with a 2mm minimum thickness with concealed hinges and enclosed lock constructed in such a manner as to prevent entry by force. The cabinet assembly shall be permanently attached to a structural element of the office in a manner to prevent theft of the entire cabinet.
  - h. One office-style refrigerator with a minimum size of 0.4 cubic meters (16 cu ft) with a freezer unit.
  - i. Four electric desk type tape printing calculators and four pocket scientific notation calculators with a 1000 hour battery life.
  - j. Five telephones, including at least two cordless phones, and three telephone answering machines (or voice mail feature on 3 phone lines). One telephone shall have speaker phone capability. Six telephone lines shall be provided including one for the fax machine and two for modems. Additional features on the three voice lines shall include caller ID and 3-way calling.

- k. One photocopier machine (including maintenance and operating supplies) capable of copying field books. Supply paper and trays for 215mm x 280mm (8-1/2 in. x 11 in.); 215mm x 355mm (8-1/2 in. x 14 in.); and 280mm x 430mm (11 in. x 17 in.) sizes. The copier shall be complete with automatic feed and sorter.
  - l. One telecommunication fax machine, including maintenance and operating supplies. The fax machine shall use plain paper. One table for the fax machine.
  - m. One electric water cooler dispenser.
  - n. One first-aid cabinet, fully equipped.
  - o. Two dry-erase marker boards minimum size 700 mm x 1.0 m (28 in. x 40 in.) with markers and erasers.
  - p. Four bulletin boards minimum size 700 mm x 1.0 m (28 in. x 40 in.)
  - q. One microwave oven.
  - r. One conference table or group of tables which can be arranged together to create a table that will seat at least 15 people.
  - s. One storage cabinet minimum size 450 mm (18 in.) wide x 300 mm deep (12 in.) x 1500 mm (60 in.) with four adjustable shelves.
  - t. Bookshelves - A minimum of 300mm (12 in.) deep and a minimum total available length of 30 m (100 ft).
5. The office space shall be maintained and kept in a clean condition, and free of insects and rodents, at all times. The Contractor shall provide janitorial and/or cleaning service a minimum of once a week. Windows should be cleaned as directed by the Engineer. Maintenance shall include, but not be limited to, paper towels, soap, toilet paper, and other necessary supplies. No additional compensation will be allowed for providing this service, but it shall be included in the item ENGINEER'S FIELD OFFICE, TYPE A (SPECIAL).
6. An electronic security system that will respond to any breach of exterior doors and windows with an on-site alarm shall be provided. The Contractor shall be responsible for security of the field office building and is liable for damages incurred as a result of vandalism, theft, and other criminal activities. Broken windows shall be replaced at no additional cost.
7. The Contractor will be responsible for systems maintenance and repairs, which shall include the heating, cooling, sanitary, and water distribution systems and light bulb replacements.
8. Fire extinguishers meeting the local municipalities' requirements shall be provided.
9. Window shades or blinds shall be provided for all windows, as directed by the Engineer.

10. The Contractor shall be responsible for snow removal from parking areas and sidewalks surrounding the building.
11. The Contractor shall pay the cost of any building or equipment inspections by the local municipality. The Contractor shall also pay all costs to comply with the maintenance type inspection findings.
12. The Contractor shall provide one subscription to high speed or broadband internet service. The Engineer will install this service on his (or his consultant's) desktop computer for use in the field office.

Basis of Payment. The building, fully equipped as specified herein and accepted by the Engineer, will be paid for on a monthly basis until the building is released by the Engineer. The Contractor will be paid the contract bid price each month, provided the building is maintained, equipped, and utilities furnished. The building, fully equipped and maintained as specified herein, will be paid for at the contract unit price per calendar month or fraction thereof for ENGINEER'S FIELD OFFICE, TYPE A, (SPECIAL). This price shall include all utility costs and shall reflect the salvage value of the building, equipment and furniture which becomes the property of the Contractor after release by the Engineer, except that the Department will pay that portion of each monthly long distance telephone bill in excess of \$50.

The Contractor shall be responsible for the repair and maintenance of the field office. No extra payment will be made for systems maintenance, repairs or for damages incurred as a result of vandalism, theft or other criminal activities.

#### **FORMED CONCRETE REPAIR**

Effective: October 10, 1995

Revised: February 7, 2005

This work consists of removing and disposing of all deteriorated concrete and replacing it with new concrete at the locations specified on the plans and as directed by the Engineer. The concrete shall have a minimum compressive strength as specified on the plans but not less than that specified for class SI concrete. This work shall also include the construction of necessary formwork and scaffolding and installing supplemental reinforcement bars and expansion bolts as directed by the Engineer.

The materials and construction methods shall conform to the applicable provisions of Sections 503 and 508 of the Standard Specifications. The coarse aggregate for Class SI concrete shall be gradation CA 16 only, the cement factor shall be a minimum 395 kg/ cu m (6.65 cwt/ cu yd), and a high range water-reducing admixture shall be used to obtain a 125-175 mm (5-7 in.) slump.

Construction Methods. The areas to be repaired shall have all loose, unsound concrete removed completely by the use of an electric chisel or other mechanical tools approved by the Engineer. All reinforcing bars within the repair area shall be undercut to a depth that will permit a minimum of 25 mm (1 in.) of plastic concrete under the reinforcing bars. When removing the existing concrete the Contractor shall provide a 25 mm (1 in.) deep saw cut along the outside edges of the repair area.

Existing reinforcement bars shall be cleaned by sandblasting. 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 inkind reinforcement bars. New bars shall be lapped a minimum of 32 bar diameters to existing bars. An approved "squeeze type" mechanical bar splicer capable of developing in tension at least 125 percent of the yield strength of the existing bar shall be used when it is not feasible to provide the minimum bar lap. No welding of bars will be permitted. The furnishing and replacing of supplemental reinforcement bars shall be included in this item.

The formwork shall provide a smooth and uniform concrete finish most nearly matching the existing surface of the concrete structures. Formwork shall be completely 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 shall use exterior mechanical vibration, as approved by the Engineer, to release air pockets that may be entrapped.

Prior to placing the new concrete the Contractor shall prepare the surface of the existing concrete against which the new concrete is placed by sand, air or water blasting. The surface shall be free of oil, dirt and loose concrete. Just prior to concrete placement the surface shall be thoroughly wetted to a saturated surface dry condition or as directed by the Engineer.

Curing shall be done according to the applicable portions of Article 1020.13 of the Standard Specifications and as directed by the Engineer.

All areas of repair, under this item shall have a minimum concrete thickness of 25 mm (1 in.).

The Contractor shall anchor the new concrete to the existing concrete with 20 mm (3/4 in.) diameter expansion hook bolts for all overhead repair areas and wherever the depth of concrete removal is greater than 205 mm (8 in.). The expansion hook bolts shall be spaced at 380 mm (15 in.) maximum centers both vertically and horizontally. The furnishing and placing of the expansion hook bolts shall be included in this item.

At all locations, where the removal of deteriorated concrete reaches a total depth including all sides greater than 300 mm (12 in.) or half the depth of the member, the Bureau of Bridges and Structures shall be contacted for structural evaluation.

Method of Measurement. The completed formed concrete repair, accepted by the Engineer, will be measured in square meters (square feet). The computed area will include the formed and/or finished surface areas.

Basis of Payment. The above specified work shall be paid for at the contract unit prices per square meter (square foot) for FORMED CONCRETE REPAIR (DEPTH GREATER THAN 125 mm (5 in.)) and/or FORMED CONCRETE REPAIR (DEPTH EQUAL TO OR LESS THAN 125 mm (5 in.)) which prices shall include all labor and materials necessary to complete the work in place.

## **DRILLED SHAFTS**

Effective: May 1, 2001

Revised: February 7, 2005

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

Submittals. The Contractor shall submit the following:

(a) Qualifications. At the time of the preconstruction conference, the Contractor shall provide the following documentation:

- (1) A list containing at least 3 projects completed within the 3 years prior to this project's bid date which the Contractor performing this work has installed drilled shafts of similar diameter, length and site conditions to those shown in the plans. The list of projects shall contain names and phone numbers of owner's representatives who can verify the Contractor's participation on those projects.
- (2) Name and experience record of the drilled shaft supervisor, responsible for all facets of the shaft installation, and the drill operator(s) who will be assigned to this project. The supervisor and driller shall each have a minimum of 3 years experience in the construction of drilled shafts.
- (3) A signed statement that the drilled shaft supervisor has inspected both the project site and all the subsurface information available. In addition to the subsurface information in the contract documents, rock core specimens and/or geotechnical reports, when available, should be requested for evaluation.

(b) Installation Procedure. A submittal detailing the installation procedure will be required for all drilled shafts, unless directed otherwise by the Engineer. The Contractor, meeting the above qualifications, shall prepare the installation procedure, addressing all items shown below and will be responsible for directing all aspects of the shaft construction. The installation procedure shall be submitted to the Engineer at least 45 days prior to drilled shaft construction and shall address each of the following items:

- (1) List of proposed equipment to be used including cranes, drill rigs, augers, belling tools, casing, core barrels, bailing buckets, final cleaning equipment, slurry equipment, tremies or concrete pumps, etc.
- (2) Details of the overall construction operation sequence, equipment access, and the sequence of individual shaft construction within each substructure bent or footing group. The submittal shall address the Contractor's proposed time delay and/or the minimum concrete strength necessary before initiating a shaft excavation adjacent to a recently installed drilled shaft.
- (3) A step by step description of how the Contractor anticipates the shaft excavation to be advanced based on their evaluation of the subsurface data and conditions expected to be encountered. This sequence shall note the method of casing advancement, anticipated casing lengths, tip elevations and diameters, the

excavation tools used and drilled diameters created. The Contractor shall indicate whether wet or dry drilling conditions are expected or if the water table will be sealed from the excavation.

- (4) When slurry is proposed, details covering the measurement and control of the hardness of the mixing water, agitation, circulation, de-sanding, sampling, testing and chemical properties of the slurry shall be submitted.
- (5) Method(s) and sequence proposed for the shaft cleaning operation as well as recommendations on how the shaft excavation will be inspected under the installation conditions anticipated.
- (6) Details of reinforcement placement including cage centralization devices to be used and method to maintain proper elevation and plan location of cage within the shaft excavation during concrete placement. The method(s) of adjusting the cage length if rock is encountered at an elevation other than as estimated in the plans.
- (7) Details of concrete placement including proposed operational procedures for free fall, tremie or pumping methods. The sequence and method of casing removal shall also be stated along with the top of pour elevation, and method of forming through water above streambed.
- (8) The proposed concrete mix design(s).

The Engineer will evaluate the drilled shaft installation plan and notify the Contractor of acceptance, or if additional information is required, or if there are concerns with the installation's effect on the existing or proposed structure(s).

Materials. The materials used for the construction of the drilled shaft shall satisfy the following requirements:

- (a) The drilled shaft portland cement concrete shall be according to Section 1020, except the mix design shall be as follows:
  - (1) A Type I or II cement shall be used at 395 kg/cu m (665 lb/cu yd). When specified in the plans that soil and ground water sulfate contaminates exceed 500 parts per million, a Type V cement shall be required.
  - (2) Class C or F fly ash may replace Type I or II cement. The cement replacement shall not exceed 15 percent by mass (weight) at a minimum replacement ratio of 1.5:1. The fly ash shall not be used in combination with ground granulated blast-furnace slag.
  - (3) Grade 100 or 120 ground granulated blast-furnace slag may replace Type I or II cement. The cement replacement shall not exceed 25 percent by mass (weight) at a minimum replacement ratio of 1:1. The ground granulated blast-furnace slag shall not be used in combination with fly ash.

- (4) The maximum water/cement ratio shall be 0.44.
- (5) The mortar factor shall be a value which produces a coarse aggregate content comprising between 55 and 65 percent of total aggregate by mass (weight).
- (6) The slump at point of placement shall be 175 mm  $\pm$  25 mm (7  $\pm$  1 in.). If concrete is placed to displace drilling fluid, or against temporary casing, the slump shall be 200 mm  $\pm$  25 mm (8  $\pm$  1 in.) at point of placement. The concrete mix shall be designed to remain fluid throughout the anticipated duration of the pour plus 1 hour.
- (7) An air entraining admixture shall be required and the air content range shall be 4.0 to 7.0 percent.
- (8) The minimum compressive strength shall be 27,500 kPa (4000 psi) at 14 days. The minimum flexural strength shall be 4,650 kPa (675 psi) at 14 days.
- (9) A retarding admixture shall be required.
- (10) A water-reducing or high range water-reducing admixture shall be required.
- (11) An accelerating admixture may be used with the permission of the Engineer in extraordinary situations.
- (12) The coarse aggregate shall be a CA 13, CA 14, CA 16 or a blend of these gradations. The fine aggregate shall consist of sand only according to Article 1003.01(a).

At the Engineers discretion, and at no additional cost to the Department, the Contractor may be required to conduct a minimum 0.76 cu m (1 cu yd) trial batch to verify the mix design.

- (b) The sand-cement grout mix used to fill any visible gaps, which may exist between the permanent casing and either the drilled excavation or temporary casing, shall be as follows:
  - (1) A Type I or II cement shall be used at 110 kg/cu m (185 lb/cu yd). When specified in the plans that soil and ground water sulfate contaminates exceed 500 parts per million, a Type V cement shall be required. The cement shall be according to Section 1001.
  - (2) The fine aggregate shall be according to Articles 1003.01 and 1003.02.
  - (3) The water shall be according to Section 1002.
  - (4) The maximum water shall be sufficient to provide a flowable mixture with a typical slump of 254 mm (10 in.).
- (c) Reinforcement shall be according to Section 508 of the Standard Specifications.
- (d) Drilling slurry, when required, shall consist of a polymer or mineral base material. Mineral slurry shall have both a mineral grain size that will remain in suspension with sufficient



viscosity and gel characteristics to transport excavated material to a suitable screening system. The percentage and specific gravity of the material used to make the suspension shall be sufficient to maintain the stability of the excavation and to allow proper concrete placement. For polymer slurry, the calcium hardness of the mixing water shall not exceed 100 mg/L.

- (e) Permanent casing, when required, shall be fabricated from steel satisfying ASTM A252 Grade 2, produced by electric seam, butt, or spiral welding to satisfy the outside diameter(s) and lengths shown in the contract plans or as shown in the Contractor's installation procedure. The minimum wall thickness shall be as required to resist the anticipated installation and dewatering stresses, as determined by the Contractor, but in no case less than 6 mm (1/4 in.).

Equipment. The drilling equipment shall have adequate capacity, including power, torque and down thrust, to create a shaft excavation of the maximum diameter specified to a depth of 20 percent beyond the depths shown on the plans. Standby equipment of sufficient capacity shall be available so that there will be no delay in placing of the concrete once the operation has started. Concrete equipment shall be according to Article 1020.03 of the Standard Specifications.

Construction Requirements. Excavation for drilled shaft(s) shall not proceed until written authorization is received from the Engineer. The Contractor shall furnish an installation log for each shaft installed. Excavation by blasting shall not be permitted unless authorized in writing by the Engineer.

No shaft excavation shall be made within 4 shaft diameters center to center of a shaft with concrete that has a compressive strength less than 10,342 kPa (1500 psi) unless otherwise approved in the Contractor's installation procedure. The site-specific soil strengths and installation methods selected will determine the actual required minimum spacing, if any, to address vibration and blow out concerns.

Materials removed or generated from the shaft excavations shall be disposed of by the Contractor according to Article 202.03 of the Standard Specifications.

The Contractor's methods and equipment shall be suitable for the anticipated conditions and the following requirements noted below:

- (a) Construction Tolerances. The following construction tolerances shall apply to all drilled shafts unless otherwise stated in the contract documents:
  - (1) The center of the drilled shaft shall be within 75 mm (3 in.) of the plan station and offset at the top of the shaft.
  - (2) The center of the reinforcement cage shall be within 38 mm (1 1/2 in.) of plan station and offset at the top of the shaft.
  - (3) The out of vertical plumbness of the shaft shall not exceed 1.5 percent.
  - (4) The out of vertical plumbness of the shaft reinforcement cage shall not exceed 0.83 percent.

- (5) The top of the reinforcing steel cage shall be no more than 25 mm (1 in.) above and no more than 75 mm (3 in.) below the plan elevation.
  - (6) The top of the shaft shall be no more than 25 mm (1 in.) above and no more than 75 mm (3 in.) below the plan elevation.
  - (7) Excavation equipment and methods used to complete the shaft excavation shall have a nearly planar bottom. The cutting edges of excavation equipment used to create the bottom of shafts in rock shall be normal to the vertical axis of the shaft within a tolerance of 6.25 percent.
- (b) Construction Methods. The construction of drilled shafts may involve the use of one or more of the following methods to support the excavation during the various phases of shaft drilling, cleaning and concrete placement dependent on the site conditions encountered. The following are general descriptions indicating the conditions when these methods may be used:
- (1) Dry Method. The dry method consists of drilling the shaft excavation, removing accumulated water and loose material from the excavation, placing the reinforcing cage, and concrete in a predominately dry excavation. This method shall be used only at sites where the groundwater and soil conditions are suitable to permit the drilling and dewatering of the excavation without causing excessive water infiltration, boiling, squeezing, or caving of the shaft side walls. This method allows the concrete placement by tremie or concrete pumps, or if the excavation can be dewatered, the concrete can be placed by free fall within the limits specified for concrete placement.
  - (2) Wet Method. The wet construction method may be used at sites where dewatering the excavation would cause collapse of the shaft sidewalls or when the volume and head of water flowing into the shaft is likely to contaminate the concrete during placement resulting in a shaft defect. This method uses water or slurry to maintain stability of the shaft perimeter while advancing the excavation. After the excavation is completed, the water level in the shaft is allowed to seek equilibrium, the base is cleaned, the reinforcing cage is set and the concrete is discharged at the base using a tremie pipe or concrete pump, displacing the drilling fluid upwards.
  - (3) Temporary Casing Method. Temporary casing shall be used when either the wet or dry methods provide inadequate support to prevent sidewall caving or ensure excessive deformation of the hole. Temporary casing may also be used to reduce the flow of water into the excavation to allow dewatering, adequate cleaning and inspection, or to insure proper concrete placement. Temporary casing left in place may constitute a shaft defect; no temporary casing will be allowed to remain permanently in place without the specific approval of the Engineer.

Before the temporary casing is broken loose, the level of concrete in the casing shall be a minimum of 1.5 m (5 ft) above the bottom of the casing. After being broken loose and as the casing is withdrawn, additional concrete shall be added to maintain sufficient head so that water and soil trapped behind the casing can be displaced upward and discharged at the ground surface without contaminating the concrete in the shaft or at the finished construction joint.

- (4) Permanent Casing Method. When called for on the plans or proposed as part of the Contractor's accepted installation procedure, the Contractor shall install a permanent casing of the diameter, length, thickness and strength specified. When permanent casings are used, the lateral loading design requires intimate contact between the casing and the surrounding soils. If the installation procedure used to set the permanent casing results in annular voids between the permanent casing and the drilled excavation, the voids shall be filled with a sand-cement grout to maintain the lateral load capacity of the surrounding soil, as assumed in the design. No permanent casing will be allowed to remain in place beyond the limits shown on the plans without the specific approval of the Engineer.
- (5) Removable Forms. When the shaft extends above streambed through a body of water and permanent casing is not shown, the portion above the streambed shall be formed with removable casings, column forms, or other forming systems as approved by the Engineer. The forming system shall not scar or spall the finished concrete or leave in place any forms or casing within the removable form limits as shown on the plans unless approved as part of the installation procedure. The forming system shall not be removed until the concrete has attained a minimum compressive strength of 17,237 kPa (2500 psi) and cured for a minimum of 72 hours. For shafts extending through water, the concrete shall be protected from water action after placement for a minimum of 7 days.
- (c) Slurry. If the Contractor proposes to use a method of slurry construction, it shall be submitted with the installation plan. During construction, the level of the slurry shall be maintained at a height sufficient to prevent caving of the hole. In the event of a sudden or significant loss of slurry to the hole, the construction of that foundation shall be stopped and the shaft excavation backfilled or supported by temporary casing, until a method to stop slurry loss, or an alternate construction procedure has been approved by the Engineer.
- (d) Obstructions. Obstructions shall be defined as any object (such as but not limited to, boulders, logs, old foundations etc.) that cannot be removed with normal earth drilling procedures but requires special augers, tooling, core barrels or rock augers to remove the obstruction. When obstructions are encountered, the Contractor shall notify the Engineer and upon concurrence of the Engineer, the Contractor shall begin working to core, break up, push aside, or remove the obstruction. Lost tools or equipment in the excavation as a result of the Contractor's operation shall not be defined as obstructions and shall be removed at the Contractor's expense.
- (e) Top of Rock. The actual top of rock will be defined as the point when material is encountered which can not be drilled with a conventional earth auger and/or underreaming tool, and requires the use of special rock augers, core barrels, air tools, blasting or other methods of hand excavation.
- (f) Sidewall overreaming. Sidewall overreaming shall be required when the sidewall of the hole is determined by the Engineer to have either softened due to the excavation methods, swelled due to delay in concreting, or degraded because of slurry cake buildup. It may also be required to correct a shaft excavation which has been drilled out of tolerance.

Overreaming thickness shall be a minimum of 13 mm (1/2 in.). Overreaming may be accomplished with a grooving tool, overreaming bucket or other approved equipment. Any extra concrete needed as a result of the overreaming shall be furnished and installed at the Contractor's expense.

- (g) Excavation Inspection. The Contractor shall be responsible for verification of the dimensions and alignment of each shaft excavation as directed by the Engineer. Unless otherwise specified in the contract documents, the Contractor's cleaning operation shall be adjusted so that a minimum of 50 percent of the base of each shaft shall have less than 13 mm (1/2 in.) of sediment or debris at the time of placement of the concrete. The maximum depth of sediment or any debris at any place on the base of the shaft shall not exceed 38 mm (1 1/2 in.).

Shaft cleanliness will be determined by the Contractor using the methods as submitted in their installation procedure. Visual inspection coupled with the use of a weighted tape may also be used to confirm adequate cleanliness.

- (h) Design Modifications. If the top of rock elevation differs from that shown on the plans by more than 10 percent of the length of the shaft above the rock, the Engineer shall be contacted to determine if any drilled shaft design changes may be required. In addition, if the type of soil or rock encountered is not similar to that shown in the subsurface exploration data, the Contractor may be required to extend the drilled shaft length(s) beyond those specified in the plans. In either case, the Engineer will determine if revisions are necessary and the extent of the modifications required.

- (i) Reinforcement Cage Construction and Placement. The shaft excavation shall be cleaned, inspected and accepted prior to placing the reinforcement cage. The reinforcement cage shall be completely assembled prior to drilling and be ready for adjustment in length as required by the conditions encountered. The cage shall be lifted using multiple point sling straps or other approved methods to avoid cage distortion or stress. Additional cross frame stiffeners may also be required for lifting or to keep the cage in proper position during lifting and concrete placement.

The Contractor shall attach suitable centralizers to keep the cage away from the sides of the shaft excavation and ensure that at no point will the finished shaft have less than the minimum concrete cover(s) shown on the plans. The cage centralizers or other approved non-corrosive spacing devices shall be used at sufficient intervals (near the bottom and at intervals not exceeding 3 m (10 ft) throughout the length of the shaft) to ensure proper cage alignment and clearance for the entire shaft.

If the top of rock encountered is deeper than estimated in the plans, and/or if the conditions differ such that the length of the shaft is increased, additional longitudinal bars shall be either mechanically spliced or lap spliced to the lower end of the cage and confined with either hoop ties or spirals to provide the additional length. If the additional shaft length is less than the lap splice shown, subject to the approval of the Engineer, a mechanical splice may be used in lieu of the lap splice in order to take advantage of or utilize that lap length in the extension of the shaft reinforcement. The Contractor shall have additional reinforcement available or fabricate the cages with additional length as necessary to make the required adjustments in a timely manner as dictated by the encountered conditions. The additional

reinforcement may be non-epoxy coated at the option of the Contractor. Any reinforcement fabricated in advance but not incorporated into the installed shaft(s) shall not be paid for but shall remain the property of the Contractor.

- (j) Concrete placement. Concrete work shall be performed according to the applicable portions of Section 503 of the Standard Specifications and as specified herein.

Concrete shall be placed as soon as possible after reinforcing steel is set and secured in proper position. The pour shall be made in a continuous manner from the bottom to the top elevation of the shaft as shown on the contract plan or as approved in the Contractor's installation procedure. Concrete placement shall continue after the shaft excavation is full and until good quality, uncontaminated concrete is evident at the top of shaft. The elapsed time from the beginning of concrete placement in the shaft to the completion of the placement shall not exceed 2 hours. The Contractor may request a longer placement time provided the concrete mix maintains the minimum slump requirements over the longer placement time as demonstrated by trial mix and slump loss tests. Concrete shall be placed either by free fall, or through a tremie or concrete pump subject to the following conditions:

- (1) The free fall placement shall only be permitted in shafts that can be dewatered to ensure less than 75 mm (3 in.) of standing water exist at the time of placement without causing side wall instability. The maximum height of free fall placement shall not exceed 18.3 m (60 ft). Concrete placed by free fall shall fall directly to the base without contacting either the rebar cage or hole sidewall. Drop chutes may be used to direct concrete to the base during free fall placement.

Drop chutes used to direct placement of free fall concrete shall consist of a smooth tube of either one continuous section or multiple pieces that can be added and removed. Concrete may be placed through either a hopper at the top of the tube or side openings as the drop chute is retrieved during concrete placement. The drop chute shall be supported so that the free fall does not exceed 18.3 m (60 ft) at all times and to ensure the concrete does not strike the rebar cage. If placement cannot be satisfactorily accomplished by free fall in the opinion of the Engineer, the Contractor shall use either tremie or pumping to accomplish the pour.

- (2) Tremies shall consist of a tube of sufficient length, weight, and diameter to discharge the initial concrete at the base of the shaft. The tremie shall be according to Article 503.08 of the Standard Specifications and contain no aluminum parts that may have contact with the concrete. The inside and outside surfaces of the tremie shall be clean and smooth to permit both flow of concrete and unimpeded withdrawal during concrete placement.
- (3) Concrete pumps: Pumps and lines may be used for concrete placement and shall have a minimum 100 mm (4 in.) diameter.

The tremie or pump lines used for wet method concrete placement shall be watertight and not begin discharge until placed within 250 mm (10 in.) of the shaft base. Valves, bottom plates or plugs may be used only when they can be removed from the excavation or be of a material approved by the Engineer that will not cause a defect in the shaft if not removed. The discharge end shall be immersed at least

1.5 m (5 ft) in concrete at all times after starting the pour. Sufficient concrete head shall be maintained in the tremie at all times to prevent water or slurry intrusion in the shaft concrete.

If at any time during the concrete pour in the "wet" hole, the tremie or pump line orifice is removed from the fluid concrete and discharges through drilling fluid or water above the rising concrete level, the shaft may be considered defective.

Vibration of concrete is not recommended when placed while displacing drilling fluid or water. In dry excavations, vibration is allowed only in the top 3 m (10 ft) of the shaft.

Conformity with Contract. In addition to Article 105.03, the Contractor shall be responsible for correcting all out of tolerance excavations and completed shafts as well as repairing any defects in the shaft to the satisfaction of the Engineer at no additional cost to the Department. No time extensions will be allowed to repair or replace unacceptable work. When a shaft excavation is completed with unacceptable tolerances, the Contractor will be required to submit for approval his/her proposed corrective measures. Any proposed design modification with computations submitted by the Contractor shall be signed and sealed by an Illinois licensed Structural Engineer.

Method of Measurement. The items Drilled Shaft in Soil and Drilled Shaft in Rock, will be measured for payment and the length computed in meters (feet) for all drilled shafts installed according to the plans, specifications, and accepted by the Engineer. The length shall be measured at each shaft. The length in soil will be defined as the difference in elevation between the top of the drilled shaft shown on the plans, or as installed as part of the Contractor's installation procedure, and the bottom of the shaft or the top of rock (when present) whichever is higher. The length in rock will be defined as the difference in elevation between the measured top of rock and the bottom of the shaft. When permanent casing is installed as specified on the plans, it will be measured in meters (feet) and shall be the length of casing installed.

Basis of Payment. This work will be paid for at the contract unit price per meter (foot) for DRILLED SHAFT IN SOIL, and/or DRILLED SHAFT IN ROCK, of the diameter(s) specified. The price shall be payment in full for all labor, materials, equipment, and services necessary to complete the work as specified. When the shaft is detailed with a belled base, furnishing and installing it shall not be paid for separately but shall be included in the cost of the appropriate drilled shaft item(s).

When permanent casing is furnished and installed as specified, it will be paid for at the contract unit price per meter (foot) for PERMANENT CASING. Permanent casing installed at the Contractor's option shall not be included in this item, but shall be considered as included in the appropriate drilled shaft item(s) above.

Obstruction mitigation shall be paid for according to Article 109.04 of the Standard Specifications.

No additional compensation, other than noted above, will be allowed for removing and disposing of excavated materials, for furnishing and placing concrete, bracing, lining, temporary casings placed and removed or left in place, for grouting of any voids, or for any excavation made or concrete placed outside of the plan diameter(s) of the shaft(s) specified.

Reinforcement bars, spirals and ties shall be as specified and paid for under the items, REINFORCEMENT BARS or REINFORCEMENT BARS EPOXY COATED, according to Section 508 of the Standard Specifications.

## **DRAINAGE SYSTEM**

Effective : June 10, 1994

Revised: January 1, 2002

Description. This work shall consist of furnishing and installing a bridge drainage system as shown on the plans, including all piping, fittings, support brackets, inserts, bolts, and splash blocks when specified.

Material. The pipe and fittings shall be reinforced fiberglass according to ASTM D 2996 RTRP with a 207 MPa (30,000 psi) minimum short-time rupture strength hoop tensile stress. The reinforced fiberglass shall also have an apparent stiffness factor at 5 percent deflection exceeding 22.6 cu mm-kPa (200 cu in.-lbf/sq in) and a minimum wall thickness of 2.54 mm (0.10 in.). All pipe supports and associated hardware shall be hot dip galvanized according to AASHTO M 232. The fiberglass pipe and fittings furnished shall be pigmented through out, or have a resin-rich pigmented exterior coat, specifically designed for overcoating fiberglass, as recommended by the manufacturer. The color shall be as specified by the Engineer. The resin in either case shall have an ultraviolet absorber designed to prevent ultraviolet degradation. The supplier shall certify the material supplied meets or exceeds these requirements.

Installation. All connections of pipes and fittings shown on the plans to facilitate future removal for maintenance cleanout or flushing shall be made with a threaded, gasketed coupler or a bolted gasketed flange system. Adhesive bonded joints will be permitted for runs of pipe between such connections. The end run connection shall feature a minimum nominal 150 mm (6 in.) female threaded fiberglass outlet. Straight runs may utilize a 45 degree reducing saddle bonded to the pipe. The female outlet shall be filled with a male threaded PVC plug.

Runs of pipe shall be supported at spacings not exceeding those recommended by the manufacturer of the pipe. Supports that have point contact or narrow supporting areas shall be avoided. Standard slings, clamps, clevis hangers and shoe supports designed for use with steel pipe may be used. A minimum strap width for hangers shall be 40 mm (1 1/2 in.) for all pipe under 300 mm (12 in.) in diameter and 50 mm (2 in.) for diameters 300 mm (12 in.) or greater. Straps shall have 120 degrees of contact with the pipe. Pipes supported on less than 120 degrees of contact shall have a split fiberglass pipe protective sleeve bonded in place with adhesive.

All reinforced fiberglass pipe, fittings, and expansion joints shall be handled and installed according to guidelines and procedures recommended by the manufacturer or supplier of the material.

Basis of Payment. This work will be paid for at the contract lump sum price for DRAINAGE SYSTEM.

## **FLOATING BEARINGS**

Effective: October 13, 1988

Revised: June 21, 2004

Description. This work shall consist of furnishing and installing floating (pot type) bearing assemblies as shown on the plans.

Floating bearings shall be the following types:

Fixed:	Allows rotation in any direction and fixed against translation.
Guided Expansion:	Allows rotation in any direction and translation in limited directions.
Non-Guided Expansion:	Allows rotation in any direction and translation in any direction.

The floating bearings shall be of the type specified and designed for the loads shown on the plans. The design of the top and bottom bearing plates are based on detail assumptions which are not applicable to all suppliers and may require modifications depending on the supplier chosen by the Contractor. The overall depth dimension for the floating bearings shall be as specified on the plans. The horizontal dimensions shall be limited to the available bearing seat area. Any modifications required to accommodate the bearings chosen shall be submitted to the Engineer for approval prior to ordering materials. Modifications required shall be made at no additional cost to the State. Inverted pot bearing configurations will not be permitted.

The Contractor shall comply with all manufacturer's material, fabrication and installation requirements specified.

Submittals. Shop drawings shall be submitted to the Engineer for approval according to Article 105.04 of the Standard Specifications. In addition the Contractor shall furnish certified copies of the bearing manufacturer's test reports on the physical properties of the component materials for the bearings to be furnished and a certification by the bearing manufacturer stating the bearing assemblies furnished conform to all the requirements shown on the plans and as herein specified. Submittals with insufficient test data and supporting certifications will be rejected.

Materials. The materials for the floating bearing assemblies shall be according to the following:

- (a) Elastomeric Materials. The rubber disc shall be according to Article 1083.02 of the Standard Specifications for "55 Duro" rubber.
- (b) Polytetrafluoroethylene (TFE) Material. The TFE material shall be according to Article 1083.03 of the Standard Specifications.
- (c) Stainless Steel Sheets: The stainless steel sheets shall be of the thickness specified and shall be according to ASTM A 240, Type 302 or 304. The sliding surface shall be polished to a bright mirror finish less than 510 nm (20 micro-in.) root mean square.
- (d) Structural Steel. All structural steel used in the bearing assemblies shall be according to AASHTO M 270M Grade 345 (M 270, Grade 50), unless otherwise specified.
- (e) Threaded studs. The threaded stud, when required, shall conform to the requirements of AASHTO M 164M (M 164).



Fabrication and Installation of Floating Bearings. The bearings shall be complete factory-produced assemblies. They shall provide for rotation in all directions and for sliding, when specified, in directions as indicated on the plans. All bearings shall be furnished as a complete unit from one manufacturing source. All material used in the manufacture shall be new and unused with no reclaimed material incorporated into the finished assembly.

When directed by the Engineer, the manufacturer shall furnish random samples of component materials used in the bearings for testing by the Department.

The bearings furnished shall be manufactured so that the rotational capability is provided by an assembly having a rubber disc of proper thickness, confined in a manner so it behaves like a fluid. The disc shall be installed, with a snug fit, into a steel cylinder and confined by a tight fitting piston. The outside diameter of the piston shall be no more than 750 microns (0.03 in.) less than the inside diameter of the cylinder at the interface level of the piston and rubber disc. The sides of the piston shall be beveled. TFE sheets shall be attached to the top and bottom of the rubber disc to facilitate rotation of the rubber disc. Suitable brass sealing rings shall be provided to prevent any extrusion between piston and cylinder.

The translation capability for both guided and non-guided expansion bearings shall be provided by means of a polished stainless steel sliding plate that bears on a TFE sheet bonded and recessed to the top surface of the piston. The sliding element of expansion bearings shall be restrained against movement in the fixed direction by exterior guide bars capable of resisting the horizontal forces or 20 percent of the vertical design load on the bearing applied in any direction, whichever is greater. The sliding surfaces of the guide bar shall be of TFE sheet and stainless steel. Guiding off of the fixed base, or any extension of it, will not be permitted.

Structural steel bearing plates shall be fabricated according to Article 505.04(I) of the Standard Specifications. Prior to shipment the exposed edges and other exposed portions of the structural steel bearing plates shall be cleaned and painted according to Articles 506.03 and 506.04 of the Standard Specifications. Painting shall be with the paint specified for shop painting of structural steel. During cleaning and painting the stainless steel, TFE sheet and neoprene shall be protected from abrasion and paint.

TFE sheets shall be bonded to steel under factory controlled conditions using heat and pressure for the time required to set the epoxy adhesive used. The TFE sheet shall be free from bubbles and the sliding surface shall be burnished to an absolutely smooth surface.

The steel piston and the steel cylinder shall each be machined from a solid piece of steel. The steel base cylinder shall be either integrally machined, recessed into with a snug fit, or continuously welded to its bottom steel bearing plate.

Packaging. Each floating bearing assembly shall be fully assembled at the manufacturing plant and delivered to the construction site as complete units. The assemblies shall be packaged, crated or wrapped so the assemblies will not be damaged during handling, transporting and shipping. The bearings shall be held together with removable restraints so sliding surfaces are not damaged.

Centerlines shall be marked on both top and base plates for alignment in the field. The bearings shall be shipped in moisture-proof and dust-proof covers.

Testing. Each floating bearing assembly shall be load tested to 150 percent of the rated capacity at a 2 percent slope by the manufacturer prior to shipment. The load of 150 percent of the rated capacity shall be maintained for at least 30 minutes. Any bearings showing failure of the sealing rings or other component parts after this load test shall be replaced. The Contractor shall furnish to the Department a notarized certification from the bearing manufacturer stating the floating bearings have been load tested as specified. The Department reserves the right to perform the specified load test on one or more of the furnished bearings. If the tested bearing shows failure it shall be replaced and the remaining bearings shall be load tested for acceptance at the Contractor's expense.

Shear Inhibited Disc Type Bearing. Shear Inhibited Disc type bearing assemblies may be used in lieu of the Floating (Pot type) Bearing assemblies at the option of the Contractor. All requirements specified for floating bearings shall be applicable for the shear inhibited disc type bearings except as follows:

- (a) The Structural Element shall be restricted from shear by the pin and ring design and need not be completely confined as with the Floating Bearing design.
- (b) The Structural Element shall be molded of Polyether Urethane compound and shall be monolithic. The physical properties of the Polyether Urethane shall be according to one of the following requirements:

PHYSICAL PROPERTY	ASTM TEST METHOD	REQUIREMENTS			
		COMPOUND A		COMPOUND B	
		MIN.	MAX.	MIN.	MAX.
Hardness, Type D durometer	D 2240	46	50	60	64
Tensile Stress, kPa (psi) At 100% elongation	D 412	10,350 kPa (1500 psi)	--	13,800 kPa (2000 psi)	--
Tensile Stress, kPa (psi) At 300% elongation	D 412	19,300 kPa (2800 psi)	--	25,500 kPa (3700 psi)	--
Tensile Strength, kPa (psi)	D 412	27,600 kPa (4000 psi)	--	34,500 kPa (5000 psi)	--
Ultimate Elongation, %	D 412	300	--	220	--
Compression Set 22 hr. at 70 °C (158 °F), %	D 395	--	40	--	40

Bearings shall be erected according to Article 505.08(f) of the Standard Specifications. Exposed edges and other exposed portions of the structural steel plates shall be field painted as specified for Structural Steel.

Basis of Payment. This work will be paid for at the contract unit price each for FLOATING BEARINGS, FIXED; FLOATING BEARINGS, GUIDED EXPANSION; or FLOATING BEARINGS, NON-GUIDED EXPANSION of the load rating specified.

When the fabrication and erection of floating bearings is accomplished under separate contracts, the applicable requirements of Article 505.09 shall apply.

Fabricated floating bearings and other materials complying with the requirements of this item, furnished and accepted, will be paid for at the contract unit price each for FURNISHING FLOATING BEARINGS, FIXED, FURNISHING FLOATING BEARINGS, GUIDED EXPANSION or FURNISHING FLOATING BEARINGS, NON-GUIDED EXPANSION of the load rating specified.

Storage and care of fabricated floating bearings and other materials complying with the requirements of this item by the Fabrication Contractor beyond the specified storage period, will be paid for at the contract unit price per calendar day for STORAGE OF FLOATING BEARINGS if a pay item is provided for in the contract, or will be paid for according to Article 109.04 if a pay item is not provided in the contract.

Floating bearings and other materials fabricated under this item erected according to the requirements of the specifications, and accepted, will be paid for at the contract unit price each for ERECTING FLOATING BEARINGS, FIXED, ERECTING FLOATING BEARINGS, GUIDED EXPANSION or ERECTING FLOATING BEARINGS, NON-GUIDED EXPANSION of the load rating specified.

### **FABRIC REINFORCED ELASTOMERIC TROUGH**

Effective: June 6, 1994

Revised: September 12, 2003

Description. This work shall consist of furnishing and installing the fabric reinforced elastomeric trough and side flaps as shown on the plans and as directed by the Engineer.

Materials. The elastomeric material requirements for the reinforced trough and flaps shall be according to the following:

The Elastomer Compound shall be according to AASHTO M 251 for Polychloroprene "50 duro", except the tensile strength shall be 10.3 MPa (1500 psi) minimum or it shall be (EPDM) ethylene propylene diene monomer according to Article 1052.02 of the Standard Specifications.

The composite of the fabric and elastomer shall have a minimum tensile strength of 122.6 x 122.6 N/mm (700 x 700 lb/in.) according to ASTM D 378.

The minimum elongation at ultimate tensile strength shall be 30 percent according to ASTM D 412.

The minimum thickness of the reinforced trough and flaps shall be 3 mm (1/8 in.).

Stainless steel bolts, washers and nuts shall be according to ASTM A 193. Flattening plates shall be according to AASHTO M 270M, Grade 250 (M 270, Grade 36) and shall be galvanized according to AASHTO M 111.

### **Construction Requirements**

The fabric reinforced elastomeric trough and flaps shall not be installed until all structural steel has been field painted. For abutment finger plate joints the trough shall be connected to the abutment backwall with predrilled anchor bolts utilizing the 6 mm x 50 mm (¼ in. x 2 in.) plate as a template for drilling the holes. Cast in place concrete inserts will not be allowed. Following installation of the trough flattening plate a suitable sealant shall be applied to prevent leakage between the trough and the backwall.

Method of Measurement. The fabric reinforced elastomeric trough with side flaps will be measured in place in meters (feet) along the centerline of the trough flow line.

Basis of Payment. This work will be paid for at the contract unit price per meter (foot) for FABRIC REINFORCED ELASTOMERIC TROUGH.

The furnishing and the installation or application of all necessary hardware, expansion bolts, stainless steel bolts, studs and washers, plates, and angles will be paid for according to "Furnishing and Erecting Structural Steel".

### **CLEANING AND PAINTING CONTACT SURFACE AREAS OF EXISTING STEEL STRUCTURES**

Effective: June 30, 2003

Revised: February 7, 2005

Description. This work shall consist of the surface preparation and painting of existing steel structures in areas that will be in contact with new steel.

The existing steel at primary connections (faying surfaces) shall be prepared, and primed as specified herein prior to connecting new structural steel to the existing structure.

The existing steel at secondary connections shall be prepared, and if bare metal is exposed, primed as specified herein prior to connecting new structural steel to the existing structure.

General. The existing coatings shall be assumed to contain lead and may also contain other toxic metals. Any plans that may be furnished for the work, and any dimensions or other information given regarding a structure, are only for the purpose of assisting bidders in determining the type and location of steel to be cleaned and painted. It is the responsibility of the Contractor to verify this information and the accuracy of the information provided shall in no way affect the price bid for structural steel.

Materials. The Bureau of Materials and Physical Research has established a list of all products that have met preliminary requirements. Each batch of material must be tested and approved before use.

The paint materials shall meet the requirements of the following articles of the Standard Specification:

<u>Item</u>	<u>Article</u>
a) Organic Zinc Rich Primer (Note 1)	
b) Aluminum Epoxy Mastic	1008.25

Note 1: These material requirements shall be according to the Special Provision for the Organic Zinc-Rich Paint System.

**Submittals:**

- a) Manufacturer's application instructions and product data sheets. Copies of the paint manufacturer's application instructions and product data sheets shall be furnished to the Engineer at the field site before steel cleaning begins.
- b) Waste Management Plan. The Waste Management Plan shall address all aspects of waste handling, storage, testing, hauling and disposal. Include the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. Submit the name and qualifications of the laboratory proposed for Toxicity Characteristic Leaching Procedure (TCLP) analysis.
- c) Quality Control (QC) Program. The QC Program shall identify the following; the instrumentation that will be used, a schedule of required measurements and observations, procedures for correcting unacceptable work, and procedures for improving surface preparation and painting quality as a result of quality control findings.

**Construction Requirements.** The Contractor shall perform first line, in process QC inspections. The Contractor shall implement the submitted and accepted QC Program to insure that the work accomplished complies with these specifications. The designated Quality Control inspector shall be onsite full time during any operations that affect the quality of the coating system (e.g., surface preparation, coating mixing and application, and evaluations between coats and upon completion of the work). The Contractor shall provide artificial lighting in areas where natural light is inadequate, as determined by the Engineer, to allow proper cleaning, inspection, and painting. Illumination for inspection shall be at least 325 LUX (30 foot candles). Illumination for cleaning and priming, including the working platforms, access, and entryways shall be at least 215 LUX (20 foot candles).

The Contractor shall be responsible for any damage caused to persons, vehicles, or property, except as indemnified by the Response Action Contractor Indemnification Act. Whenever the intended purposes of the protective devices are not being accomplished, as determined by the Engineer, work shall be immediately suspended until corrections are made. Painted surfaces damaged by any Contractor's operation shall be removed and repainted, as directed by the Engineer, at the Contractor's expense.

**Weather Conditions.** Surfaces to be primed after cleaning shall remain free of moisture and other contaminants. The Contractor shall control his/her operations to insure that dust, dirt, or moisture does not come in contact with surfaces cleaned prior to painting. Surfaces painted shall be protected until the coating is sufficiently cured to protect itself from damage.

Restrictions on ambient conditions shall be as per the coating manufacturer's written specifications.

**Surface Preparation:** Prior to making connections or painting, all loose abrasives, paint, and residue shall be contained, collected, removed from the surface area and properly disposed of as specified later in this specification.

Painted surfaces of new steel damaged by abrasive blasting or by the Contractor's operations shall be repainted, as directed by the Engineer, at the Contractor's expense.

- a) **Primary Connections.** Primary connections shall be defined as faying (contact) surfaces of high-strength bolted splices in main, load-carrying members, end diaphragms, end cross-frames, and other areas specifically noted in plans (such as cross-frame connections on curved girders, etc.). These will typically occur where existing splices are replaced or new splices are added.

The surfaces of existing steel in all areas that will be in direct contact with new steel shall be prepared according to SSPC-SP15, Commercial Grade Power Tool Cleaning using vacuum-shrouded power tools equipped with HEPA filtration. The surface preparation shall remove all rust, mill scale, and existing paint from the contact surface. At the Contractor's option, vacuum blast cleaning according to SSPC-SP6, Commercial Blast Cleaning may be substituted for SSPC-SP15 at no additional cost to the Department. The surface profile for primary connection surfaces shall be 38 to 90 microns (1.5 to 3.5 mils).

- b) **Secondary Connections.** Secondary connections shall be defined as all surface areas of existing members that will be in contact with new steel except as previously defined as primary connections.

These surfaces of existing steel in all areas that will be in direct contact with new steel shall be prepared according to SSPC-SP3, Power Tool Cleaning using vacuum-shrouded power tools equipped with HEPA filtration. The surface preparation shall remove all loose rust, loose mill scale, and loose, checked, alligatored and peeling paint from the contact surface. At the Contractor's option, vacuum blast cleaning according to SSPC-SP6, Commercial Blast Cleaning or SSPC-SP15, Commercial Grade Power Tool Cleaning may be substituted for SSPC-SP3 at no additional cost to the Department. The surface profile for abrasive blast cleaning and Commercial Grade Power Tool Cleaning shall be 38 to 90 microns (1.5 to 3.5 mils).

**Painting.** The manufacturer's written instructions shall be followed for paint storage, mixing, thinning, application, ambient conditions, and drying times between coats. The surface shall be free of dirt, dust, and debris prior to the application of any coat. The coatings shall be applied as a continuous film of uniform thickness free of defects including, but not limited to, runs, sags, overspray, dryspray, pinholes, voids, skips, misses, and shadow-through. Defects such as runs and sags shall be brushed out immediately during application.

The Engineer will approve surface preparation prior to priming.

- a) For Primary connections the surface of the prepared steel cleaned to bare metal shall be primed with an organic zinc rich primer between 90 and 125 microns (3.5 and 5.0 mils) dry film thickness.
- b) For Secondary Connections the surface of the prepared steel cleaned to bare metal shall be painted with one coat of epoxy mastic between 125 microns to 180 microns (5 to 7 mils) in thickness. Areas not cleaned to bare metal need not be painted.

The primer shall cure according to the manufacturers instructions prior to connecting new structural steel to the existing structure.

The surrounding coating at each prepared location shall be feathered for a minimum distance of 40 mm (1½ in.) to achieve a smooth transition between the prepared areas and the existing coating.

**Collection, Temporary Storage, Transportation and Disposal of Waste.** The Contractor and the Department are considered to be co-generators of the waste.

The Contractor is responsible for all aspects of waste collection, testing and identification, handling, storage, transportation, and disposal according to these specifications and all applicable Federal, State, and Local regulations. The Contractor shall provide for Engineer review and acceptance a Waste Management Plan that addresses all aspects of waste handling, storage, and testing, and provides the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. The Department will not perform any functions relating to the waste other than provide EPA identification numbers, provide the Contractor with the emergency response information, the emergency response telephone number required to be provided on the manifest, and to sign the waste manifest. The Engineer will obtain the identification numbers from the state and federal environmental protection agencies for the bridge(s) to be painted and furnish those to the Contractor.

All surface preparation/paint residues shall be collected daily and deposited in all-weather containers supplied by the Contractor as temporary storage. The storage area shall be secure to prevent unauthorized entry or tampering with the containers. Acceptable measures include storage within a fully enclosed (e.g., fenced in) and locked area, within a temporary building, or implementing other reasonable means to reduce the possibility of vandalism or exposure of the waste to the public or the environment (e.g., securing the lids or covers of waste containers and roll-off boxes). Waste shall not be stored outside of the containers. Waste shall be collected and transferred to bulk containers taking extra precautions as necessary to prevent the suspension of residues in air or contamination of surrounding surfaces. Precautions may include the transfer of the material within a tarpaulin enclosure. Transfer into roll-off boxes shall be planned to minimize the need for workers to enter the roll-off box.

No residues shall remain on uncontained surfaces overnight. Waste materials shall not be removed through floor drains or by throwing them over the side of the bridge. Flammable materials shall not be stored around or under any bridge structures.

The all-weather containers shall meet the requirements for the transportation of hazardous materials and as approved by the Department. Acceptable containers include covered roll-off

boxes and 55-gallon drums (17H). The Contractor shall insure that no breaks and no deterioration of these containers occurs and shall maintain a written log of weekly inspections of the condition of the containers. A copy of the log shall be furnished to the Engineer upon request. The containers shall be kept closed and sealed from moisture except during the addition of waste. Each container shall be permanently identified with the date that waste was placed into the container, contract number, hazardous waste name and ID number, and other information required by the IEPA.

The Contractor shall have each waste stream sampled for each project and tested by TCLP and according to EPA and disposal company requirements. The Engineer shall be notified in advance when the samples will be collected. The samples shall be collected and shipped for testing within the first week of the project, with the results due back to the Engineer within 10 days. The costs of testing shall be considered included in this work. Copies of the test results shall be provided to the Engineer prior to shipping the waste.

The existing paint removed, together with the surface preparation media (e.g. abrasive) shall be handled as a hazardous waste, regardless of the TCLP results. The waste shall be transported by a licensed hazardous waste transporter, treated by an IEPA permitted treatment facility to a non-hazardous special waste and disposed of at an IEPA permitted disposal facility in Illinois.

The treatment/disposal facilities shall be approved by the Engineer, and shall hold an IEPA permit for waste disposal and waste stream authorization for this cleaning residue. The IEPA permit and waste stream authorization must be obtained prior to beginning cleaning, except that if necessary, limited paint removal will be permitted in order to obtain samples of the waste for the disposal facilities. The waste shall be shipped to the facility within 90 days of the first accumulation of the waste in the containers. When permitted by the Engineer, waste from multiple bridges in the same contract may be transported by the Contractor to a central waste storage location(s) approved by the Engineer in order to consolidate the material for pick up, and to minimize the storage of waste containers at multiple remote sites after demobilization. Arrangements for the final waste pickup shall be made with the waste hauler by the time blast cleaning operations are completed or as required to meet the 90 day limit stated above.

The Contractor shall submit a waste accumulation inventory table to the Engineer no later than the 5<sup>th</sup> day of the month. The table shall show the number and size of waste containers filled each day in the preceding month and the amount of waste shipped that month, including the dates of shipments.

The Contractor shall prepare a manifest supplied by the IEPA for off-site treatment and disposal before transporting the hazardous waste off-site. The Contractor shall prepare a land ban notification for the waste to be furnished to the disposal facility. The Contractor shall obtain the handwritten signature of the initial transporter and date of the acceptance of the manifest. The Contractor shall send one copy of the manifest to the IEPA within two working days of transporting the waste off-site. The Contractor shall furnish the generator copy of the manifest and a copy of the land ban notification to the Engineer. The Contractor shall give the transporter the remaining copies of the manifest.

All other project waste shall be removed from the site according to Federal, State and Local regulations, with all waste removed from the site prior to final Contractor demobilization.



The Contractor shall make arrangements to have other hazardous waste, which he/she generates, such as used paint solvent, transported to the Contractor's facility at the end of each day that this waste is generated. These hazardous wastes shall be manifested using the Contractor's own generator number to a treatment or disposal facility from the Contractor's facility. The Contractor shall not combine solvents or other wastes with cleaning residue wastes. All waste streams shall be stored in separate containers.

The Contractor is responsible for the payment of any fines and undertaking any clean up activities mandated by State or federal environmental agencies for improper waste handling, storage, transportation, or disposal.

Contractor personnel shall be trained in the proper handling of hazardous waste, and the necessary notification and clean up requirements in the event of a spill. The Contractor shall maintain a copy of the personnel training records at each bridge site.

It is understood and agreed that the cost of all work outlined above, unless otherwise specified, has been included in the bid, and no extra compensation will be allowed.

Basis of Payment: This work will be considered included in the cost of "Furnishing and Erecting Structural Steel", "Erecting Structural Steel", or "Structural Steel Repair", as applicable, according to the Standard Specifications, unless otherwise specified on the plans.

#### **CLEANING AND PAINTING NEW METAL STRUCTURES**

Effective Date: September 13, 1994

Revised Date: August 19, 2004

Description. The material and construction requirements that apply to cleaning and painting new structural steel shall be according to the applicable portion of Sections 506 of the Standard Specifications except as modified herein. The three coat paint system shall be the system as specified on the plans and as defined herein.

Materials. All materials to be used on an individual structure shall be produced by the same manufacturer. The Bureau of Materials and Physical Research has established a list of all products that have met preliminary requirements. Each batch of material must be tested and approved by that bureau before use.

The paint materials shall meet the requirements of the following articles of the Standard Specification:

<u>Item</u>	<u>Article</u>
(a) Inorganic Zinc-Rich Primer	1008.22
(b) Waterborne Acrylic	1008.24
(c) Aluminum Epoxy Mastic	1008.25
(d) Organic Zinc-Rich Primer (Note 1)	
(e) Epoxy Intermediate (Note 1)	
(f) Aliphatic Urethane (Note 1)	

Note 1: These material requirements shall be according to the Special Provision for the Organic Zinc-Rich Paint System.

Submittals. At least 30 days prior to beginning field painting, the Contractor shall submit for the Engineer's review and acceptance, the following applicable plans, certifications and information for completing the field work. Field painting can not proceed until the submittals are accepted by the Engineer. Qualifications, certifications and QC plans for shop cleaning and painting shall be available for review by the QA Inspector.

- a) Contractor/Personnel Qualifications. Except for miscellaneous steel items such as bearings, side retainers, expansion joint devices, and other items allowed by the Engineer, or unless stated otherwise in the contract, the shop painting Contractors shall be certified to perform the work as follows: the shop painting Contractor shall possess AISC Sophisticated Paint Endorsement or SSPC-QP3 certification. Evidence of current qualifications shall be provided.

Personnel managing the shop and field Quality Control program(s) for this work shall possess a minimum classification as a National Association of Corrosion Engineers (NACE) Coating Inspector Technician, or shall provide evidence of successful inspection of 3 projects of similar or greater complexity and scope that have been completed in the last 2 years. Copies of the certification and/or experience shall be provided.

The personnel performing the QC tests for this work shall be trained in coatings inspection and the use of the testing instruments. Documentation of training shall be provided.

- b) Quality Control (QC) Program. The shop and field QC Programs shall identify the following; the instrumentation that will be used, a schedule of required measurements and observations, procedures for correcting unacceptable work, and procedures for improving surface preparation and painting quality as a result of quality control findings. The field program shall incorporate the IDOT Quality Control Daily Report form, as supplied by the Engineer.
- c) Field Cleaning and Painting Inspection Access Plan. The inspection access plan for use by Contractor QC personnel for ongoing inspections and by the Engineer during Quality Assurance (QA) observations.
- d) Surface Preparation/Painting Plan. The surface preparation/painting plan shall include the methods of surface preparation and type of equipment to be utilized for solvent cleaning, abrasive blast cleaning, washing, and power tool cleaning. The plan shall include the manufacturer's names of the materials that will be used, including Product Data Sheets and Material Safety Data Sheets (MSDS).

A letter or written instructions from the coating manufacturer shall be included, indicating the required drying time for each coat at the minimum, normal, and maximum application temperatures before the coating can be exposed to temperatures or moisture conditions that are outside of the published application parameters.

Field Quality Control (QC) Inspections. The Contractor shall perform first line, in process QC inspections of each phase of the work. The Contractor shall implement the submitted and accepted QC Program to insure that the work accomplished complies with these specifications. The Contractor shall use the IDOT Quality Control Daily Report form supplied by the Engineer to record the results of quality control tests. The completed reports shall be turned into the Engineer before work resumes the following day.

The Contractor shall have available at the shop or on the field site, all of the necessary inspection and testing equipment. The equipment shall be available for the Engineer's use when requested.

Field Quality Assurance (QA) Observations. The Engineer will conduct QA observations of any or all phases of the work. The Engineer's observations in no way relieve the Contractor of the responsibility to provide all necessary daily QC inspections of his/her own and to comply with all requirements of this Specification.

The Engineer has the right to reject any work that was performed without adequate provision for QA observations.

The Engineer will issue a Non-Conformance Report when cleaning and painting work is found to be in violation of the specification requirements, and is not corrected to bring it into compliance before proceeding with the next phase of work.

Inspection Access and Lighting. The Contractor shall facilitate the Engineer's observations as required, including allowing ample time to view the work. The Contractor shall furnish, erect and move scaffolding or other mechanical equipment to permit close observation of all surfaces to be cleaned and painted. This equipment shall be provided during all phases of the work. Examples of acceptable access structures include:

- Mechanical lifting equipment, such as, scissor trucks, hydraulic booms, etc.
- Platforms suspended from the structure comprised of trusses or other stiff supporting members and including rails and kick boards.
- Simple catenary supports are permitted only if independent life lines for attaching a fall arrest system according to Occupational Safety and Health Administration (OSHA) regulations are provided.

When the surface to be inspected is more than 1.8 m (6 ft) above the ground or water surface, the Contractor shall provide the Engineer with a safety harness and a lifeline according to OSHA regulations. The lifeline and attachment shall not direct the fall into oncoming traffic. The Contractor shall provide a method of attaching the lifeline to the structure independent of the inspection facility or any support of the platform. When the inspection facility is more than 800 mm (2 1/2 ft) above the ground, the Contractor shall provide an approved means of access onto the platform.

The Contractor shall provide artificial lighting in areas where natural light is inadequate, as determined by the Engineer, to allow proper cleaning, inspection, and painting. Illumination for inspection shall be at least 325 LUX (30 foot candles). Illumination for cleaning and painting, including the working platforms, access, and entryways shall be at least 215 LUX (20 foot candles).

**Construction Requirements.** The Contractor shall be responsible for any damage caused to persons, vehicles, or property, except as indemnified by the Response Action Contractor Indemnification Act. Whenever the intended purposes of the protective devices are not being accomplished, as determined by the Engineer, work shall be immediately suspended until corrections are made. Painted surfaces damaged by any Contractor's operation shall be removed and repainted, as directed by the Engineer, at the Contractor's expense.

The Contractor shall comply with the provisions of the Illinois Environmental Protection Act. Paint drips, spills, and overspray are not permitted to escape into the air or onto any other surfaces or surrounding property not intended to be painted. Containment shall be used to control paint drips, spills, and overspray, and shall be dropped and all equipment secured when sustained wind speeds of 64 kph (40 mph) or greater occur, unless the containment design necessitates action at lower wind speeds. The contractor shall evaluate project-specific conditions to determine the specific type and extent of containment needed to control the paint emissions and shall submit a plan for containing or controlling paint debris (droplets, spills, overspray, etc.) to the Engineer for approval prior to starting the work. Approval shall not relieve the Contractor of their ultimate responsibility for controlling paint debris from escaping the work zone.

**Surface and Weather Conditions.** Surfaces to be painted after cleaning shall remain free of moisture and other contaminants. The Contractor shall control his/her operations to insure that dust, dirt, or moisture does not come in contact with surfaces cleaned or painted that day.

The surface temperature shall be at least 3°C (5°F) above the dew point during final surface preparation operations. The paint manufacturers' published literature shall be followed for specific temperature, dew point, and humidity restrictions during the application of each coat.

The Contractor shall monitor temperature, dew point, and humidity every 4 hours during surface preparation and coating application in the specific areas where the work is being performed. The frequency of monitoring shall increase if weather conditions are changing. The Engineer has the right to reject any work that was performed under unfavorable weather conditions. Rejected work shall be removed, recleaned, and repainted at the Contractor's expense.

**Seasonal Restrictions on Field Cleaning and Painting.** Field cleaning and painting work shall be accomplished between April 15 and October 31 unless authorized otherwise by the Engineer in writing.

**Inorganic Zinc-rich/ Waterborne Acrylic Paint system.** This system shall be for shop and field application of the coating system, shop application of the intermediate and top coats will not be allowed.

In the shop, all structural steel designated to be painted shall be given one coat of inorganic zinc rich primer. In the field, before the application of the intermediate coat, the prime coat and any newly installed fasteners shall be spot solvent cleaned per SSPC-SP 1 and all surfaces pressure washed to remove dirt, oil, lubricants, oxidation products, and foreign substances. Washing shall involve the use of potable water at a pressure between 7 MPa (1000 psi) and 34 MPa (5000 psi) and according to "Low Pressure Water Cleaning" of SSPC-SP12. Paint spray equipment shall not be used to perform the water cleaning. All damaged shop primed areas

shall then be spot cleaned per SSPC-SP3 and spot primed with aluminum epoxy mastic. The structural steel shall then receive one full intermediate coat and one full topcoat of waterborne acrylic paint.

- a) Paint drips, spills, and overspray must be controlled. If containment is used to control paint drips, spills, and overspray, the containment shall be dropped and all equipment secured when sustained wind speeds of 64 kph (40 mph) or greater occur. When the protective coverings need to be attached to the structure, they shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.
- b) Coating Dry Film Thickness (dft), measured according to SSPC-PA2:  
Zinc Primer: 75 microns (3 mils) min., 150 microns (6 mils) max.  
Epoxy Mastic: 125 microns (5 mils) min., 180 microns (7 mils) max.  
Intermediate Coat: 50 microns (2 mils) min., 100 microns (4 mils) max.  
Topcoat: 50 microns (2 mils) min., 100 microns (4 mils) max.

The total dry film thickness, excluding the spot areas touched up with epoxy mastic, shall be between 180 and 355 microns (7 and 14 mils).

- c) The pressure washing requirement above may be waived if the QC and QA Inspectors verify the primed surfaces have not been contaminated.
- d) Damage to the paint system shall be spot cleaned using SSPC-SP3. The cleaned areas shall be spot painted with a penetrating sealer as recommended by the manufacturer, which shall overlap onto the existing topcoat. Then the aluminum epoxy mastic shall be spot applied not to go beyond the area painted with the sealer. The acrylic intermediate and topcoat shall be spot applied to the mastic with at least a 150 mm (6 inch) overlap onto the existing topcoat.

**Organic Zinc-Rich/ Epoxy/ Urethane Paint System.** This system shall be for full shop application of the coating system, all contact surfaces shall be masked off prior to application of the intermediate and top coats.

Additional Surface Preparation. In addition to the requirements of Section 3.2.9 of the AASHTO/AWS D1.5M/D1.5:2002 Bridge Welding Code (breaking thermal cut corners of stress carrying members), rolled and thermal cut corners to be painted with organic zinc primer shall be broken if they are sharper than a 1.5 mm (1/16 in.) radius. Corners shall be broken by a single pass of a grinder or other suitable device at a 45° angle to each adjoining surface prior to final blast cleaning, so the resulting corner approximates a 1.5 mm (1/16 in.) or larger radius after blasting. Surface anomalies (burrs, fins, deformations) shall also be treated to meet this criteria before priming.

In the shop, all structural steel designated to be painted shall be given one coat of organic zinc rich primer. Before the application of the intermediate coat, the prime coat and any newly installed fasteners shall be spot solvent cleaned per SSPC-SP 1 and all surfaces pressure washed to remove dirt, oil, lubricants, oxidation products, and foreign substances. Washing shall involve the use of potable water at a pressure between 7 MPa (1000 psi) and 34 MPa

(5000 psi) and according to "Low Pressure Water Cleaning" of SSPC-SP12. Paint spray equipment shall not be used to perform the water cleaning. All damaged shop primed areas shall then be spot cleaned per SSPC-SP3, and the structural steel shall then receive one full intermediate coat of epoxy and one full topcoat of aliphatic urethane.

- (a) Paint drips, spills, and overspray must be controlled. If containment is used to control paint drips, spills, and overspray, the containment shall be dropped and all equipment secured when sustained wind speeds of 64 kph (40 mph) or greater occur. When the protective coverings need to be attached to the structure, they shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.
- (b) Coating Dry Film Thickness (dft), measured according to SSPC-PA2:
  - organic Zinc Primer: 75 microns (3 mils) min., 125 microns (5 mils) max.
  - Aluminum Epoxy Mastic: 125 microns (5 mils) min., 180 microns (7 mils) max.
  - Epoxy Intermediate Coat: 75 microns (3 mils) min., 150 microns (6 mils) max.
  - Aliphatic Urethane Top Coat: 65 microns (2.5 mils) min., 100 microns (4 mils) max.
- (c) The total dry film thickness, excluding the spot areas touched up with epoxy mastic, shall be between 215 and 375 microns (8.5 and 15 mils).
- (d) When specified on the plans or as requested by the Contractor, and approved by the Engineer, the epoxy intermediate and aliphatic urethane top coats shall be applied in the shop. All faying surfaces of field connections shall be masked off after priming and shall not receive the intermediate or top coats in the shop. The intermediate and top coats for field connections shall be applied, in the field, after erection of the structural steel is completed. The pressure washing requirement above may be waived if the QC and QA Inspectors verify the primed surfaces have not been contaminated.
- (e) Erection and handling damage to the shop applied system shall be spot cleaned using SSPC-SP3. The surrounding coating at each repair location shall be feathered for a minimum distance of 40 mm (1 1/2 in.) to achieve a smooth transition between the prepared areas and the existing coating. The existing coating in the feathered area shall be roughened to insure proper adhesion of the repair coats. The areas cleaned to bare metal shall be spot painted with aluminum epoxy mastic. The intermediate and finish coat shall be spot applied to with at least a 150 mm (6 inch) overlap onto the existing finish coat.

The paint manufacturer's product data sheets shall be available for QA review in the shop and submitted to the Engineer prior to start of field work and the requirements as outlined in the data sheets shall be followed.

#### Special Instructions.

Painting Date/System Code. At the completion of the work, the Contractor shall stencil in contrasting color paint the date of painting the bridge, the painting Contractors name, and the paint type code from the Structure Information and Procedure Manual for the system used. The letters shall be capitals, not less than 50 mm (2 in.) and not more than 75 mm (3 in.) in height.

The stencil shall contain the following wording "PAINTED BY (insert the name of the painting Contractor)" and shall show the month and year in which the painting was completed, followed by "CODE S" for the Inorganic Zinc/ Acrylic System and "CODE X" for the Organic Zinc/ Epoxy/ Urethane System, all stenciled on successive lines. This information shall be stenciled on the cover plate of a truss end post near the top of the railing, or on the outside face of an outside stringer near both ends of the bridge facing traffic, or at some equally visible surface designated by the Engineer.

Method of Measurement. Shop cleaning and painting new structures will not be measured for payment. Field cleaning and painting will not be measured for payment except when performed under a contract that contains a separate pay item for this work.

Basis of Payment. This work will be paid for according to Article 506.07.

### **CLEANING AND PAINTING EXISTING STEEL STRUCTURES**

Effective: October 2, 2001

Revised: February 7, 2005

Description. This work shall consist of the preparation of all designated metal surfaces by the method(s) specified on the plans. This work also includes the painting of those designated surfaces with the paint system(s) specified on the plans. The Contractor shall furnish all materials, equipment, labor, and other essentials necessary to accomplish this work and all other work described herein and as directed by the Engineer.

Materials. All materials to be used on an individual structure shall be produced by the same manufacturer.

The Bureau of Materials and Physical Research has established a list of all products that have met preliminary requirements. Each batch of material, except for the penetrating sealer, must be tested and approved before use. The specified colors shall be produced in the coating manufacturer's facility. Tinting of the coating after it leaves the manufacturer's facility is not allowed.

The paint materials shall meet the following requirements of the Standard Specification and as noted below:

<u>Item</u>	<u>Article</u>
(a) Waterborne Acrylic	1008.24
(b) Aluminum Epoxy Mastic	1008.25
(c) Organic Zinc Rich Primer (Note 1)	
(d) Epoxy/ Aliphatic Urethane (Note 1)	
(e) Penetrating Sealer (Note 2)	
(f) Moisture Cured Zinc Rich Urethane Primer (Note 3)	
(g) Moisture Cured Aromatic/Aliphatic Urethane (Note 3)	
(h) Moisture Cured Penetrating Sealer (Note 4)	

Note 1: These material requirements shall be according to the Special Provision for the Organic Zinc-Rich Paint System.

Note 2: The Epoxy Penetrating Sealer shall be a cross-linked multi component sealer. The sealer shall have the following properties:

- (a) The volume solids shall be 98%(plus or minus 2%).
- (b) Shall be clear or slightly tinted color.

Note 3: These material requirements shall be according to the Special Provision for the Moisture Cured Urethane Paint System.

Note 4: The Moisture Cured Penetrating Sealer manufacturer's certification will be required.

Submittals. The Contractor shall submit for Engineer review and acceptance, the following plans and information for completing the work. The submittals shall be provided within 30 days of execution of the contract unless given written permission by the Engineer to submit them at a later date. Work cannot proceed until the submittals are accepted by the Engineer. Details for each of the plans are presented within the body of this specification.

- a) Contractor/Personnel Qualifications. Evidence of Contractor qualifications and the names and qualifications/experience/training of the personnel managing and implementing the Quality Control program and conducting the quality control tests.
- b) Quality Control (QC) Program. The QC Program shall identify the following; the instrumentation that will be used, a schedule of required measurements and observations, procedures for correcting unacceptable work, and procedures for improving surface preparation and painting quality as a result of quality control findings. The program shall incorporate at a minimum, the IDOT Quality Control Daily Report form as supplied by the Engineer.
- c) Inspection Access Plan. The inspection access plan for use by Contractor QC personnel for ongoing inspections and by the Engineer during Quality Assurance (QA) observations.
- d) Surface Preparation/Painting Plan. The surface preparation/painting plan shall include the methods of surface preparation and type of equipment to be utilized for washing, hand/power tool cleaning, removal of rust, mill scale, paint or foreign matter, abrasive blast or water jetting, and remediation of chloride. If detergents, additives, or inhibitors are incorporated into the water, the Contractor shall include the names of the materials and Material Safety Data Sheets (MSDS). The Contractor shall identify the solvents proposed for solvent cleaning together with MSDS.

The plan shall also include the methods of coating application and equipment to be utilized.

If the Contractor proposes to heat or dehumidify the containment, the methods and equipment proposed for use shall be included in the Plan for the Engineer's consideration.

- e) Paint Manufacturer Certifications and Letters. When a sealer is used, the Contractor shall provide the manufacturer's certification of compliance with IDOT testing



requirements listed under "Materials" above. A certification regarding the compatibility of the sealer with the specified paint system shall also be included.

When rust inhibitors are used, the Contractor shall provide a letter from the coating manufacturer indicating that the inhibitor is compatible with, and will not adversely affect the performance of the coating system.

If the use of a chemical soluble salt remover is proposed by the Contractor, provide a letter from the coating manufacturer indicating that the material will not adversely effect the performance of the coating system.

The paint manufacturer's application and thinning instructions, MSDS and product data sheets shall be provided, with specific attention drawn to storage temperatures, and the temperatures of the material, surface and ambient air at the time of application.

A letter or written instructions from the coating manufacturer shall be provided indicating the length of time that each coat must be protected from cold or inclement weather (e.g., exposure to rain) during its drying period.

- f) Abrasives. Abrasives to be used for abrasive blast cleaning, including MSDS. For expendable abrasives, the Contractor shall provide certification from the abrasive supplier that the abrasive meets the requirements of SSPC-AB1. For steel grit abrasives, the certification shall indicate that the abrasive meets the requirements of SSPC-AB3.
- g) Protective Coverings. Plan for containing or controlling paint debris (droplets, spills, overspray, etc.). Any tarpaulins or protective coverings proposed for use shall be fire retardant. For submittal requirements involving the containment used to remove lead paint, the Contractor shall refer to Special Provision for Containment and Disposal of Lead Paint Cleaning Residues.
- h) Progress Schedule. Progress schedule shall be submitted per Article 108.02 and shall identify all major work items (e.g., installation of rigging/containment, surface preparation, and coating application).

When the Engineer accepts the submittals, the Contractor will receive written notification. The Contractor shall not begin any paint removal work until the Engineer has accepted the submittals. The Contractor shall not construe Engineer acceptance of the submittals to imply approval of any particular method or sequence for conducting the work, or for addressing health and safety concerns. Acceptance of the programs does not relieve the Contractor from the responsibility to conduct the work according to the requirements of Federal, State, or Local regulations and this specification, or to adequately protect the health and safety of all workers involved in the project and any members of the public who may be affected by the project. The Contractor remains solely responsible for the adequacy and completeness of the programs and work practices, and adherence to them.

Contractor Qualifications. Unless indicated otherwise in the contract plans, the painting Contractor shall possess current SSPC-QP1 and SSPC-QP2 certifications at the time of bid, and shall maintain certified status throughout the duration of the painting work under the contract.

Quality Control (QC) Inspections. The Contractor shall perform first line, in process QC inspections. The Contractor shall implement the submitted and accepted QC Program to insure that the work accomplished complies with these specifications. The designated Quality Control inspector shall be onsite full time during any operations that affect the quality of the coating system (e.g., surface preparation and chloride remediation, coating mixing and application, and evaluations between coats and upon project completion). The Contractor shall use the IDOT Quality Control Daily Report form supplied by the Engineer to record the results of quality control tests. The completed reports shall be turned into the Engineer before work resumes the following day.

Contractor QC inspections shall include, but not be limited to the following:

- Suitability of protective coverings and the means employed to control project debris and paint spills, overspray, etc.
- Ambient conditions
- Surface preparation (solvent cleaning, pressure washing including chalk tests, hand/power tool or abrasive blast cleaning, etc.)
- Chloride remediation
- Coating application (specified materials, mixing, thinning, and wet/dry film thickness)
- Recoat times and cleanliness between coats
- Coating continuity and coverage (freedom from runs, sags, overspray, dryspray, pinholes, shadow-through, skips, misses, etc.)

The personnel managing the Contractor's QC Program shall possess a minimum classification as a National Association of Corrosion Engineers (NACE) Coating Inspector Technician, or shall provide evidence of successful inspection of 3 projects of similar or greater complexity and scope that have been completed in the last 2 years. References shall include the name, address, and telephone number of a contact person employed by the bridge owner.

The personnel performing the QC tests shall be trained in coatings inspection and the use of the testing instruments. Documentation of training shall be provided. The QC personnel shall not perform hands on surface preparation or painting activities. Painters shall perform wet film thickness measurements, with QC personnel conducting random spot checks of the wet film. The Contractor shall not replace the QC personnel assigned to the project without advance notice to the Engineer, and acceptance of the replacement(s), by the Engineer.

The Contractor shall supply all necessary equipment to perform the QC inspections. Equipment shall include the following at a minimum:

- Psychrometer or comparable equipment for the measurement of dew point and relative humidity, together with all necessary weather bureau tables or psychrometric charts.
- Surface temperature thermometer
- Hypodermic Needle Pressure Gage for determining blasting pressure at the nozzle
- SSPC Visual Standards VIS 1 for abrasive blast cleaning, VIS 3 for hand/power tool cleaning, VIS 4 for water jetting, and/or VIS 5 for wet abrasive blast cleaning, as applicable.
- Commercially available putty knife of a minimum thickness of 1mm (40 mils) and a width between 25 and 75 mm (1 and 3 in.) Note that the putty knife is only required for projects in which the existing coating is being feathered and must be tested with a dull putty knife.

- Testex Press-O-Film Replica Tape and Spring Micrometer
- Bresle Cell Kits or CHLOR\*TEST kits for chloride determinations, or equivalent
- Wet Film Thickness Gage
- Blotter paper and plate glass for compressed air cleanliness checks
- Type 2 Magnetic Dry Film Thickness Gage per SSPC - PA2
- Calibration standards for dry film thickness gage
- Light meter for measuring light intensity during paint removal, painting, and inspection activities
- All applicable ASTM and SSPC Standards used for the work (reference list attached)

The instruments shall be calibrated by the Contractor's personnel according to the equipment manufacturer's recommendations and the Contractor's QC Program. All inspection equipment shall be made available to the Engineer for QA observations on an as needed basis.

Hold Point Notification. Specific inspection items throughout this specification are designated as Hold Points. Unless other arrangements are made at the project site, the Contractor shall provide the Engineer with a minimum 4-hour notification before a Hold Point inspection will be reached. If the 4-hour notification is provided and the Work is ready for inspection at that time, the Engineer will conduct the necessary observations. If the Work is not ready at the appointed time, unless other arrangements are made, an additional 4-hour notification is required. Permission to proceed beyond a Hold Point without a QA inspection will be granted solely at the discretion of the Engineer, and only on a case by case basis.

Quality Assurance (QA) Observations. The Engineer will conduct QA observations of any or all phases of the work. The presence or activity of Engineer observations in no way relieves the Contractor of the responsibility to provide all necessary daily QC inspections of his/her own and to comply with all requirements of this Specification.

The Engineer has the right to reject any work that was performed without adequate provision for QA observations.

The Engineer will issue a Non-Conformance Report when work is found to be in violation of the specification requirements, and is not corrected to bring it into compliance before proceeding with the next phase of work.

Inspection Access and Lighting. The Contractor shall facilitate the Engineer's observations as required, including allowing ample time to view the work. The Contractor shall furnish, erect and move scaffolding or other mechanical equipment to permit close observation of all surfaces to be cleaned and painted. This equipment shall be provided during all phases of the work. Examples of acceptable access structures include:

- Mechanical lifting equipment, such as, scissor trucks, hydraulic booms, etc.
- Platforms suspended from the structure comprised of trusses or other stiff supporting members and including rails and kick boards.
- Simple catenary supports are permitted only if independent life lines for attaching a fall arrest system according to Occupational Safety and Health Administration (OSHA) regulations are provided.

When the surface to be inspected is more than 1.8 m (6 ft) above the ground or water surface, the Contractor shall provide the Engineer with a safety harness and a lifeline according to OSHA regulations. The lifeline and attachment shall not direct the fall into oncoming traffic. The Contractor shall provide a method of attaching the lifeline to the structure independent of the inspection facility or any support of the platform. When the inspection facility is more than 800 mm (2 1/2 ft) above the ground, the Contractor shall provide an approved means of access onto the platform.

The Contractor shall provide artificial lighting in areas where natural light is inadequate, as determined by the Engineer, to allow proper cleaning, inspection, and painting. Illumination for inspection shall be at least 325 LUX (30 foot candles). Illumination for cleaning and painting, including the working platforms, access and entryways shall be at least 215 LUX (20 foot candles).

Surface Preparation and Painting Equipment. All cleaning and painting equipment shall include gages capable of accurately measuring fluid and air pressures and shall have valves capable of regulating the flow of air, water or paint as recommended by the equipment manufacturer. The equipment shall be maintained in proper working order.

Diesel or gasoline powered equipment shall be positioned or vented in a manner to prevent deposition of combustion contaminants on any part of the structure.

Hand tools, power tools, pressure washing, water jetting, abrasive blast cleaning equipment, brushes, rollers, and spray equipment shall be of suitable size and capacity to perform the work required by this specification. All power tools shall be equipped with vacuums and High Efficiency Particulate Air (HEPA) filtration. Appropriate filters, traps and dryers shall be provided for the compressed air used for abrasive blast cleaning and conventional spray application. Paint pots shall be equipped with air operated continuous mixing devices unless prohibited by the coating manufacturer.

Test Sections. Prior to surface preparation, the Contractor shall prepare a test section(s) on each structure to be painted in a location(s) which the Engineer considers to be representative of the existing surface condition and steel type for the structure as a whole. More than one test section may be needed to represent the various design configurations of the structure. The purpose of the test section(s) is to demonstrate the use of the tools and degree of cleaning required (cleanliness and profile) for each method of surface preparation that will be used on the project. Each test section shall be approximately 0.93 sq m (10 sq ft). The test section(s) shall be prepared using the same equipment, materials and procedures as the production operations. The Contractor shall prepare the test section(s) to the specified level of cleaning according to the appropriate SSPC visual standards, modified as necessary to comply with the requirements of this specification. The written requirements of the specification prevail in the event of a conflict with the SSPC visual standards. Only after the test section(s) have been approved shall the Contractor proceed with surface preparation operations. Additional compensation will not be allowed the Contractor for preparation of the test section(s).

For the production cleaning operations, the specifications and written definitions, the test section(s), and the SSPC visual standards shall be used in that order for determining compliance with the contractual requirements.

Protective Coverings and Damage. All portions of the structure that could be damaged by the surface preparation and painting operations (e.g., utilities), including any sound paint that is allowed to remain according to the contract documents, shall be protected by covering or shielding. Tarpaulins drop cloths, or other approved materials shall be employed. The Contractor shall comply with the provisions of the Illinois Environmental Protection Act. Paint drips, spills, and overspray are not permitted to escape into the air or onto any other surfaces or surrounding property not intended to be painted. Containment shall be used to control paint drips, spills, and overspray, and shall be dropped and all equipment secured when sustained wind speeds of 64 kph (40 mph) or greater occur, unless the containment design necessitates action at lower wind speeds. The contractor shall evaluate project-specific conditions to determine the specific type and extent of containment needed to control the paint emissions and shall submit a plan for containing or controlling paint debris (droplets, spills, overspray, etc.) to the Engineer for approval prior to starting the work. Approval shall not relieve the Contractor of their ultimate responsibility for controlling paint debris from escaping the work zone.

When the protective coverings need to be attached to the structure, they shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing. When removing coatings containing lead the containment and disposal of the residues shall be as specified in the Special Provision for Containment and Disposal of Lead Paint Cleaning Residues contained elsewhere in this Contract. When removing coatings not containing lead the containment and disposal of the residues shall be as specified in the Special Provision for Containment and Disposal of Non-Lead Paint Cleaning Residues contained elsewhere in this Contract.

The Contractor shall be responsible for any damage caused to persons, vehicles, or property, except as indemnified by the Response Action Contractor Indemnification Act. Whenever the intended purposes of the controls or protective devices used by the Contractor are not being accomplished, as determined by the Engineer, work shall be immediately suspended until corrections are made. Damage to vehicles or property shall be repaired by the Contractor at the Contractor's expense. Painted surfaces damaged by any Contractor's operation shall be repaired, removed and/or repainted, as directed by the Engineer, at the Contractor's expense.

Weather Conditions. Surfaces to be painted after cleaning shall remain free of moisture and other contaminants. The Contractor shall control his/her operations to insure that dust, dirt, or moisture do not come in contact with surfaces cleaned or painted that day.

- a) The surface temperature shall be at least 3°C (5°F) above the dew point during final surface preparation operations. The manufacturers' published literature shall be followed for specific temperature, dew point, and humidity restrictions during the application of each coat.
- b) If the Contractor proposes to control the weather conditions inside containment, proposed methods and equipment for heating and/or dehumidification shall be included in the work plans for the Engineer's consideration. Any heating/dehumidification proposals accepted by the Engineer shall be implemented at no additional cost to the department.
- c) Cleaning and painting shall be done between April 15 and October 31 unless authorized otherwise by the Engineer in writing.

The Contractor shall monitor temperature, dew point, and relative humidity every 4 hours during surface preparation and coating application in the specific areas where the work is being performed. The frequency of monitoring shall increase if weather conditions are changing. If the weather conditions after application and during drying are forecast to be outside the acceptable limits established by the coating manufacturer, coating application shall not proceed. If the weather conditions are forecast to be borderline relative to the limits established by the manufacturer, monitoring shall continue at a minimum of 4-hour intervals throughout the drying period. The Engineer has the right to reject any work that was performed, or drying that took place, under unfavorable weather conditions. Rejected work shall be removed, recleaned, and repainted at the Contractor's expense.

Compressed Air Cleanliness. Prior to using compressed air for abrasive blast cleaning, blowing down the surfaces, and painting with conventional spray, the Contractor shall verify that the compressed air is free of moisture and oil contamination according to the requirements of ASTM D 4285. The tests shall be conducted at least one time each shift for each compressor system in operation. If air contamination is evident, the Contractor shall change filters, clean traps, add moisture separators or filters, or make other adjustments as necessary to achieve clean, dry air. The Contractor shall also examine the work performed since the last acceptable test for evidence of defects or contamination caused by the compressed air. Effected work shall be repaired at the Contractor's expense.

Low Pressure Water Cleaning and Solvent Cleaning (HOLD POINT). The Contractor shall notify the Engineer 24 hours in advance of beginning surface preparation operations.

- a) Water Cleaning of Lead Containing Coatings Prior to Overcoating. Prior to initiating any mechanical cleaning such as hand/power tool cleaning on surfaces that are painted with lead, all surfaces to be prepared and painted, and the tops of pier and abutment caps shall be washed. Washing is not required if the surfaces will be prepared by water jetting.

Washing shall involve the use of potable water at a minimum of 7 MPa (1000 psi) and less than 34 MPa (5000 psi) according to "Low Pressure Water Cleaning" of SSPC-SP12. Paint spray equipment shall not be used to perform the water cleaning. The cleaning shall be performed in such a manner as to remove dust, dirt, chalk, insect and animal nests, bird droppings, loose paint and other foreign matter prior to solvent cleaning. The water, debris, and any loose paint removed by water cleaning shall be collected for proper disposal. The washing shall be completed no more than 2 weeks prior to surface preparation.

If detergents or other additives are added to the water, the detergents/additives shall be included in the submittals and not used until accepted by the Engineer. When detergents or additives are used, the surface shall be rinsed with potable water before the detergent water dries.

After washing has been accepted by the Engineer, all traces of asphaltic cement, oil, grease, diesel fuel deposits, and other soluble contaminants which remain on the steel surfaces to be painted shall be removed by solvent cleaning according to SSPC – SP1, supplemented with scraping (e.g., to remove large deposits of asphaltic cement) as

required. The solvent(s) used for cleaning shall be compatible with the existing coating system. The Contractor shall identify the proposed solvent(s) in the submittals. If the existing coating is softened, wrinkled, or shows other signs of attack from the solvents, the Contractor shall immediately discontinue their use. The name and composition of replacement solvents, together with MSDS, shall be submitted for Engineer acceptance prior to use.

Under no circumstances shall subsequent hand/power tool cleaning be performed in areas containing surface contaminants or in areas where the Engineer has not accepted the washing and solvent cleaning. Surfaces prepared by hand/power tool cleaning without approval of the washing and solvent cleaning may be rejected by the Engineer. Rejected surfaces shall be recleaned with both solvent and the specified mechanical means at the Contractor's expense.

After all washing and mechanical cleaning are completed, representative areas of the existing coating shall be tested to verify that the surface is free of chalk and other loose surface debris or foreign matter. The testing shall be performed according to ASTM D4214. Cleaning shall continue until a chalk rating of 6 or better is achieved in every case.

- b) Water Cleaning of Non-Lead Coatings Prior to Overcoating. Thoroughly clean the surfaces according to the steps defined above for "Water Cleaning of Lead Containing Coatings Prior to Overcoating," except that the wash water does not need to be collected, and if the shop primer is inorganic zinc, the chalk rating does not apply. All other provisions are applicable.
- c) Water Cleaning/Debris Removal Prior to Total Coating Removal. When total coating removal is specified, water cleaning of the surface prior to coating removal is not required by this specification and is at the option of the Contractor. If the Contractor chooses to use water cleaning, and the existing coating contains lead, all water and debris shall be collected for proper disposal.

Whether or not the surfaces are pre-cleaned using water, the tops of the pier caps and abutments shall be cleaned free of dirt, paint chips, insect and animal nests, bird droppings and other foreign matter and the debris collected for proper disposal. If water is used for this cleaning, it shall be collected for disposal.

Prior to mechanical cleaning, oil, grease, and other soluble contaminants on bare steel or rusted surfaces shall be removed by solvent cleaning according to SSPC-SP1.

- d) Water Cleaning Between Coats. When foreign matter has accumulated on a newly applied coat, washing shall be performed prior to the application of subsequent coats. The water does not need to be collected unless it contacts existing lead containing coatings.

Laminar and Stratified Rust. All laminar and stratified rust that has formed on the existing steel surfaces shall be removed. Pack rust formed along the perimeter of mating surfaces of connected plates or shapes of structural steel shall be removed to the extent feasible without mechanically detaching the mating surface. Any pack rust remaining after cleaning the mating

surfaces shall be tight and intact when examined using a dull putty knife. The tools used to remove these corrosion products shall be identified in the submittals and accepted by the Engineer. If the surface preparation or removal of rust results in nicks or gouges, the work shall be suspended, and the damaged areas repaired to the satisfaction of the Engineer, at the Contractor's expense. The Contractor shall also demonstrate that he/she has made the necessary adjustments to prevent a reoccurrence of the damage prior to resuming work.

Surface Preparation (HOLD POINT). One or more of the following methods of surface preparation shall be used as specified on the plans. When a method of surface preparation is specified, it applies to the entire surface, including areas that may be concealed by the containment connection points. In each case, as part of the surface preparation process, soluble salts shall be remediated as specified under "Soluble Salt Remediation". The Contractor shall also note that the surface of the steel beneath the existing coating system may contain corrosion and/or mill scale. Removal of said corrosion and/or mill scale, when specified, shall be considered included in this work and no extra compensation will be allowed.

When a particular cleaning method is specified for use in distinct zones on the bridge, the cleaning shall extend into the existing surrounding paint until a sound border is achieved. The edge of the existing paint is considered to be sound and intact if it can not be lifted by probing the edge with a dull putty knife. The sound paint shall be feathered for a minimum of 40 mm (1 1/2 in.) to achieve a smooth transition between the prepared steel and the existing coatings. Sanders with vacuum attachments, which have been approved by the Engineer, shall be used as necessary to accomplish the feathering.

- a) Limited Access Areas: A best effort with the specified methods of cleaning shall be performed in limited access areas such as the backsides of rivets inside built up box members. The equipment being used for the majority of the cleaning may need to be supplemented with other commercially available equipment, such as angle nozzles, to properly clean the limited access areas. The acceptability of the best effort cleaning in these areas is at the sole discretion of the Engineer.
- b) Near White Metal Blast Cleaning: This surface preparation shall be accomplished according to the requirements of Near White Metal Blast Cleaning SSPC-SP 10. The designated surfaces shall be prepared by dry abrasive blast cleaning, wet abrasive blast cleaning, or water jetting with abrasive injection. A Near White Metal Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining.

Random staining shall be limited to no more than 5 percent of each 58 sq cm (9 sq in.) of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. With the exception of crevices as defined below, surface discoloration is considered to be a residue that must be removed, rather than a stain, if it possesses enough mass or thickness that it can be removed as a powder or in chips when scraped with a pocketknife.

A surface profile shall be created on the steel as defined later under "Surface Profile."



At the discretion of the Engineer, after a best effort cleaning, slight traces of existing coating may be permitted to remain within crevices such as those created between rivets, bolts, and plates, and the underlying steel. When traces of coating are permitted to remain, the coating shall be tightly bonded when examined by probing with a dull putty knife. The traces of coating shall be confined to the bottom portion of the crevices only, and shall not extend onto the surrounding steel or plate or onto the outer surface of the rivets or bolts. Pitted steel is excluded from exemption considerations and shall be cleaned according to SSPC-SP10.

If hackles or slivers are visible on the steel surface after cleaning, the Contractor shall remove them by grinding followed by reblast cleaning. At the discretion of the Engineer, the use of power tools to clean the localized areas after grinding, and to establish a surface profile acceptable to the coating manufacturer, can be used in lieu of blast cleaning.

If the surfaces are prepared using wet abrasive methods, attention shall be paid to tightly configured areas to assure that the preparation is thorough. After surface preparation is completed, the surfaces, surrounding steel, and containment materials/scaffolding shall be rinsed to remove abrasive dust and debris. Potable water shall be used for all operations. An inhibitor may be added to the supply water and/or rinse water to prevent flash rusting. If a rust inhibitor is proposed, the Contractor shall provide a sample of the proposed inhibitor together with a letter from the coating manufacturer indicating that the inhibitor is suitable for use with their products. The surfaces shall be allowed to completely dry before the application of any coating.

- c) Commercial Grade Power Tool Cleaning: This surface preparation shall be accomplished according to the requirements of Commercial Grade Power Tool Cleaning, SSPC-SP15. The designated surfaces shall be completely cleaned with power tools. A Commercial Grade Power Tool Cleaned surface, when viewed without magnification, is free of all visible oil, grease, dirt, rust, coating, oxides, mill scale, corrosion products, and other foreign matter, except for staining. In previously pitted areas, slight residues of rust and paint may also be left in the bottoms of pits.

Random staining shall be limited to no more than 33 percent of each 58 sq cm (9 sq in.) of surface area. Allowable staining may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Surface discoloration is considered to be a residue that must be removed, rather than a stain, if it possesses enough mass or thickness that it can be removed as a powder or in chips when scraped with a pocketknife.

A surface profile shall be created on the steel as defined later under "Surface Profile."

At the Contractor's option, Near White Metal Blast Cleaning may be substituted for Power Tool Cleaning – Commercial Grade, as long as containment systems appropriate for abrasive blast cleaning are utilized and there is no additional cost to the Department.

- d) Power Tool Cleaning – Modified SP3: This surface preparation shall be accomplished according to the requirements of SSPC-SP3, Power Tool Cleaning except as modified as follows. The designated surfaces shall be cleaned with power tools. A power tool

cleaned surface shall be free of all loose rust, loose mill scale, loose and peeling paint, and loose rust that is bleeding through and/or penetrating the coating. All locations of visible corrosion and rust bleed, exposed or lifting mill scale, and lifting or loose paint shall be prepared using the power tools.

Upon completion of the cleaning, rust, rust bleed, mill scale and surrounding paint are permitted to remain if they can not be lifted using a dull putty knife.

Power Tool Cleaning of Shop Primed Steel. When steel coated with only a prime coat of inorganic or organic zinc is specified to be cleaned, this work shall be accomplished as follows. After cleaning the surface as specified under "Water Cleaning of Non-Lead Coatings Prior to Overcoating," damaged and rusted areas shall be spot cleaned according Power Tool Cleaning -Modified SSPC-SP3. The edges of the coating surrounding the spot repairs shall be feathered.

Abrasives. When abrasive blast cleaning is specified, it shall be performed using either expendable abrasives (other than silica sand) or recyclable steel grit abrasives. Expendable abrasives shall be used one time and disposed of. Abrasive suppliers shall certify that the expendable abrasives meet the requirements of SSPC-AB1 and that recyclable steel grit abrasives meet AB3. The Contractor shall verify that recycled abrasives meet the requirements of SSPC-AB2 during use. All surfaces prepared with abrasives not meeting the SSPC-AB1, AB2, or AB3 requirements, as applicable, shall be solvent cleaned or low pressure water cleaned as directed by the Engineer, and reblast cleaned at the Contractor's expense.

Surface Profile (HOLD POINT). The abrasives used for blast cleaning shall have a gradation such that the abrasive will produce a uniform surface profile of 38 to 90 microns (1.5 to 3.5 mils). If the profile requirements of the coating manufacturer are more restrictive, advise the Engineer and comply with the more restrictive requirements. For recycled abrasives, an appropriate operating mix shall be maintained in order to control the profile within these limits.

The surface profile for the Power Tool Cleaning - Commercial Grade shall be within the range specified by the coating manufacturer, but not less than 50 microns (2.0 mils).

The surface profile produced by the Contractor's surface preparation procedures shall be determined by replica tape and spring micrometer at the beginning of the work, and each day that surface preparation is performed. Areas having unacceptable measurements shall be further tested to determine the limits of the deficient area. The replica tape shall be attached to the daily report.

When unacceptable profiles are produced, work shall be suspended. The Contractor shall submit a plan for the necessary adjustments to insure that the correct surface profile is achieved on all surfaces. The Contractor shall not resume work until the new profile is verified by the QA observations, and the Engineer confirms, in writing, that the profile is acceptable.

Soluble Salt Remediation (HOLD POINT). The Contractor shall implement surface preparation procedures and processes that will remove chloride from the surfaces. Surfaces that may be contaminated with chloride include, but are not limited to, expansion joints and all areas that are subject to roadway splash or run off such as fascia beams and stringers.

Methods of chloride removal may include, but are not limited to, steam cleaning or pressure washing with or without the addition of a chemical soluble salt remover as approved by the coating manufacturer, and scrubbing before or after initial paint removal. The Contractor may also elect to clean the steel and allow it to rust overnight followed by recleaning, or by utilizing blends of fine and coarse abrasives during blast cleaning, wet abrasive/water jetting methods of preparation, or combinations of the above. If steam or water cleaning methods of chloride removal are utilized over surfaces where the coating has been completely removed, and the water does not contact any lead containing coatings, the water does not have to be collected. The Contractor shall provide the proposed procedures for chloride remediation in the Surface Preparation/Painting Plan.

Upon completion of the chloride remediation steps, the Contractor shall use cell methods of field chloride extraction and test procedures (e.g., silver dichromate) accepted by the Engineer, to test representative surfaces that were previously rusted (e.g., pitted steel) for the presence of remaining chlorides. Remaining chloride levels shall be no greater than  $7\mu\text{g}/\text{sq cm}$  as read directly from the surface without any multiplier applied to the results. The testing must be performed, and the results must be acceptable, prior to painting each day.

A minimum of 5 tests per 93 sq m (1000 sq ft) or fraction thereof completed in a given day, shall be conducted at project start up. If results greater than  $7\mu\text{g}/\text{sq cm}$  are detected, the surfaces shall be recleaned and retested at the same frequency. If acceptable results are achieved on three consecutive days in which testing is conducted, the test frequency may be reduced to 1 test per 93 sq m (1000 sq ft) prepared each day provided the chloride remediation process remains unchanged. If unacceptable results are encountered, or the methods of chloride remediation are changed, the Contractor shall resume testing at a frequency of 5 tests per 93 sq m (1000 sq ft).

Following successful chloride testing the chloride test areas shall be cleaned. Commercial Grade Power Tool Cleaning can be used to clean the test locations when the specified degree of cleaning is SSPC-SP10.

Surface Condition Prior to Painting (HOLD POINT). Prepared surfaces, shall meet the requirements of the respective degrees of cleaning immediately prior to painting, and shall be painted before rusting appears on the surface. If rust appears or bare steel remains unpainted for more than 12 hours, the affected area shall be prepared again at the expense of the Contractor.

All loose paint and surface preparation cleaning residue on bridge steel surfaces, scaffolding and platforms, containment materials, and tops of abutments and pier caps shall be removed prior to painting. When lead paint is being disturbed, cleaning shall be accomplished by HEPA vacuuming unless it is conducted within a containment that is designed with a ventilation system capable of collecting the airborne dust and debris created by sweeping and blowing with compressed air.

The quality of surface preparation and cleaning of surface dust and debris must be accepted by the Engineer prior to painting. The Engineer has the right to reject any work that was performed without adequate provision for QA observations to accept the degree of cleaning. Rejected coating work shall be removed and replaced at the Contractor's expense.

General Paint Requirements. Paint storage, mixing, and application shall be accomplished according to these specifications and as specified in the paint manufacturer's written instructions and product data sheets for the paint system used. In the event of a conflict between these specifications and the coating manufacturers' instructions and data sheets, the Contractor shall advise the Engineer and comply with the Engineer's written resolution. Until a resolution is provided, the most restrictive conditions shall apply.

Unless noted otherwise, If a new concrete deck or repair to an existing deck is required, painting shall be done after the deck is placed and the forms have been removed.

- a) **Paint Storage and Mixing.** All Paint shall be stored according to the manufacturer's published instructions, including handling, temperatures, and warming as required prior to mixing. All coatings shall be supplied in sealed containers bearing the manufacturers name, product designation, batch number and mixing/thinning instructions. Leaking containers shall not be used.

Mixing shall be according to the manufacturer's instructions. Thinning shall be performed using thinner provided by the manufacturer, and only to the extent allowed by the manufacturer's written instructions. In no case shall thinning be permitted that would cause the coating to exceed the local Volatile Organic Compound (VOC) emission restrictions. For multiple component paints, only complete kits shall be mixed and used. Partial mixing is not allowed.

The ingredients in the containers of paint shall be thoroughly mixed by mechanical power mixers according to the manufacturer's instructions, in the original containers before use or mixing with other containers of paint. The paint shall be mixed in a manner that will break up all lumps, completely disperse pigment and result in a uniform composition. Paint shall be carefully examined after mixing for uniformity and to verify that no unmixed pigment remains on the bottom of the container. Excessive skinning or partial hardening due to improper or prolonged storage will be cause for rejection of the paint, even though it may have been previously inspected and accepted.

Multiple component coatings shall be discarded after the expiration of the pot life. Single component paint shall not remain in spray pots, painters buckets, etc. overnight. It shall be stored in a covered container and remixed before use.

The Engineer reserves the right to sample field paint (individual components and/or the mixed material) and have it analyzed. If the paint does not meet the product requirements due to excessive thinning or because of other field problems, the coating shall be removed from that section of the structure and replaced as directed by the Engineer.

- b) **Application Methods.** Unless prohibited by the coating manufacturer's written instructions, paint may be applied by spray methods, rollers, or brushes. If applied with conventional or airless spray methods, paint shall be applied in a uniform layer with overlapping at the edges of the spray pattern.

The painters shall monitor the wet film thickness of each coat during application. The wet film thickness shall be calculated based on the solids by volume of the material and the amount of thinner added. When the new coating is applied over an existing system,

routine QC inspections of the wet film thickness shall be performed in addition to the painter's checks in order to establish that a proper film build is being applied.

When brushes or rollers are used to apply the coating, additional applications may be required to achieve the specified thickness per layer.

- c) Painting Shop Primed Steel. After cleaning, rusted and damaged areas shall be touched up using the same primer specified for painting the existing structure. The intermediate and finish coats specified for painting the existing structure shall be applied to the steel. When inorganic zinc has been used as the shop primer, a mist coat of the intermediate coat shall be applied first in order to prevent pinholing and bubbling.
- d) Recoating and Film Continuity (HOLD POINT for each coat). Paint shall be considered dry for recoating according to the time/temperature/humidity criteria provided in the manufacturer's instructions and when an additional coat can be applied without the development of film irregularities; such as lifting, wrinkling, or loss of adhesion of the under coat. If surfaces are contaminated, washing shall be accomplished prior to intermediate and final coats. Wash water does not have to be collected unless the water contacts existing lead containing coatings.

Painting shall be done in a neat and workmanlike manner. Each coat of paint shall be applied as a continuous film of uniform thickness free of defects including, but not limited to, runs, sags, overspray, dryspray, pinholes, voids, skips, misses, and shadow-through. Defects such as runs and sags shall be brushed out immediately during application.

Paint Systems. The paint system(s) from the list below shall be applied as specified.

The paint manufacturer's relative humidity, dew point, and material, surface, and ambient temperature restrictions shall be provided with the submittals and shall be strictly followed. Written recommendations from the paint manufacturer for the length of time each coat must be protected from cold or inclement weather (e.g., exposure to rain), during the drying period shall be included in the submittals. Upon acceptance by the Engineer, these times shall be used to govern the duration that protection must be maintained during drying.

Where stripe coats are indicated, the Contractor shall apply an additional coat to edges, rivets, bolts, crevices, welds, and similar surface irregularities. The stripe coat shall be applied by brush and/or spray to thoroughly work the coating into or on the irregular surfaces, and shall extend onto the surrounding steel a minimum of 25 mm (1 in.) in all directions. The purpose of the stripe coat is to build additional thickness and to assure complete coverage of these areas.

The stripe coat may be applied as part of the application of the full coat unless prohibited by the coating manufacturer. If applied as part of the application process of the full coat, the stripe coat shall be allowed to dry for a minimum of 10 minutes in order to allow Contractor QC personnel to verify that the coat was applied. If a wet-on-wet stripe coat is prohibited by the coating manufacturer or brush or roller application of the full coat pulls the underlying stripe coat, the stripe coat shall dry according to the manufacturers' recommended drying times prior to the application of the full coat. In the case of the prime coat, the full coat can also be applied first to protect the steel, followed by the stripe coat after the full coat has dried.

- a) System 1 – OZ/E/U – for Bare Steel: System 1 shall consist of the application of a full coat of organic (epoxy) zinc-rich primer, a full intermediate coat of epoxy, and a full finish coat of aliphatic urethane. Stripe coats of the prime and finish coats shall be applied. The film thicknesses of the full coats shall be as follows, measured according to SSPC-PA2:

- One full coat of organic zinc-rich primer between 90 and 125 microns (3.5 and 5.0 mils) dry film thickness. The prime coat shall be tinted to a color that contrasts with the steel surface.
- One full intermediate coat of epoxy between 75 and 150 microns (3.0 and 6.0 mils) dry film thickness. The intermediate coat shall be a contrasting color to both the first coat and finish coat.
- One full finish coat of aliphatic urethane between 65 and 100 microns (2.5 and 4.0 mils) dry film thickness. Finish coat color shall be according to contract plans.

The total dry film thickness for this system, exclusive of areas receiving the stripe coats, shall be between 225 and 375 microns (9.0 and 15.0 mils).

- b) System 2 – PS/EM/U – for Overcoating an Existing System: System 2 shall consist of the application of a full coat of epoxy penetrating sealer, a spot intermediate coat of aluminum epoxy mastic and a stripe and full finish coat of aliphatic urethane.

A full coat of epoxy penetrating sealer shall be applied to all surfaces following surface preparation. A spot intermediate coat shall consist of the application of one coat of the aluminum epoxy mastic on all areas where rust is evident and areas where the old paint has been removed, feathered and/or damaged prior to, during or after the cleaning and surface preparation operations. After the spot intermediate, a stripe coat and full finish coat of aliphatic urethane shall be applied. The film thicknesses shall be as follows, measured according to SSPC-PA2:

- One full coat of epoxy penetrating sealer between 25 and 50 microns (1.0 and 2.0 mils) dry film thickness.
- One spot coat of aluminum epoxy mastic between 125 and 175 microns (5.0 and 7.0 mils) dry film thickness. The color shall contrast with the finish coat.
- One full finish coat of aliphatic urethane between 65 and 100 microns (2.5 and 4.0 mils) dry film thickness. Finish coat color shall be according to contract plans.

The total dry film thickness for this system, exclusive of the stripe coat, shall be between 215 and 325 microns (8.5 and 13.0 mils). The existing coating thickness to remain under the overcoat must be verified in order to obtain accurate total dry film thickness measurements.

- c) System 3 – EM/EM/AC – for Bare Steel: System 3 shall consist of the application of two full coats of aluminum epoxy mastic and a full finish coat of waterborne acrylic. Stripe coats for first coat of epoxy mastic and the finish coat shall be applied. The film thicknesses of the full coats shall be as follows, measured according to SSPC-PA2:

- One full coat of aluminum epoxy mastic between 125 and 175 microns (5.0 and 7.0 mils) dry film thickness. The first coat of aluminum epoxy mastic shall be tinted a contrasting color with the blast cleaned surface and the second coat.
- One full intermediate coat of aluminum epoxy mastic between 125 and 175 microns (5.0 and 7.0 mils) dry film thickness. The intermediate coat shall be a contrasting color to the first coat and the finish coat.
- A full finish coat of waterborne acrylic between 50 and 100 microns (2.0 and 4.0 mils) dry film thickness. Finish coat color shall be according to contract plans.

The total dry film thickness for this system, exclusive of areas receiving the stripe coats, shall be between 360 and 450 microns (12.0 and 18.0 mils).

- d) System 4 – PS/EM/AC – for Overcoating an Existing System: System 4 shall consist of the application of a full coat of epoxy penetrating sealer, a spot intermediate coat of aluminum epoxy mastic and a stripe and full finish coat of waterborne acrylic.

A full coat of epoxy penetrating sealer shall be applied to all surfaces following surface preparation. A spot intermediate coat shall consist of the application of one coat of the aluminum epoxy mastic on all areas where rust is evident and areas where the old paint has been removed, feathered and/or damaged prior to, during or after the cleaning and surface preparation operations. After the spot intermediate, a stripe coat and full finish coat of waterborne acrylic shall be applied. The film thicknesses shall be as follows, measured according to SSPC-PA2:

- One full coat of epoxy penetrating sealer between 25 and 50 microns (1.0 and 2.0 mils) dry film thickness.
- One spot coat of aluminum epoxy mastic between 125 and 175 microns (5.0 and 7.0 mils) dry film thickness. The color shall contrast with the finish coat.
- One full finish coat of waterborne acrylic between 50 and 100 microns (2.0 and 4.0 mils) dry film thickness. Finish coat color shall be according to contract plans.

The total dry film thickness for this system, exclusive of the stripe coat, shall be between 200 and 325 microns (8.0 and 13.0 mils). The existing coating thickness to remain under the overcoat must be verified in order to obtain accurate total dry film thickness measurements.

- e) System 5 – MCU – for Bare Steel: System 5 shall consist of the application of a full coat of moisture cure urethane (MCU) zinc primer, a full coat of MCU intermediate, and a full coat of MCU finish. Stripe coats of the prime and finish coats shall be applied. The contractor shall comply with the manufacturer's requirements for drying times between the application of the stripe coats and the full coats. The film thicknesses of the full coats shall be as follows, measured according to SSPC-PA2:

- One full coat of MCU zinc primer between 75 and 125 microns (3.0 and 5.0 mils) dry film thickness. The prime coat shall be tinted to a color that contrasts with the steel surface.
- One full MCU intermediate coat between 75 and 100 microns (3.0 and 4.0 mils) dry film thickness. The intermediate coat shall be a contrasting color to both the first coat and finish coat.
- One full MCU finish coat between 50 and 100 microns (2.0 and 4.0 mils) dry film thickness. Finish coat color shall be according to contract plans.

The total dry film thickness for this system, exclusive of areas receiving the stripe coats, shall be between 200 and 325 microns (8.0 and 13.0 mils).

- f) System 6 – MCU – for Overcoating an Existing System: System 6 shall consist of the application of a full coat of moisture cure urethane (MCU) penetrating sealer, a spot coat of MCU intermediate, and a stripe and full coat of MCU finish.

A full coat of MCU penetrating sealer shall be applied to all surfaces following surface preparation. A spot intermediate coat shall consist of the application of one coat of MCU intermediate on all areas where rust is evident and areas where the old paint has been removed, feathered and/or damaged prior to, during or after the cleaning and surface preparation operations. After the spot intermediate, a stripe coat and full coat of MCU finish shall be applied. The contractor shall comply with the manufacturer's requirements for drying time between the application of the stripe coat and the full finish coat. The film thicknesses shall be as follows, measured according to SSPC-PA2:

- One full coat of MCU sealer between 25 and 50 microns (1.0 and 2.0 mils) dry film thickness.
- One full MCU intermediate coat between 75 and 100 microns (3.0 and 4.0 mils) dry film thickness. The color shall contrast with the finish coat.
- One full MCU finish coat 50 and 100 microns (2.0 and 4.0 mils) dry film thickness. Finish coat color shall be according to contract plans.

The total dry film thickness for this system, exclusive of areas receiving the stripe coats, shall be between 150 and 250 microns (6.0 and 10.0 mils). The existing coating thickness to remain under the overcoat must be verified in order to obtain accurate total dry film thickness measurements.

Repair of Damage to New Coating System and Areas Concealed by Containment. The Contractor shall repair all damage to the newly installed coating system and areas concealed by the containment/protective covering attachment points, at no cost to the Department. If the damage extends to the substrate and the original preparation involved abrasive blast cleaning, the damaged areas shall be prepared to Power Tool Cleaning - Commercial Grade. If the



original preparation was other than blast cleaning or the damage does not extend to the substrate, the loose, fractured paint shall be cleaned to Power Tool Cleaning – Modified SP3.

The surrounding coating at each repair location shall be feathered for a minimum distance of 40 mm (1 1/2 in.) to achieve a smooth transition between the prepared areas and the existing coating.

If the bare steel is exposed, all coats shall be applied to the prepared area. If only the intermediate and finish coats are damaged, the intermediate and finish shall be applied. If only the finish coat is damaged, the finish shall be applied.

Special Instructions.

- a) At the completion of the work, the Contractor shall stencil the painting date and the paint code on the bridge. The letters shall be capitals, not less than 50 mm (2 in.) and not more than 75 mm (3 in.) in height.

The stencil shall contain the following wording "PAINTED BY (insert the name of the Contractor)" and shall show the month and year in which the painting was completed, followed by the appropriate code for the coating material applied, all stenciled on successive lines:

CODE U (for field applied System 3 or System 4).

CODE Z (for field applied System 1 or System 2).

CODE AA (for field applied System 5 or System 6).

This information shall be stenciled on the cover plate of a truss end post near the top of the railing, or on the outside face of an outside stringer near one end of the bridge, or at some equally visible surface near the end of the bridge, as designated by the Engineer.

- b) All surfaces painted inadvertently shall be cleaned immediately.

It is understood and agreed that the cost of all work outlined above, unless otherwise specified, has been included in the bid, and no extra compensation will be allowed.

Basis of Payment. This work shall be paid for at the contract Lump Sum price for CLEANING AND PAINTING STEEL BRIDGE, at the designated location, or for CLEANING AND PAINTING the structure or portions thereof described. Payment will not be authorized until all requirements for surface preparation and painting have been fulfilled as described in this specification, including the preparation and submittal of all QC documentation. Payment will also not be authorized for non-conforming work until the discrepancy is resolved in writing.

## **Appendix 1 – Reference List**

The Contractor shall maintain the following regulations and references on site for the duration of the project:

- Illinois Environmental Protection Act
- ASTM D 4214, Standard Test Method for Evaluating Degree of Chalking of Exterior Paint Films
- ASTM D 4285, Standard Test Method for Indicating Oil or Water in Compressed Air
- SSPC-AB 1, Mineral and Slag Abrasives
- SSPC-AB 2, Specification for Cleanliness of Recycled Ferrous Metallic Abrasives
- SSPC-AB 3, Newly Manufactured or Re-Manufactured Steel Abrasives
- SSPC-PA 2, Measurement of Dry Coating Thickness with Magnetic Gages
- SSPC-QP 1, Standard Procedure for Evaluating Painting Contractors (Field Application to Complex Structures)
- SSPC-QP 2, Standard Procedure for Evaluating the Qualifications of Painting Contractors to Remove Hazardous Paint
- SSPC-SP 1, Solvent Cleaning
- SSPC-SP 3, Power Tool Cleaning
- SSPC-SP 10/NACE No. 2, Near White Metal Blast Cleaning
- SSPC-SP 12/NACE No. 5, Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating
- SSPC-SP15, Commercial Grade Power Tool Cleaning
- SSPC-VIS 1, Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning
- SSPC-VIS 3, Visual Standard for Power- and Hand-Tool Cleaned Steel
- SSPC-VIS 4, Guide and Reference Photographs for Steel Cleaned by Water Jetting
- SSPC-VIS 5, Guide and Reference Photographs for Steel Prepared by Wet Abrasive Blast Cleaning
- The paint manufacturer's application instructions, MSDS and product data sheets

## **CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES**

Effective: October 2, 2001

**Revised: August 18, 2004**

Description. This work shall consist of the containment, collection, temporary storage, transportation and disposal of waste from lead paint removal projects. Waste requiring containment and control includes, but is not limited to, old paint, spent abrasives, corrosion products, mill scale, dirt, dust, grease, oil, salts, and water used for cleaning the surface of existing lead coatings prior to overcoating.

General. The existing coatings contain lead and may also contain other toxic metals. This specification provides the requirements for containment and for the protection of the public, and the environment from exposure to harmful levels of toxic metals that may be present in the paint being removed or repaired. The Contractor shall take reasonable and appropriate precautions to protect the public from the inhalation or ingestion of dust or debris from the operations, and is responsible for the clean-up of all spills of waste at no additional cost to the Department.

The Contractor shall comply with the requirements of this Specification and all applicable Federal, State, and Local laws, codes, and regulations, including, but not limited to the regulations of the United States Environmental Protection Agency (USEPA), Occupational Safety and Health Administration (OSHA), and Illinois Environmental Protection Agency (IEPA). The Contractor shall comply with all applicable regulations even if the regulation is not specifically referenced herein. If a Federal, State, or Local regulation is more restrictive than the requirements of this Specification, the more restrictive requirements shall prevail.

Submittals. The Contractor shall submit for Engineer review and acceptance, the following drawings and plans for accomplishing the work. The submittals shall be provided within 30 days of execution of the contract unless given written permission by the Engineer to submit them at a later date. Work cannot proceed until the submittals are accepted by the Engineer. Details for each of the plans are presented within the body of this specification. The Contractor shall also maintain on site, copies of the standards and regulations referenced herein (list provided in appendix 1).

Containment Plans. The containment plans shall include drawings, equipment specifications, and calculations (wind load, air flow and ventilation when negative pressure is specified). The plans shall include copies of the manufacturer's specifications for the containment materials and equipment that will be used to accomplish containment and ventilation.

When required by the contract plans, the submittal shall provide calculations that assure the structural integrity of the bridge when it supports the containment and the calculations and drawings shall be signed and sealed by a Structural Engineer licensed in the state of Illinois.

When working over the railroad or navigable waterways, the Department will notify the respective agencies that work is being planned. Unless otherwise directed by the Engineer, the Contractor is responsible for follow up contact, and shall provide evidence that the railroad, Coast Guard, Corps of Engineers, and other applicable agencies are satisfied with the clearance provided and other safety measures that are proposed.

**Environmental Monitoring Plan.** The Environmental Monitoring Plan shall address the visual inspections and clean up of the soil and water that the Contractor will perform, including final project inspection and cleanup. The plan shall address the daily visible emissions observations that will be performed and the corrective action that will be implemented in the event emissions or releases occur. Provisions for high volume ambient air monitoring, the Quality Assurance (QA) monitoring plan, laboratory analysis and reporting shall be provided together with the name and qualifications of the laboratory that is proposed for Total Suspended Particulate (TSP)-lead analysis.

**Waste Management Plan.** The Waste Management Plan shall address all aspects of waste handling, storage, testing, hauling and disposal. Include the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. Submit the name and qualifications of the laboratory proposed for Toxicity Characteristic Leaching Procedure (TCLP) analysis. If the use of abrasive additives is proposed, provide the name of the additive, the premixed ratio of additive to abrasive being provided by the supplier, and a letter from the supplier of the additive indicating IEPA acceptance of the material. Note that the use of any steel or iron based material, such as but not limited to grit, shot, fines, or filings as an abrasive additive is prohibited.

**Contingency Plan.** The Contractor shall prepare a contingency plan for emergencies including fire, accident, failure of power, failure of dust collection system, failure of supplied air system or any other event that may require modification of standard operating procedures during lead removal. The plan shall include specific procedures to ensure safe egress and proper medical attention in the event of an emergency.

When the Engineer accepts the submittals, the Contractor will receive written notification. The Contractor shall not begin any work until the Engineer has accepted the submittals. The Contractor shall not construe Engineer acceptance of the submittals to imply approval of any particular method or sequence for conducting the work, or for addressing health and safety concerns. Acceptance of the plans does not relieve the Contractor from the responsibility to conduct the work according to the requirements of Federal, State, or Local regulations, this specification, or to adequately protect the health and safety of all workers involved in the project and any members of the public who may be affected by the project. The Contractor remains solely responsible for the adequacy and completeness of the programs and work practices, and adherence to them.

**Quality Control (QC) Inspections.** The Contractor shall perform first line, in process QC inspections of all environmental control and waste handling aspects of the project to verify compliance with these specification requirements and the accepted drawings and plans. The Contractor shall use the IDOT Environmental Daily Report form supplied by the Engineer to record the results of the inspections. The completed reports shall be turned into the Engineer before work resumes the following day. Contractor QC inspections shall include, but not be limited to the following:

- Proper installation and continued performance of the containment system(s) in accordance with the approved drawings.
- Visual inspections of emissions into the air and verification that the cause(s) for any unacceptable emissions is corrected.

- Set up, calibration, operation, and maintenance of the regulated area and high volume ambient air monitoring equipment, including proper shipment of cassettes/filters to the laboratory for analysis. Included is verification that the Engineer receives the results within the time frames specified and that appropriate steps are taken to correct work practices or containment in the event of unacceptable results.
- Visual inspections of spills or deposits of contaminated materials into the water or onto the ground, pavement, soil, or slope protection. Included is verification that proper cleanup is undertaken and that the cause(s) of unacceptable releases is corrected.
- Proper implementation of the waste management plan including laboratory analysis and providing the results to the Engineer within the time frames specified herein.
- Proper implementation of the contingency plans for emergencies.

The personnel providing the QC inspections shall be SSPC-C3 certified or equal and shall provide evidence of successful completion of 2 projects of similar or greater complexity and scope that have been completed in the last 2 years. References shall include the name, address, and telephone number of a contact person employed by the bridge owner.

Quality Assurance (QA) Observations. The Engineer will conduct QA observations of any or all of the QC monitoring inspections that are undertaken. The presence or activity of Engineer observations in no way relieves the Contractor of the responsibility to provide all necessary daily QC inspections of its own and to comply with all requirements of this Specification.

Containment Requirements. The Contractor shall install and maintain containment systems surrounding the work for the purpose of controlling emissions of dust and debris according to the requirements of this specification. Working platforms and containment materials that are used shall be firm and stable and platforms shall be designed to support the workers, inspectors, spent surface preparation media (e.g., abrasives), and equipment during all phases of surface preparation and painting. Platforms, cables, and other supporting structures shall be designed according to OSHA regulations. If the containment needs to be attached to the structure, the containment shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.

The containment shall be dropped in the event of sustained winds of 64 kph (40 mph) or greater and all materials and equipment secured.

The Contractor shall provide drawings showing the containment system and indicating the method(s) of supporting the working platforms and containment materials to each other and to the bridge. When the use of negative pressure and airflow inside containment is specified, the Contractor shall provide all ventilation calculations and details on the equipment that will be used for achieving the specified airflow and dust collection.

When directed in the contract plans, the Contractor shall submit calculations and drawings, signed and sealed by a Structural Engineer licensed in the state of Illinois, that assure the structural integrity of the bridge under the live and dead loads imposed, including the design wind loading.

When working over railroads, the Contractor shall provide evidence that the proposed clearance and the safety provisions that will be in place (e.g., flagman) are acceptable to the railroad. In the case of work over navigable waters, the Contractor shall provide evidence that the proposed

clearance and provisions for installing or moving the containment out of navigation lanes is acceptable to authorities such as the Coast Guard and Army Corps of Engineers. The Contractor shall include plans for assuring that navigation lighting is not obscured, or if it is obscured, that temporary lighting is acceptable to the appropriate authorities (e.g., Coast Guard) and will be utilized.

Engineer review and acceptance of the drawings and calculations shall not relieve the Contractor from the responsibility for the safety of the working platforms and containment, and for providing ample ventilation to control worker and environmental exposures. After the work platforms and containment materials are erected additional measures may be needed to ensure worker safety according to OSHA regulations. The Contractor shall institute such measures at no additional cost to the Department.

Containment for the cleaning operation of this contract is defined as follows:

- The containment system shall maintain the work area free of visible emissions of dust and debris according to all provisions of this Specification, with no debris permitted outside of the regulated area.
- The containment systems shall comply with the specified SSPC Guide 6 classifications as presented in Table 1 for the method of paint removal utilized.
- TSP-lead in the air at monitoring locations selected by the Engineer shall comply with the requirements specified herein.

The Contractor shall take appropriate action to avoid personnel injury or damage to the structure from the installation and use of the containment system. If the Engineer determines that there is the potential for structural damage caused by the installed containment system, the Contractor shall take appropriate action to correct the situation.

In addition to complying with the specific containment requirements in Table 1 for each method of removal, the Contractor shall provide and maintain coverage over the ground in the areas to be cleaned. This coverage shall be capable of catching and containing surface preparation media, paint chips, and paint dust in the event of an accidental escape from the primary containment. The containment materials shall be cleaned of loose material prior to relocation or dismantling. Acceptable methods of cleaning include blowing down the surfaces with compressed air while the ventilation system is in operation, HEPA vacuuming, and/or wet wiping. If paint chips or dust is observed escaping from the containment materials during moving, all associated operations shall be halted and the materials and components recleaned.

The containment systems shall also meet the following requirements:

a) Dry Abrasive Blast Cleaning - Full Containment with Negative Pressure (SSPC Class 1A)

The enclosure shall be designed, installed, and maintained to sustain maximum anticipated wind forces, including negative pressure. Flapping edges of containment materials are prohibited and the integrity of all containment materials, seams, and seals shall be maintained for the duration of the project. Airflow inside containment shall be designed to provide visibility and reduce worker exposures to toxic metals according to OSHA

regulations and as specified in Table 1 and its accompanying text. When the location of the work on the bridge, or over lane closures permit, the blast enclosure shall extend a minimum of 1 m (3 ft) beyond the limits of surface preparation to allow the workers to blast away from, rather than into the seam between the containment and the structure. The blast enclosure shall have an entrance chamber to allow entrance and exit from the enclosure without allowing the escape of blasting residue.

If recyclable metallic abrasives are used, the Contractor shall operate the equipment in a manner that minimizes waste generation. Steps shall also be taken to minimize dust generation during the transfer of all abrasive/paint debris (expendable or recyclable abrasives) for recycling or disposal. Acceptable methods include, but are not limited to vacuuming, screw or belt conveyance systems, or manual conveyance. However manual conveyance is only permitted if the work is performed inside a containment that is equipped with an operating ventilation system capable of controlling the dust that is generated.

Appropriate filtration shall be used on the exhaust air of dust collection and abrasive recycling equipment as required to comply with IEPA regulations. The equipment shall be enclosed if visible dust and debris are being emitted and/or the regulated area or high volume monitor lead levels are not in compliance.

Areas beneath containment connection points that were shielded from abrasive blast cleaning shall be prepared by vacuum blast cleaning or vacuum-shrouded power tool cleaning after the containment is removed.

b) Vacuum Blast Cleaning within Containment (SSPC-Class 4A)

Vacuum blasting equipment shall be fully automatic and capable of cleaning and recycling the abrasive. The system shall be designed to deliver cleaned, recycled blasting abrasives and provide a closed system containment during blasting. The removed coating, mill scale, and corrosion shall be separated from the abrasive, and stored for disposal.

The Contractor shall attach containment materials around and under the work area to catch and contain abrasive and waste materials in the event of an accidental escape from the vacuum shroud. This containment is in addition to the ground covers specified earlier.

It is possible that the close proximity of some structural steel members, such as the end diaphragms or end cross-frames underneath transverse deck expansion joints, preclude the use of the vacuum blasting equipment for the removal of the old paint. For surfaces that are inaccessible for the nozzles of the vacuum blasting equipment, the Contractor shall remove the paint by means of full containment inside a complete enclosure as directed by the Engineer.

c) Vacuum-Shrouded Power Tool Cleaning within Containment (SSPC-Class 3P)

The Contractor shall utilize power tools equipped with vacuums and High Efficiency Particulate Air (HEPA) filters. The Contractor shall attach containment walls around the work area, and install containment materials beneath the work area to catch and contain waste materials in the event of an accidental escape from the vacuum shroud. This containment is in addition to the ground covers specified earlier and shall be installed within 3m (10 ft) of the areas being cleaned.

d) Power Tool Cleaning without Vacuum, within Containment (SSPC-Class 2P)

When the use of power tools without vacuum attachments is authorized by the Engineer, the Contractor shall securely install containment walls and flooring around the work area to capture and collect all debris that is generated. The containment material requirements for this Class 2P are similar to Class 3P used for vacuum-shrouded tools, but the supporting structure will be more substantial in Class 2P to better secure the containment materials from excessive movement that could lead to the loss of waste paint chips and debris. Containment beneath the work shall be within 3m (10ft) of the areas being cleaned, and is in addition to the ground covers specified earlier.

Water Washing, Water Jetting or Wet Abrasive Blast Cleaning within Containment (SSPC Class 2W-3W)

Water washing of the bridge for the purpose of removing chalk, dirt, grease, oil, bird nests, and other surface debris, and water jetting or wet abrasive blast cleaning for the purpose of removing paint and surface debris shall be conducted within a containment designed, installed, and maintained in order to capture and contain all water and waste materials. The containment shall consist of impermeable floors and lower walls to prevent the water and debris from escaping. Permeable upper walls and ceilings are acceptable provided the paint chips, debris, and water, other than mists, are collected. A fine mist passing through the permeable upper walls is acceptable, provided the environmental controls specified below are met. If paint chips, debris, or water, other than mists, escape the containment system, impermeable walls and ceilings shall be installed.

When water is used for surface cleaning, the collected water shall be filtered to separate the particulate from the water. Recycling of the water is preferred in order to reduce the volume of waste that is generated. The water after filtration shall be collected and disposed of according to the waste handling portions of this specification.

When a slurry is created by injecting water into the abrasive blast stream, the slurry need not be filtered to separate water from the particulate.

Environmental Controls and Monitoring. The Contractor shall prepare and submit to the Engineer for review and acceptance, an Environmental Monitoring Plan. The purpose of the plan is to address the observations and equipment monitoring undertaken by the Contractor to confirm that project dust and debris are not escaping the containment into the surrounding air, soil, and water.

- a) Soil and Water. Containment systems shall be maintained to prevent the escape of paint chips, abrasives, and other debris into the water, and onto the ground, soil, slope protection, and pavements. Releases or spills of, paint chips, abrasives, dust and debris that have become deposited on surrounding property, structures, equipment or vehicles, and bodies of water are unacceptable. If there are inadvertent spills or releases, the Contractor shall immediately shut down the emissions-producing operations, clean up the debris, and change work practices, modify the containment, or take other appropriate corrective action as needed to prevent similar releases from occurring in the future.

Water booms, boats with skimmers, or other means as necessary shall be used to capture and remove paint chips or project debris that falls or escapes into the water.



At the end of each workday at a minimum, the work area outside of containment, including ground tarpaulins, shall be inspected to verify that paint debris is not present. If debris is observed, it shall be removed by hand and HEPA-vacuuuming. If wet methods of preparation are used, the damp debris can remain overnight provided it is protected from accidental release by securely covering the waste, folding the waste into the ground tarps, or by other acceptable methods. Prior to commencing work the next day, the debris shall be removed.

Upon project completion, the ground and water in and around the project site are considered to have been properly cleaned if paint chips, paint removal media (e.g., spent abrasives), fuel, materials of construction, litter, or other project debris have been removed, even if the material being cleaned was a pre-existing condition.

- b) Visible Emissions. The Contractor shall conduct observations of visible emissions and releases on an ongoing daily basis when dust-producing activities are underway, such as paint removal, clean up, waste handling, and containment dismantling or relocation. Note that visible emissions observations do not apply to the fine mist that may escape through permeable containment materials when wet methods of preparation are used.

Visible emissions in excess of SSPC Guide 6, Level 1 (1% of the workday) are unacceptable. In an 8-hour workday, this equates to emissions of a cumulative duration no greater than 4.8 minutes (288 seconds). This criterion applies to scattered, random emissions of short duration. Sustained emissions from a given location (e.g., 1 minute or longer), regardless of the total length of emissions for the workday, are unacceptable and action shall be initiated to halt the emission.

If unacceptable visible emissions or releases are observed, the Contractor shall immediately shut down the emission-producing operations, clean up the debris, and change work practices, modify the containment, or take other appropriate corrective action as needed to prevent similar releases from occurring in the future.

- c) Ambient Air Monitoring. The Contractor shall collect and analyze air samples to evaluate levels of TSP-lead if there are sensitive receptors within 5 times the height of the structure or within 305 m (1000 ft) of the structure, whichever is greater. If sensitive receptors are not located within these limits, monitoring is not required. Sensitive receptors are areas of public presence or access including, but not limited to, homes, schools, parks, playgrounds, shopping areas, livestock areas, and businesses. The motoring public is not considered to be a sensitive receptor for the purpose of ambient air monitoring. The monitoring schedule shall be as follows:

- For dry abrasive blast cleaning monitoring shall be conducted full time during all days of dust-producing operations (e.g., paint removal, waste handling, containment movement, etc.).
- For wet abrasive blast cleaning, water jetting, or power tool cleaning, monitoring shall be conducted for the first 5 days of dust producing operations. If the results after 5 days are acceptable, monitoring may be discontinued. If the results are unacceptable, corrective action shall be initiated to correct the cause of the emissions, and monitoring shall continue for an additional 5 days. If the results are still unacceptable, the Engineer may direct that the monitoring continue full time.

- When monitoring is discontinued, if visible emissions are observed and/or the Contractor's containment system changes during the course of the project, then air monitoring will again be required for a minimum of two consecutive days until compliance is shown.

All ambient air monitoring shall be performed by the Contractor according to the accepted QA Monitoring Plan and according to EPA regulations 40 CFR Part 50 Appendix B, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method), and 40 CFR Part 50 Appendix G, Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air.

The Contractor shall provide up to 4 monitors per work site and all necessary calibration and support equipment, power to operate them, security (or arrangements to remove and replace the monitors daily), filters, flow chart recorders and overnight envelopes for shipping the filters to the laboratory. The number of monitors required will be indicated in the General Notes. The Contractor shall also contract with a laboratory acceptable to the Engineer for the analysis. The laboratory performing the filter analysis shall be a laboratory that is accredited under the American Industrial Hygiene Association (AIHA) Environmental Lead Laboratory Accreditation Program (ELLAP) for metals analysis and under the EPA National Lead Laboratory Accreditation Program (NLLAP).

The Contractor shall locate the monitors in areas of public exposure and in areas that will capture the maximum pollutant emissions resulting from the work. The Contractor shall identify the recommended monitoring sites in the Environmental Monitoring Plan. The monitors shall not be sited until the Engineer accepts the proposed locations.

Background samples shall be collected for three days prior to the start of work while no paint disturbance operations are underway. The background monitoring shall include two weekdays and one weekend day. The background monitoring shall coincide with the anticipated working hours for the paint removal operations, but shall last for a minimum of 8 hours each day.

The filters shall be removed and replaced with new ones daily. The Contractor shall advise the Engineer in advance when the filters will be removed and replaced. Each day for the first 5 days of monitoring, the Contractor shall send the filters together with chart recorders (to record the volume of air and the run time of the monitor) in an overnight service envelope to the laboratory for analysis. At the discretion of the Engineer, if the initial 5 days of monitoring on full time monitoring projects is acceptable, the filters may be sent to the laboratory every 3 days rather than every day.

TSP-lead results at each monitor location shall be less than 1.5  $\mu\text{g}/\text{cu m}$  per calendar quarter converted to a daily allowance using the formulas from SSPC Guide 6 as follows, except that the maximum 24-hour daily allowance shall be no greater than 6  $\mu\text{g}/\text{cu m}$ .

The formula for determining a 24-hour daily value based on the actual number of paint disturbance days expected to occur during the 90-day quarter is:

$$DA = (90 \div PD) \times 1.5 \mu\text{g}/\text{cu m}, \text{ where}$$

DA is the daily allowance, and  
PD is the number of preparation days anticipated in the 90-day period  
If the DA calculation is  $> 6.0 \mu\text{g}/\text{cu m}$ , use  $6.0 \mu\text{g}/\text{cu m}$ .

The formula for converting the 24-hour daily allowance to an adjusted daily allowance based on the length of the work shift each day (assuming that there are no lead emissions during the remaining non-working hours of the day) is:

$$\text{ADA} = \text{DA} (24 \div \text{H}), \text{ where}$$

ADA is the adjusted daily allowance,  
DA is the daily allowance, and  
H is the number of hours worked in 24 hours  
If the ADA calculation is  $> 15.0 \mu\text{g}/\text{cu m}$ , use  $15.0 \mu\text{g}/\text{cu m}$

The Contractor shall calibrate the monitors according to the manufacturer's written instructions upon mobilization to the site and quarterly. Each monitor shall be tagged with the calibration date, and calibration information shall be provided to the Engineer upon request.

The laboratory results shall be delivered to the Engineer within 7 days of shipping the filters to the laboratory. The report shall include:

1. Monitor identification, location
2. Cleaning location
3. Volume of air sampled
4. Sample period
5. Sample results expressed in terms of applicable standards i.e. micrograms per cubic meter on a 24 hour time weighted average, or as an adjusted daily allowance.
6. Comparison of the results with the acceptance criteria indicating whether the emissions are compliant.

Regulated Areas. Physically demarcated regulated area(s) shall be established around exposure producing operations at the OSHA Action Level for the toxic metal(s) present in the coating. The Contractor shall provide all required protective clothing and equipment for personnel entering into a regulated area. Unprotected street clothing is not permitted within the regulated areas.

Hygiene Facilities/Protective Clothing/Blood Tests. The Contractor shall provide clean lavatory and hand washing facilities according to OSHA regulations and confirm that employees wash hands, forearms, and face before breaks. The facilities shall be located at the perimeter of the regulated area in close proximity to the paint removal operation. Shower facilities shall be provided when workers' exposures exceed the Permissible Exposure Limit. Showers shall be located at each bridge site, or if allowed by OSHA regulations, at a central location to service multiple bridges. The shower and wash facilities shall be cleaned at least daily during use.

All wash and shower water shall be filtered and containerized. The Contractor is responsible for filtration, testing, and disposal of the water.

The Contractor shall make available to all IDOT project personnel a base line and post project blood level screening determined by the whole blood lead method, utilizing the Vena-Puncture technique. This screening shall be made available every 2 months for the first 6 months, and every 6 months thereafter.

The Contractor shall provide IDOT project personnel with all required protective clothing and equipment, including disposal or cleaning. Clothing and equipment includes but is not limited to disposable coveralls with hood, booties, disposable surgical gloves, hearing protection, and safety glasses. The protective clothing and equipment shall be provided and maintained on the job site for the exclusive, continuous and simultaneous use by the IDOT personnel. This equipment shall be suitable to allow inspection access to any area in which work is being performed.

All handwash and shower facilities shall be fully available for use by IDOT project personnel.

#### Site Emergencies.

a) Stop Work. The Contractor shall stop work at any time the conditions are not within specifications and take the appropriate corrective action. The stoppage will continue until conditions have been corrected. Standby time and cost required for corrective action is at the Contractor's expense. The occurrence of the following events shall be reported in writing to IDOT and shall require the Contractor to automatically stop lead paint removal and initiate clean up activities.

- Airborne lead levels at any of the high volume ambient air monitoring locations that exceed the limits in this specification, or airborne lead in excess of the OSHA Action Level at the boundary of the regulated area.
- Break in containment barriers.
- Visible emissions in excess of the specification tolerances.
- Loss of negative air pressure when negative air pressure is specified (e.g., for dry abrasive blast cleaning).
- Serious injury within the containment area.
- Fire or safety emergency
- Respiratory system failure
- Power failure

b) Contingency Plans and Arrangements. The Engineer will refer to the contingency plan for site specific instructions in the case of emergencies.

The Contractor shall prepare a contingency plan for emergencies including fire, accident, failure of power, failure of dust collection system, failure of supplied air system or any other event that may require modification of standard operating procedures during lead removal. The plan shall include specific procedures to ensure safe egress and proper medical attention in the event of an emergency. The Contractor shall post the telephone numbers and locations of emergency services including fire, ambulance, doctor, hospital, police, power company and telephone company on clean side of personnel decontamination area.

A two-way radio, or equal, as approved by the Engineer, capable of summoning emergency assistance shall be available at each bridge during the time the Contractor's personnel are

at the bridge site under this contract. The following emergency response equipment described in the contingency plan (generic form attached) shall be available during this time as well: an appropriate portable fire extinguisher, a 208 L (55 gal) drum, a 19 L (5 gal) pail, a long handled shovel, absorbent material (one bag).

A copy of the contingency plan shall be maintained at each bridge during cleaning operations and during the time the Contractor's personnel are at the bridge site under this contract. The Contractor shall designate the emergency coordinator(s) required who shall be responsible for the activities described.

An example of a contingency plan is included at the end of this Special Provision.

Collection, Temporary Storage, Transportation and Disposal of Waste. The Contractor and the Department are considered to be co-generators of the waste.

The Contractor is responsible for all aspects of waste collection, testing and identification, handling, storage, transportation, and disposal according to these specifications and all applicable Federal, State, and Local regulations. The Contractor shall provide for Engineer review and acceptance a Waste Management Plan that addresses all aspects of waste handling, storage, and testing, and provides the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. The Department will not perform any functions relating to the waste other than provide EPA identification numbers, provide the Contractor with the emergency response information, the emergency response telephone number required to be provided on the manifest, and to sign the waste manifest. The Engineer will obtain the identification numbers from the state and federal environmental protection agencies for the bridge(s) to be painted and furnish those to the Contractor.

All surface preparation/paint residues shall be collected daily and deposited in all-weather containers supplied by the Contractor as temporary storage. The storage area shall be secure to prevent unauthorized entry or tampering with the containers. Acceptable measures include storage within a fully enclosed (e.g., fenced in) and locked area, within a temporary building, or implementing other reasonable means to reduce the possibility of vandalism or exposure of the waste to the public or the environment (e.g., securing the lids or covers of waste containers and roll-off boxes). Waste shall not be stored outside of the containers. Waste shall be collected and transferred to bulk containers taking extra precautions as necessary to prevent the suspension of residues in air or contamination of surrounding surfaces. Precautions may include the transfer of the material within a tarpaulin enclosure. Transfer into roll-off boxes shall be planned to minimize the need for workers to enter the roll-off box.

No residues shall remain on uncontained surfaces overnight. Waste materials shall not be removed through floor drains or by throwing them over the side of the bridge. Flammable materials shall not be stored around or under any bridge structures.

The all-weather containers shall meet the requirements for the transportation of hazardous materials and as approved by the Department. Acceptable containers include covered roll-off boxes and 55-gallon drums (17H). The Contractor shall insure that no breaks and no deterioration of these containers occurs and shall maintain a written log of weekly inspections of the condition of the containers. A copy of the log shall be furnished to the Engineer upon request. The containers shall be kept closed and sealed from moisture except during the

addition of waste. Each container shall be permanently identified with the date that waste was placed into the container, contract number, hazardous waste name and ID number, and other information required by the IEPA.

The Contractor shall have each waste stream sampled for each project and tested by TCLP and according to EPA and disposal company requirements. The Engineer shall be notified in advance when the samples will be collected. The samples shall be collected and shipped for testing within the first week of the project, with the results due back to the Engineer within 10 days. Testing shall be considered included in the pay item for "Containment and Disposal of Lead Paint Cleaning Residues." Copies of the test results shall be provided to the Engineer prior to shipping the waste.

Waste water generated from bridge washing, hygiene purposes, and cleaning of equipment shall be filtered on site to remove particulate and disposed of at a Publicly Owned Treatment Works (POTW) according to State regulations. The Contractor shall provide the Engineer with a letter from the POTW indicating that they will accept the waste water. If the POTW allows the filtered water to be placed into the sanitary sewer system, the Contractor shall provide a letter from the POTW indicating that based on the test results of the water, disposal in the sanitary sewer is acceptable to them. Water shall not be disposed of until the above letter(s) are provided to, and accepted by, the Engineer.

If approved abrasive additives are used that render the waste non-hazardous as determined by TCLP testing, the waste shall be classified as a non-hazardous special waste, transported by a licensed waste transporter, and disposed of at an IEPA permitted disposal facility in Illinois.

When paint is removed from the bridge without the use of abrasive additives, the paint, together with the surface preparation media (e.g. abrasive) shall be handled as a hazardous waste, regardless of the TCLP results. The waste shall be transported by a licensed hazardous waste transporter, treated by an IEPA permitted treatment facility to a non-hazardous special waste and disposed of at an IEPA permitted disposal facility in Illinois.

The treatment/disposal facilities shall be approved by the Engineer, and shall hold an IEPA permit for waste disposal and waste stream authorization for this cleaning residue. The IEPA permit and waste stream authorization must be obtained prior to beginning cleaning, except that if necessary, limited paint removal will be permitted in order to obtain samples of the waste for the disposal facilities. The waste shall be shipped to the facility within 90 days of the first accumulation of the waste in the containers. When permitted by the Engineer, waste from multiple bridges in the same contract may be transported by the Contractor to a central waste storage location(s) approved by the Engineer in order to consolidate the material for pick up, and to minimize the storage of waste containers at multiple remote sites after demobilization. Arrangements for the final waste pickup shall be made with the waste hauler by the time blast cleaning operations are completed or as required to meet the 90 day limit stated above.

The Contractor shall submit a waste accumulation inventory table to the Engineer no later than the 5<sup>th</sup> day of the month. The table shall show the number and size of waste containers filled each day in the preceding month and the amount of waste shipped that month, including the dates of shipments.

The Contractor shall prepare a manifest supplied by the IEPA for off-site treatment and disposal before transporting the hazardous waste off-site. The Contractor shall prepare a land ban notification for the waste to be furnished to the disposal facility. The Contractor shall obtain the handwritten signature of the initial transporter and date of the acceptance of the manifest. The Contractor shall send one copy of the manifest to the IEPA within two working days of transporting the waste off-site. The Contractor shall furnish the generator copy of the manifest and a copy of the land ban notification to the Engineer. The Contractor shall give the transporter the remaining copies of the manifest.

All other project waste shall be removed from the site according to Federal, State and Local regulations, with all waste removed from the site prior to final Contractor demobilization.

The Contractor shall make arrangements to have other hazardous waste, which he/she generates, such as used paint solvent, transported to the Contractor's facility at the end of each day that this waste is generated. These hazardous wastes shall be manifested using the Contractor's own generator number to a treatment or disposal facility from the Contractor's facility. The Contractor shall not combine solvents or other wastes with cleaning residue wastes. All waste streams shall be stored in separate containers.

The Contractor is responsible for the payment of any fines and undertaking any clean up activities mandated by State or federal environmental agencies for improper waste handling, storage, transportation, or disposal.

Contractor personnel shall be trained in the proper handling of hazardous waste, and the necessary notification and clean up requirements in the event of a spill. The Contractor shall maintain a copy of the personnel training records at each bridge site.

Basis of Payment. The soil, water, and air monitoring, containment, collection, temporary storage, transportation, testing and disposal of all project waste, and all other work described herein will be paid for at the contract lump sum price for CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES at the designated location. Payment will not be authorized until all requirements have been fulfilled as described in this specification, including the preparation and submittal of all QC documentation, submittal of environmental monitoring and waste test results, and disposal of all waste.

#### Appendix 1 – Reference List

The Contractor shall maintain the following reference standards and regulations on site for the duration of the project:

- Illinois Environmental Protection Agency – Information Statement on the Removal of Lead-Based Paint from Exterior Surfaces, latest revision
- Illinois Environmental Protection Act
- SSPC Guide 6, Guide for Containing Debris Generated During Paint Removal Operations
- 29 CFR 1926.62, Lead in Construction

- 40 CFR Part 50, Appendix B, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method)
- 40 CFR Part 50, Appendix G, Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air
- SSPC Guide 16, Guide to Specifying and Selecting Dust Collectors
- SSPC TU-7, Conducting Ambient Air, Soil, and Water Sampling Activities During Surface Preparation and Paint Disturbance Activities.



<b>Removal Method</b>	<b>SSPC Class<sup>2</sup></b>	<b>Containment Material Flexibility</b>	<b>Containment Material Permeability<sup>3</sup></b>	<b>Containment Support Structure</b>	<b>Containment Material Joints<sup>4</sup></b>
Hand Tool Cleaning	3P <sup>6</sup>	Rigid or Flexible	Permeable or Impermeable	Minimal	Partially Sealed
Power Tool Cleaning w/ Vacuum	3P <sup>6</sup>	Rigid or Flexible	Permeable or Impermeable	Minimal	Partially Sealed
Power Tool Cleaning w/o Vacuum	2P	Rigid or Flexible	Permeable or Impermeable	Rigid or Flexible	Fully or Partially Sealed
Water Jetting Wet Ab Blast Water Cleaning <sup>7</sup>	2W-3W	Rigid or Flexible	Permeable and Impermeable <sup>7</sup>	Rigid, Flexible, or Minimal	Fully and Partially Sealed
Abrasive Blast Cleaning	1A	Rigid or Flexible	Impermeable	Rigid or Flexible	Fully Sealed
Vacuum Blast Cleaning	4A <sup>6</sup>	Rigid or Flexible	Permeable	Minimal	Partially Sealed

<b>Removal Method</b>	<b>SSPC Class<sup>2</sup></b>	<b>Containment Entryway</b>	<b>Ventilation System Required<sup>5</sup></b>	<b>Negative Pressure Required</b>	<b>Exhaust Filtration Required</b>
Hand Tool Cleaning	3P <sup>6</sup>	Overlapping or Open Seam	Natural	No	No
Power Tool Cleaning w/ Vacuum	3P <sup>6</sup>	Overlapping or Open Seam	Natural	No	No
Power Tool Cleaning w/o Vacuum	2P	Overlapping or Open Seam	Natural	No	No
Water Jetting Wet Ab Blast Water Cleaning <sup>7</sup>	2W-3W	Overlapping or Open Seam	Natural	No	No
Abrasive Blast Cleaning	1A	Airlock or Resealable	Mechanical	Yes	Yes
Vacuum Blast Cleaning	4A <sup>6</sup>	Open Seam	Natural	No	No

Notes:

<sup>1</sup>This table provides general design criteria only. It does not guarantee that specific controls over emissions will occur because unique site conditions must be considered in the design. Other combinations of materials may provide controls over emissions equivalent to or greater than those combinations shown above.

<sup>2</sup>The SSPC Classification is based on SSPC Guide 6. Note that for work over water, water booms or boats with skimmers must be employed, where feasible, to contain spills or releases. Debris must be removed daily at a minimum.

<sup>3</sup>Permeability addresses both air and water as appropriate. In the case of water removal methods, the containment materials must be resistant to water. Ground covers should always be impermeable, and of sufficient strength to withstand the impact and weight of the debris and the equipment used for collection and clean-up. Ground covers must also extend beyond the containment boundary to capture escaping debris.

<sup>4</sup> If debris escapes through the seams, then additional sealing of the seams and joints is required.

<sup>5</sup>When "Natural" is listed, ventilation is not required provided the emissions are controlled as specified in this Special Provision, and provided worker exposures are properly controlled. If unacceptable emissions or worker exposures to lead or other toxic metals occur, incorporate a ventilation system into the containment.

<sup>6</sup>Ground covers and wall tarpaulins may provide suitable controls over emissions without the need to completely enclose the work area.

<sup>7</sup>This method applies to water cleaning to remove surface contaminants, and water jetting (with and without abrasive) and wet abrasive blast cleaning where the goal is to remove paint. Although both permeable and impermeable containment materials are included, ground covers and the lower portions of the containment must be water impermeable with fully sealed joints, and of sufficient strength and integrity to facilitate the collection and holding of the water and debris for proper disposal. If water or debris, other than mist, escape through upper sidewalls or ceiling areas constructed of permeable materials, they shall be replaced with impermeable materials. Permeable materials for the purpose of this specification are defined as materials with openings measuring 25 mils or less in greatest dimension.

- A. Containment Components - The basic components that make up containment systems are defined below. The components are combined in Table 1 to establish the minimum containment system requirements for the method(s) of paint removal specified for the Contract.
1. Rigidity of Containment Materials - Rigid containment materials consist of solid panels of plywood, aluminum, rigid metal, plastic, fiberglass, composites, or similar materials. Flexible materials consist of screens, tarps, drapes, plastic sheeting, or similar materials. When directed by the Engineer, do not use flexible materials for horizontal surfaces directly over traffic lanes or vertical surfaces in close proximity to traffic lanes. If the Engineer allows the use of flexible materials, The Contractor shall take special precautions to completely secure the materials to prevent any interference with traffic.
  2. Permeability of Containment Materials - The containment materials are identified as air impenetrable if they are impervious to dust or wind such as provided by rigid panels, coated solid tarps, or plastic sheeting. Air penetrable materials are those that are formed or woven to allow air flow. Water impermeable materials are those that are capable of containing and controlling water when wet methods of preparation are used. Water permeable materials allow the water to pass through. Chemical resistant materials are those resistant to chemical and solvent stripping solutions. Use fire retardant materials in all cases.
  3. Support Structure - Rigid support structures consist of scaffolding and framing to which the containment materials are affixed to minimize movement of the containment cocoon. Flexible support structures are comprised of cables, chains, or similar systems to which the containment materials are affixed. Use fire retardant materials in all cases.
  4. Containment Joints - Fully sealed joints require that mating surfaces between the containment materials and to the structure being prepared are completely sealed. Sealing measures include tape, caulk, Velcro, clamps, or other similar material capable of forming a continuous, impenetrable or impermeable seal. When materials are overlapped, a minimum overlap of 200 mm (8 in.) is required.
  5. Entryway - An airlock entryway involves a minimum of one stage that is fully sealed to the containment and which is maintained under negative pressure using the ventilation system of the containment. Resealable door entryways involve the use of flexible or rigid doors capable of being repeatedly opened and resealed. Sealing methods include the use of zippers, Velcro, clamps, or similar fasteners. Overlapping door tarpaulin entryways consist of two or three overlapping door tarpaulins.
  6. Mechanical Ventilation - The requirement for mechanical ventilation is to ensure that adequate air movement is achieved to reduce worker exposure to toxic metals to as low as feasible according to OSHA

regulations (e.g., 29 CFR 1926.62), and to enhance visibility. Design the system with proper exhaust ports or plenums, adequately sized ductwork, adequately sized discharge fans and air cleaning devices (dust collectors) and properly sized and distributed make-up air points to achieve a uniform air flow inside containment for visibility. The design target for airflow shall be a minimum of 30.5m (100 ft) per minute cross draft or 18.3 m (60 ft) per minute downdraft. Increase these minimum airflow requirements if necessary to address worker lead exposures. Natural ventilation does not require the use of mechanical equipment for moving dust and debris through the work area.

7. Negative Pressure - When specified, achieve a minimum of 7.5 mm (0.03 in.) water column (W.C.) relative to ambient conditions, or confirm through visual assessments for the concave appearance of the containment enclosure.
8. Exhaust Ventilation - When mechanical ventilation systems are used, provide filtration of the exhaust air, to achieve a filtration efficiency of 99.9 percent at 0.5 microns.

HAZARDOUS WASTE  
CONTINGENCY PLAN  
FOR  
LEAD BASED PAINT REMOVAL PROJECTS

Bridge No.: \_\_\_\_\_  
Location: \_\_\_\_\_  
USEPA Generator No.: \_\_\_\_\_  
IEPA Generator No.: \_\_\_\_\_

Note:

1. A copy of this plan must be kept at the bridge while the Contractor's employees are at the site.
2. A copy of the plan must be mailed to the police and fire departments and hospital identified herein.

Primary Emergency Coordinator

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_  
Phone: (Work) \_\_\_\_\_  
(Home) \_\_\_\_\_

Alternate Emergency Coordinator

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_  
Phone: (Work) \_\_\_\_\_  
(Home) \_\_\_\_\_

Emergency Response Agencies

POLICE:

1. State Police (if bridge not in city) Phone: \_\_\_\_\_  
District No. \_\_\_\_\_  
Address: \_\_\_\_\_
2. County Sheriff \_\_\_\_\_ Phone: \_\_\_\_\_  
County: \_\_\_\_\_  
Address: \_\_\_\_\_
3. City Police \_\_\_\_\_ Phone: \_\_\_\_\_  
District No. \_\_\_\_\_  
Address: \_\_\_\_\_

Arrangements made with police: (Describe arrangements or refusal by police to make arrangements):

---

---

FIRE:

1. City \_\_\_\_\_ Phone: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_
2. Fire District \_\_\_\_\_ Phone: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_
3. Other \_\_\_\_\_ Phone: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

Arrangements made with fire departments: (Describe arrangements or refusal by fire departments to make arrangements):

---

---

HOSPITAL:

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Address: \_\_\_\_\_

Arrangements made with hospital: (Describe arrangements or refusal by hospital to make arrangements):

---

---

Properties of waste and hazard to health:

Places where employees working:

Location of Bridge:

Types of injuries or illness which could result:

Appropriate response to release of waste to the soil:

Appropriate response to release of waste to surface water:

Emergency Equipment at Bridge

Emergency Equipment List	Location of Equipment	Description of Equipment	Capability of Equipment
1. Two-way radio	Truck		Communication
2. Portable Fire Extinguisher	Truck		Extinguishes Fire
3. Absorbent Material	Truck		Absorbs Paint or Solvent Spills
4. Hand Shovel	Truck		Scooping Material
5. 208 L (55 Gallon) Drum	Truck		Storing Spilled Material
6. 19 L (5 Gallon) Pail	Truck		Storing Spilled Material

Emergency Procedure

1. Notify personnel at the bridge of the emergency and implement emergency procedure.
2. Identify the character, source, amount and extent of released materials.
3. Assess possible hazards to health or environment.
4. Contain the released waste or extinguish fire. Contact the fire department if appropriate.
5. If human health or the environment is threatened, contact appropriate police and fire department. In addition, the Emergency Services and Disaster Agency needs to be called using their 24-hour toll free number (800-782-7860) and the National Response Center using their 24-hour toll free number (800-824-8802).
6. Notify the Engineer that an emergency has occurred.
7. Store spilled material and soil contaminated by spill, if any, in a drum or pail. Mark and label the drum or pail for disposal.
8. Write a full account of the spill or fire incident including date, time, volume, material, and response taken.
9. Replenish stock of absorbent material or other equipment used in response.



### **FABRIC REINFORCED ELASTOMERIC MAT**

Effective: July 14,2000

Revised: September 12, 2003

Description. This work shall consist of furnishing and installing the fabric reinforced elastomeric mat as shown on the plans and as directed by the Engineer.

Materials. The elastomeric material requirements for the reinforced mat shall be according to the following:

The Elastomer Compound for the mat shall be according to AASHTO M 251 for Polychloroprene "50 duro", except the tensile strength shall be 10.3 MPa (1500 psi) minimum or it shall be (EPDM) ethylene propylene diene monomer according to Article 1052.02 of the Standard Specifications.

The composite of the fabric and elastomer shall have a minimum tensile strength of 122.6 x 122.6 N/mm (700 x 700 lb/in) according to ASTM D 378.

The minimum elongation at ultimate tensile strength shall be 30 percent according to ASTM D 412.

The minimum thickness of the reinforced mat shall be 3 mm (1/8 in.).

Threaded studs, washers and nuts shall be according to ASHTO M 164. Flattening plates shall be according to AASHTO M 270M, Grade 250 (M 270,Grade 36).

Method of Measurement. The fabric reinforced elastomeric mat and all hardware necessary to install the mat will not be measured for payment but shall be included in the concrete pay item involved.

### **DRILLED SOLDIER PILE RETAINING WALL**

Effective: September 20, 2001

Revised: April 25, 2003

Description. This work shall consist of providing all labor, materials, and equipment necessary to fabricate and furnish the soldier piles, create and maintain the shaft excavations, set and brace the soldier piles into position and encase the soldier piles in concrete to the specified elevation. Also included in this work is the backfilling of the remainder of the shaft excavation with Controlled Low-Strength Material (CLSM), the furnishing and installation of the timber lagging, and the furnishing and installation of CLSM secant lagging. All work shall be according to the details shown on the plans and as directed by the Engineer.

The remainder of the retaining wall components as shown on the plans, such as concrete facing, shear studs, reinforcement bars, tie backs, hand rails, and various drainage items etc., are not included in this Special Provision but are paid for as specified elsewhere in this Contract.

Materials. The materials used for the soldier piles and lagging shall satisfy the following requirements:

- (a) The structural steel components for the soldier piles shall conform to the requirements of AASHTO M270, Grade 250 (36), unless otherwise designated on the plans.
- (b) The soldier pile encasement concrete shall be portland cement concrete according to Section 1020, except the mix design shall be as follows:
- (1) A Type I or II cement shall be used at 360 kg/cu m (605 lb/cu yd). When the plans specify that soil and ground water sulfate contaminates exceed 500 parts per million, a Type V cement shall be required. The cement shall be increased 35 kg/cu m (60 lb/cu yd) if the concrete is to be placed under water.
  - (2) Class C or F fly ash may replace Type I or II cement. The cement replacement shall not exceed 15 percent by mass (weight) at a minimum replacement ratio of 1.5:1. The fly ash shall not be used in combination with ground granulated blast-furnace slag.
  - (3) Grade 100 or 120 ground granulated blast-furnace slag may replace Type I or II cement. The cement replacement shall not exceed 25 percent by mass (weight) at a minimum replacement ratio of 1:1. The ground granulated blast-furnace slag shall not be used in combination with fly ash.
  - (4) The maximum water/cement ratio shall be 0.44.
  - (5) The mortar factor shall be a value which produces a coarse aggregate content comprising between 55 and 65 percent of total aggregate by mass (weight).
  - (6) The slump at point of placement shall be 175 mm  $\pm$  25 mm (7  $\pm$  1 in.). If concrete is placed to displace drilling fluid or against temporary casing, the slump shall be 200 mm  $\pm$  25 mm (8  $\pm$  1 in.) at point of placement. The concrete mix shall be designed to remain fluid throughout the anticipated duration of the pour plus 1 hour.
  - (7) An air entraining admixture shall be required and the air content range shall be 4.0 to 7.0 percent.
  - (8) The minimum compressive strength shall be 27,500 kPa (4000 psi) at 14 days. The minimum flexural strength shall be 4,650 kPa (675 psi) at 14 days.
  - (9) A retarding admixture shall be required.
  - (10) A water-reducing or high range water-reducing admixture shall be required.
  - (11) An accelerating admixture may be used with the permission of the Engineer in extraordinary situations.
  - (12) The coarse aggregate shall be CA 13, CA 14, CA 16 or a blend of these gradations. The fine aggregate shall consist of washed sand only.
- (c) The Controlled Low-Strength Material (CLSM), used for backfilling shaft excavations above the soldier pile encasement concrete and for backfilling secant lagging excavations, to the existing ground surface, shall be according to the Recurring Special Provisions for CLSM.

- (d) Temporary casing shall be produced by electric seam, butt, or spiral welding to produce a smooth wall surface, fabricated from steel satisfying ASTM A252 Grade 2. The minimum wall thickness shall be as required to resist the anticipated installation and dewatering stresses, as determined by the Contractor, but in no case less than 6 mm (1/4 in.).
- (e) Drilling slurry shall consist of a polymer or mineral base material. Mineral slurry shall have both a mineral grain size that will remain in suspension with sufficient viscosity and gel characteristics to transport excavated material to a suitable screening system. The percentage and specific gravity of the material used to make the suspension shall be sufficient to maintain the stability of the excavation and to allow proper concrete placement. For polymer slurry, the calcium hardness of the mixing water shall not exceed 100 mg/L.
- (f) Timber Lagging. The minimum tabulated unit stress in bending ( $F_b$ ), used for the design of the timber lagging, shall be 6.9 MPa (1000 psi) unless otherwise specified on the plans. When treated timber lagging is specified on the plans, the method of treatment shall be according to Article 1007.12.

Equipment. The drilling equipment shall have adequate capacity, including power, torque and down thrust, to create a shaft excavation of the maximum diameter specified to a depth of 20 percent beyond the depths shown on the plans. Concrete equipment shall be according to Article 1020.03.

Construction Requirements. The shaft excavation for each soldier pile shall extend to the tip elevation indicated on the plans for soldier piles terminating in soil or to the required embedment in rock when rock is indicated on the contract plans. The Contractor shall satisfy the following requirements:

- (a) Drilling Methods. The soldier pile installation may involve the use of one or more of the following drilling methods to maintain excavation side wall stability during the various phases of shaft excavation and concrete placement, dependent on the site conditions encountered:
  - (1) Dry Method. The dry method consists of drilling the shaft excavation, removing accumulated water and loose material from the excavation, placing the soldier pile and concrete in a predominately dry excavation. This method shall be used only at sites where the groundwater and soil conditions are suitable to permit the drilling and dewatering of the excavation without causing excessive water infiltration, boiling, squeezing, or caving of the excavation side walls. This method allows the concrete placement by tremie or concrete pumps, or if the excavation can be dewatered, the concrete can be placed by free fall.
  - (2) Wet Method. The wet construction method may be used at sites where dewatering the excavation would cause collapse of the excavation sidewalls or when the volume and head of water flowing into the shaft excavation is likely to contaminate the concrete during placement. This method uses water or slurry to maintain stability of the shaft perimeter while advancing the excavation. After the excavation is completed, the water level in the shaft is allowed to seek equilibrium, the base is cleaned, the soldier pile is set and the concrete is discharged at the base using a tremie pipe or concrete pump, displacing the drilling fluid upward.

- (3) Temporary Casing Method. Temporary casing shall be used when either the wet or dry methods provide inadequate support to prevent sidewall caving or to ensure there is not excessive deformation of the hole. Temporary casing may also be used to reduce the flow of water into the excavation to allow dewatering, adequate cleaning, or to ensure proper concrete placement.

Temporary casing will not be allowed to remain permanently in place without the approval of the Engineer. Before the temporary casing is broken loose, the level of soldier pile encasement concrete in the casing shall be a minimum of 1.5 m (5 ft) above the bottom of the casing. After being broken loose, and as the casing is withdrawn, additional concrete shall be added to maintain sufficient head so that water and soil trapped behind the casing can be displaced upward and discharged at the ground surface.

No shaft excavation shall be made adjacent to a soldier pile with encasement concrete that has a compressive strength less than 10.35 MPa (1500 psi), nor adjacent to secant lagging until the CLSM has reached sufficient strength to maintain its position and shape unless otherwise approved by the Engineer. Materials removed or generated from the shaft excavations shall be disposed of by the Contractor according to Article 202.03. Excavation by blasting will not be permitted.

- (b) Drilling Slurry. During construction, the level of the slurry shall be maintained at a height sufficient to prevent caving of the hole. In the event of a sudden or significant loss of slurry to the hole, the construction of that shaft shall be stopped and the shaft excavation backfilled or supported by temporary casing until a method to stop slurry loss, or an alternate construction procedure, has been developed and approved by the Engineer.
- (c) Obstructions. Obstructions shall be defined as any object (such as but not limited to, boulders, logs, old foundations, etc.) that cannot be removed with normal earth drilling procedures, but requires special augers, tooling, core barrels or rock augers to remove the obstruction. When obstructions are encountered, the Contractor shall notify the Engineer and upon concurrence of the Engineer, the Contractor shall begin working to core, break up, push aside, or remove the obstruction. Lost tools or equipment in the excavation, as a result of the Contractor's operation, shall not be defined as obstructions and shall be removed at the Contractor's expense.
- (d) Top of Rock. The actual top of rock will be defined as the point where material is encountered which can not be drilled with a conventional earth auger and/or under-reaming tool, and requires the use of special rock augers, core barrels, air tools or other methods of hand excavation.
- (e) Design Modifications. If the top of rock elevation encountered is below that estimated on the plans, such that the soldier pile length above rock is increased by more than 10 percent, the Engineer shall be contacted to determine if any soldier pile design changes are required. In addition, if the type of soil or rock encountered is not similar to that shown in the subsurface exploration data, the Engineer shall be contacted to determine if revisions are necessary.

- (f) Soldier Pile Fabrication and Placement. The soldier pile is defined as the structural steel section(s) shown on the plans as well as any connecting plates used to join multiple sections. Cleaning and painting of all steel components, when specified, shall be as shown on the plans and accomplished according to the special provision for "Cleaning and Painting New Metal Structures". This work will not be paid for separately, but shall be considered included in the cost of Furnishing Soldier Piles of the type specified.

The soldier pile shall be shop fabricated such that no field welding is required. The Contractor shall attach suitable bracing or support to maintain the position of the soldier pile within the shaft excavation such that the final location will satisfy the Construction Tolerances portion of this Special Provision. The bracing or supports shall remain in place until the concrete for encasement has reached a minimum compressive strength of 10.35 MPa (1500 psi).

When embedment in rock is indicated on the plans, modification to the length of a soldier pile may be required to satisfy the required embedment. The modification shall be made to the top of the soldier pile unless otherwise approved by the Engineer. When the top of rock encountered is above the estimated elevation indicated on the plans, the soldier piles shall be cut to the required length. If the top of rock encountered is below that estimated on the plans, the Contractor shall either furnish longer soldier piles or splice on additional length of soldier pile per Article 512.05(b) to satisfy the required embedment in rock. In order to avoid delays, the Contractor may have additional soldier pile sections fabricated as necessary to make the required adjustments. Additional soldier pile quantities, above those shown on the plans, shall not be furnished without prior written approval by the Engineer.

- (g) Concrete Placement. Concrete work shall be performed according to the applicable portions of Section 503 and as specified herein.

The soldier pile encasement concrete pour shall be made in a continuous manner from the bottom of the shaft excavation to the elevation indicated on the plans. Concrete shall be placed as soon as possible after the excavation is completed and the soldier pile is secured in the proper position. Uneven levels of concrete placed in front, behind, and on the sides of the soldier pile shall be minimized to avoid soldier pile movement, and to ensure complete encasement. Concrete shall be placed either by free fall, or through a tremie or concrete pump subject to the following conditions:

- (1) The free fall placement shall only be permitted in shaft excavations that can be dewatered without causing side wall instability and where no more than 75 mm (3 in.) of standing water exists at the time of concrete placement. The maximum height of free fall placement shall not exceed 18.3 m (60 ft.) and the concrete shall be directed to the base to minimize contact with either the soldier pile or the shaft excavation side wall. Drop chutes may be used to direct concrete to the base during free fall placement.
- (2) Tremies shall be according to Article 503.08 and contain no aluminum parts that may have contact with the concrete. The inside and outside surfaces of the tremie shall be clean and smooth to permit both flow of the concrete and unimpeded withdrawal during concrete placement.

- (3) Concrete pumps. Pumps and lines may be used for concrete placement and shall have a minimum 100 mm (4 in.) diameter.

The tremie or pump lines used for wet method concrete placement shall be watertight and shall not begin discharge until placed within 250 mm (10 in.) of the base of the excavation. Valves, bottom plates or plugs may be used only when they can be removed from the excavation unless approved by the Engineer. The discharge end shall be immersed at least 1.5 m (5 ft.) in concrete at all times after starting the pour.

Following the soldier pile encasement concrete pour, the remaining portion of the shaft excavation shall be backfilled with CLSM.

CLSM Secant lagging placement shall be placed as soon as practical after the shaft excavation is cleared.

- (h) Construction Tolerances. The soldier piles shall be drilled and located within the excavation to satisfy the following tolerances:

(1) The center of the soldier pile shall be within 38 mm (1 1/2 in.) of plan station and 13 mm (1/2 in.) offset at the top of the shaft.

(2) The out of vertical plumbness of the soldier pile shall not exceed 0.83 percent.

(3) The top of the soldier pile shall be within  $\pm 25$  mm ( $\pm 1$  in.) of the plan elevation.

- (i) Timber Lagging. Timber lagging, when required by the plans, installed below the original ground surface, shall be placed from the top down as the excavation proceeds. Lagging shown above grade shall be installed and backfilled against prior to installing any permanent facing to minimize post construction deflections. Over-excavation required to place the timber lagging behind the flanges of the soldier piles shall be the minimum necessary to install the lagging. When the plans require the Contractor to design the timber lagging, the design shall be based on established practices published in FHWA or AASHTO documents considering lateral earth pressure, construction loading, traffic surcharges and the lagging span length(s). The nominal thickness of the lagging selected shall not be less than 75 mm (3 in.) and shall satisfy the minimum tabulated unit stress in bending ( $F_b$ ) stated elsewhere in this Special Provision. The Contractor shall be responsible for the successful performance of the lagging system until the concrete facing is installed. When the nominal timber lagging thickness(s) and allowable stress are specified on the plans, the timber shall be rough cut or surfaced and in accordance with Article 1007.03.

- (j) Structure Excavation. When structure excavation is necessary to place a concrete facing, it shall be made and paid for according to Section 502 except that the horizontal limits for structure excavation shall be from the face of the soldier pile to a vertical plane 600 mm (2 ft) from the finished face of the wall. The depth shall be from the top of the original ground surface to the bottom of the concrete facing. The additional excavation necessary to place the lagging whether through soil or CLSM shall be included in this work.

- (k) Geocomposite Wall Drain. When required by the plans, the geocomposite wall drain shall be installed and paid for according to Section 591 except that, in the case where a concrete facing is specified on the plans, the wall drain shall be installed on the concrete facing side of the timber lagging with the pervious (fabric) side of the drain installed to face the timber.

- (l) When a concrete facing is not specified on the plans, the pervious (fabric) side of the drain shall be installed to face the soil. In this case, the drain shall be installed in stages as the timber lagging is installed. The wall drain shall be placed in sections and spliced, or kept on a continuous roll, so that as each timber is placed, the drain can be properly located as the excavation proceeds.

Method of Measurement. The furnishing of soldier piles will be measured for payment in meters (feet) along the centerline of the soldier pile for each of the types specified. The length shall be determined as the difference between the plan top of soldier pile and the final as built shaft excavation bottom.

The drilling and setting of soldier piles in soil and rock, will be measured for payment and the volumes computed in cubic meters (cubic feet) for the shaft excavation required to set the soldier piles according to the plans and specifications, and accepted by the Engineer. These volumes shall be the theoretical volumes computed using the diameter(s) of the shaft(s) shown in the plans and the depth of the excavation in soil and/or rock as appropriate. The depth in soil will be defined as the difference in elevation between the ground surface at the time of concrete placement and the bottom of the shaft excavation or the top of rock (when present), whichever is encountered first. The depth in rock will be defined as the difference in elevation between the measured top of rock and the bottom of the shaft excavation.

Drilling and placing CLSM secant lagging shall be measured for payment in cubic meters (cubic feet) of the shaft excavation required to install the secant lagging as shown in the plans. This volume shall be the theoretical volume computed using the diameter(s) shown on the plans and the difference in elevation between the as built shaft excavation bottom and the ground surface at the time of the CLSM placement.

Timber lagging shall be measured for payment in square meters (square feet) of timber lagging installed to the limits as shown on the plans. The quantity shall be calculated using the minimum lagging length required on the plans multiplied by the as installed height of timbers, for each bay of timber lagging spanning between the soldier piles.

Basis of Payment. The furnishing of soldier piles will be paid for at the contract unit price per meter (foot) for FURNISHING SOLDIER PILES, of the type specified, for the total number of meters (feet) furnished to the job site. The cost of any field splices required due to changes in top of rock elevation shall be paid for according to Article 109.04.

The drilling and setting of soldier piles will be paid for at the contract unit price per cubic meter (cubic foot) for DRILLING AND SETTING SOLDIER PILES (IN SOIL) and DRILLING AND SETTING SOLDIER PILES (IN ROCK). The required shaft excavation, soldier pile encasement concrete and any CLSM backfill required around each soldier pile will not be paid for separately but shall be included in this item.

The timber lagging will be paid for at the contract unit price per square meter (square foot) for UNTREATED TIMBER LAGGING, or TREATED TIMBER LAGGING as detailed on the plans.

The secant lagging will be paid for at the contract unit price per cubic meter (cubic foot) for SECANT LAGGING. The required shaft excavation and CLSM backfill required to fill that excavation shall be included in this item.

Obstruction mitigation shall be paid for according to Article 109.04.

No additional compensation, other than noted above, will be allowed for removing and disposing of excavated materials, for furnishing and placing concrete, bracing, lining, temporary casings placed and removed or left in place, or for any excavation made or concrete placed outside of the plan diameter(s) of the shaft(s) specified.

### REMOVAL OF EXISTING NON COMPOSITE BRIDGE DECKS

Effective: June 21, 2004

Revised: February 7, 2005

Revise the fifth sentence of the third paragraph of Article 501.03 of the Standard Specifications to read:

“Saw cutting directly over the top of beam or girder flanges may be permitted only if shown on the plans. The maximum saw cut depth allowed directly over a flange shall be to the bottom of the top mat of reinforcing steel but shall not exceed half the deck thickness. The Contractor shall provide positive control for controlling the depth of cut into the slab. The Contractor shall provide sawing equipment adequate in size and horsepower to complete the sawing operation.”

### BITUMINOUS CONCRETE SURFACE COURSE (BDE)

Effective: April 1, 2001

Revised: April 1, 2003

Replace the fourth paragraph of Article 406.23(b) of the Standard Specifications with the following:

“Mixture for cracks, joints, flangeways, leveling binder (machine method), leveling binder (hand method) and binder course in excess of 103 percent of the quantity specified by the Engineer will not be measured for payment.

Surface course mixture in excess of 103 percent of adjusted plan quantity will not be measured for payment. The adjusted plan quantity for surface course mixtures will be calculated as follows:

Adjusted Plan Quantity = C x quantity shown on the plans or as specified by the Engineer.

where C =      metric:  $C = \frac{G_{mb} \times 24.99}{U}$               English:  $C = \frac{G_{mb} \times 46.8}{U}$

and where:

$G_{mb}$  = average bulk specific gravity from approved mix design.

U = Unit weight of surface course shown on the plans in kg/sq m/25 mm (lb/sq yd/in.), used to estimate plan quantity.

24.99 = metric constant.

46.8 = English constant.



If project circumstances warrant a new surface course mix design, the above equations shall be used to calculate the adjusted plan quantity for each mix design using its respective average bulk specific gravity.”

**BITUMINOUS EQUIPMENT, SPREADING AND FINISHING MACHINE (BDE)**

Effective: January 1, 2005

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

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

**BRIDGE DECK CONSTRUCTION (BDE)**

Effective: April 1, 2002

Revised: April 1, 2004

Add the following to Article 503.03 of the Standard Specifications:

“(h).Fogging Equipment..... 1103.17(k)”

Add the following after the first sentence of the second paragraph to Article 503.07 of the Standard Specifications:

“When placing Class BD concrete, the discharge end of the pump shall have attached an “S” shaped flexible or rigid conduit, a 90 degree elbow with a minimum of 3 m (10 ft) of flexible conduit placed parallel to the deck, or a similar configuration approved by the Engineer.”

Add the following after the second sentence of the ninth paragraph of Article 503.07 of the Standard Specifications:

“When consolidating concrete in bridge decks, the vibrator shall be vertically inserted into the concrete for 3 - 5 seconds, or for a period of time determined by the Engineer.”

Add the following after the first paragraph of Article 503.17 of the Standard Specifications:

“For the bridge deck pour, fogging equipment shall be in operation unless the evaporation rate is less than 0.5 kg/sq m/hour (0.1 lb/sq ft/hour) and the Engineer gives permission to turn off the equipment. The evaporation rate shall be determined according to the figure in the

Portland Cement Association's publication, "Design and Control of Concrete Mixtures" (refer to the section on plastic shrinkage cracking). The Contractor shall provide temperature, relative humidity, and wind speed measuring equipment.

The fogging equipment shall be adjusted to adequately cover the entire width of the pour.

If there is a delay of more than ten minutes during bridge deck placement, wet burlap shall be used to protect the concrete until operations resume.

Concrete placement operations shall be coordinated to limit the distance between the point of concrete placement and concrete covered with cotton mats for curing. The distance shall not exceed 10.5 m (35 ft). For bridge deck widths greater than 15 m (50 ft), the distance shall not exceed 7.5 m (25 ft)."

Add the following to the end of the first paragraph of Article 503.17(b) of the Standard Specifications to read:

"The concrete in these areas shall be struck off during the deck pour and excess material from the finishing machine shall not be incorporated."

In the Coarse Aggregate Gradation table of Article 1004.01(c) of the Standard Specifications revise the percent passing the 12.5 mm (1/2 in.) sieve for gradation CA 7 to "45±15<sup>4/ 9/</sup>".

In the Coarse Aggregate Gradation table of Article 1004.01(c) of the Standard Specifications revise the percent passing the 12.5 mm (1/2 in.) sieve for gradation CA 11 to "45±15<sup>6/ 9/</sup>".

Add the following to the Coarse Aggregate Gradation table of the Standard Specifications:

"9/ When Class BD concrete is to be pumped, the coarse aggregate gradation shall have a minimum of 45 percent passing the 12.5 mm (1/2 in.) sieve. The Contractor may combine two or more coarse aggregate sizes, consisting of CA-7, CA-11, CA-13, CA-14, and CA-16, provided a CA-7 or CA-11 is included in the blend."

Revise Article 1020.05(d) of the Standard Specifications to read:

"(d) Class BD Concrete. The maximum mortar factor shall be 0.86."

Add the following to Article 1103.17 of the Standard Specifications:

"(k) Fogging Equipment. Fogging equipment shall consist of a mechanically operated, pressurized system using a triple headed nozzle or an equivalent nozzle. The fogging nozzle shall be capable of producing a fine fog mist that will increase the relative humidity of the air just above the fresh concrete surface without accumulating any water on the concrete. The fogging equipment shall be mounted behind the roller and pan of finishing machine or on a separate foot bridge. Controls shall be designed to vary the volume of water flow, be easily accessible and immediately shut off the water when in the off position. Hand held fogging equipment will not be allowed."

**BUTT JOINTS (BDE)**

Effective: April 1, 2004

Revised: April 1, 2005

Revise Article 406.18 of the Standard Specifications to read:

**“406.18 Butt Joints.** Butt joints shall be constructed according to the details shown on the plans. The surface removal shall be performed according to Section 440. Construction of butt joints shall not begin prior to beginning general operations on the project.

When butt joints are to be constructed under traffic, temporary ramps shall be constructed and maintained at both the upstream and downstream ends of the surface removal areas immediately upon completion of the surface removal operation. The temporary ramps shall be constructed by the following methods.

- (a) Temporary Bituminous Ramps. Temporary bituminous ramps shall have a minimum taper rate of 1:40 (V:H). The bituminous material used shall meet the approval of the Engineer. Cold-milled bituminous tailings will not be acceptable.
- (b) Temporary Rubber Ramps. Temporary rubber ramps shall only be used on roadways with permanent posted speeds of 55 mph or less. The ramps shall have a minimum taper rate of 1:30 (V:H). The leading edge of the rubber ramp shall have a maximum thickness of 6 mm (1/4 in.) and the trailing edge shall match the height of the adjacent pavement  $\pm$  6 mm (1/4 in.).

The rubber material shall conform to the following.

Property	Test Method	Requirement
Durometer Hardness, Shore A	ASTM D 2240	80 $\pm$ 10
Tensile Strength	ASTM D 412	5500 kPa (800 psi) min.
Elongation, percent	ASTM D 412	100 min.
Specific Gravity	ASTM D 297	1.1-1.3
Brittleness	ASTM D 746	-40 °C (-40 °F)

The rubber ramps shall be installed according to the manufacturer’s specifications and fastened with the anchors provided. Rubber ramps that fail to stay in place or create a traffic hazard shall be replaced immediately with temporary bituminous ramps at the Contractor’s expense.

The temporary ramps shall be removed just prior to placing the proposed surface course. If work is suspended for the winter season prior to completion of surface course construction, precut butt joints shall be filled to the elevation of the existing pavement surface with compacted bituminous concrete surface course or binder course.”

**COARSE AGGREGATE FOR TRENCH BACKFILL, BACKFILL AND BEDDING (BDE)**

Effective: April 1, 2001

Revised: November 1, 2003

Revise Article 208.02 of the Standard Specifications to read:

**“208.02 Materials.** Materials shall be according to the following Articles of Section 1000 –  
Materials:

- (a) Fine Aggregate (Note 1)..... 1003.04
- (b) Coarse Aggregate (Note 2) ..... 1004.06

Note 1. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 2. The coarse aggregate shall be wet to the satisfaction of the Engineer.”

Revise the first sentence of the second paragraph of subparagraph (b) in Article 208.03 of the Standard Specifications to read:

"Any material meeting the requirements of Articles 1003.04 or 1004.06 which has been excavated from the trenches shall be used for backfilling the trenches."

Add the following to the end of Article 542.02 of the Standard Specifications:

- “(bb) Fine Aggregate (Note 1)..... 1003.04
- (cc) Coarse Aggregate (Note 2) ..... 1004.06

Note 1. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 2. The coarse aggregate shall be wet to the satisfaction of the Engineer.”

Revise the first and second sentences of the second paragraph of subparagraph (a) of Article 542.04 of the Standard Specifications to read:

"The unstable and unsuitable material shall be removed to a depth determined by the Engineer and for a width of one diameter (or equivalent diameter) of the pipe on each side of the pipe culvert, and replaced with aggregate. Rock shall be removed to an elevation 300 mm (1 ft) lower than the bottom of the pipe or to a depth equal to 40 mm/m (1/2 in./ft) of ultimate fill height over the top of the pipe culvert, whichever is the greater depth, and for a width as specified in (b) below, and replaced with aggregate."

Revise the second paragraph of subparagraph (c) of Article 542.04 of the Standard Specifications to read:

"Well compacted aggregate, at least 100 mm (4 in.) in depth below the pipe culvert, shall be placed the entire width of the trench and for the length of the pipe culvert, except well compacted impervious material shall be used for the outer 1 m (3 ft) at each end of the pipe. When the trench has been widened by the removal and replacement of unstable or unsuitable material, the foundation material shall be placed for a width not less than the above specified widths on each side of the pipe. The aggregate and impervious material shall be approved by the Engineer and shall be compacted to the Engineer's satisfaction by mechanical means."

Revise subparagraph (e) of Article 542.04 of the Standard Specifications to read:

"(e) Backfilling. As soon as the condition of the pipe culvert will permit, the entire width of the trench shall be backfilled with aggregate to a height of at least the elevation of the center of the pipe. The aggregate shall be placed longitudinally along the pipe culvert, except at the outer 1 m (3 ft) at each end of the culvert which shall be backfilled with impervious material. The elevation of the backfill material on each side of the pipe shall be the same. The space under the pipe shall be completely filled. The aggregate and impervious material shall be placed in 200 mm (8 in.) layers, loose measurement. When using PVC, PE, or corrugated metal pipe, the aggregate shall be continued to a height of at least 300 mm (1 ft) above the top of the pipe and compacted to a minimum of 85 percent of standard lab density by mechanical means. When reinforced concrete pipes are used and the trench is within 600 mm (2 ft) of the pavement structure, the backfill shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

When using PVC, PE, or corrugated metal pipe a minimum of 300 mm (1 ft) of cover from the top of the pipe to the top of the subgrade will be required.

The installed pipe and its embedment shall not be disturbed when using movable trench boxes and shields, sheet pile, or other trench protection.

The remainder of the trench shall be backfilled with select material, from excavation or borrow, free from large or frozen lumps, clods or rock, meeting the approval of the Engineer. The material shall be placed in layers not exceeding 200 mm (8 in.) in depth, loose measurement and compacted to 95 percent of the standard laboratory density. Compaction shall be obtained by use of mechanical tampers or with approved vibratory compactors. Before compacting, each layer shall be wetted or dried to bring the moisture content within the limits of 80 to 110 percent of optimum moisture content determined according to AASHTO T 99 (Method C). All backfill material shall be deposited in the trench or excavation in such a manner as not to damage the culvert. The filling of the trench shall be carried on simultaneously on both sides of the pipe. The Contractor may, at his/her expense, backfill the entire trench with aggregate in lieu of select material. The aggregate shall be compacted to the satisfaction of the Engineer by mechanical means.

The backfill material for all trenches and excavations made in the subgrade of the proposed improvement, and for all trenches outside of the subgrade where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder, or sidewalk shall be according to Section 208. The trench backfill material shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

The Contractor may, at his/her expense, backfill the entire trench with controlled low strength material meeting the approval of the Engineer.

When the trench has been widened for the removal and replacement of unstable or unsuitable material, the backfilling with aggregate and impervious material, will be required for a width of at least the specified widths on each side of the pipe. The remaining width of each layer may be backfilled with select material. Each 200 mm (8 in.) layer for the entire trench width shall be completed before beginning the placement of the next layer."

Revise subparagraph (b) of Article 542.05 of the Standard Specifications to read:

"(b) Embankment. Embankment extending to an elevation of 300 mm (1 ft) over the top of the pipe shall be constructed according to Article 542.04(f), except the material up to the elevation of the center of the pipe and extending to a width of at least 450 mm (18 in.) on each side of the pipe, exclusive of the outer 1 m (3 ft) at each end of the pipe, shall consist of aggregate. At the outer 1 m (3 ft) at each end of the culvert, impervious material shall be used."

Add the following paragraph after the first paragraph of Article 542.10 of the Standard Specifications:

"Trench backfill will be measured for payment according to Article 208.03."

Add the following paragraph after the third paragraph of Article 542.11 of the Standard Specifications:

"Trench backfill will be paid for according to Article 208.04."

Add the following to of Article 550.02 of the Standard Specifications:

"(m) Fine Aggregate (Note 2)..... 1003.04  
(n) Coarse Aggregate (Note 3)..... 1004.06

Note 2. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 3. The coarse aggregate shall be wet to the satisfaction of the Engineer."

Revise the first two sentences of the third paragraph of Article 550.04 of the Standard Specifications to read:

"Well compacted, aggregate bedding material at least 100 mm (4 in.) in depth below the pipe, shall be placed for the entire width of the trench and length of the pipe. The aggregate shall be compacted to the satisfaction of the Engineer by mechanical means."

Revise Article 550.07 of the Standard Specifications to read:

**550.07 Backfilling.** As soon as the condition of the pipe will permit, the entire width of the trench shall be backfilled with aggregate to a height of at least the elevation of the center of the pipe. The aggregate shall be placed longitudinally along the pipe. The elevation of the backfill material on each side of the pipe shall be the same. The space under the pipe shall be completely filled. The aggregate backfill material shall be placed in 200 mm (8 in.) layers, loose measurement and compacted to the satisfaction of the Engineer by mechanical means. When using PVC pipe, the aggregate shall be continued to a height of at least 300 mm (12 in.) above the top of the pipe.

The installed pipe and its embedment shall not be disturbed when using movable trench boxes and shields, sheet pile, or other trench protection.

The remainder of the trench and excavation shall be backfilled to the natural line or finished surface as rapidly as the condition of the sewer will permit. The backfill material shall consist of suitable excavated material from the trench or of trench backfill as herein specified. All backfill material shall be deposited in the trench or excavation in such a manner as not to damage the sewer and shall be compacted to the satisfaction of the Engineer by mechanical means. The filling of the trench shall be carried on simultaneously on both sides of the pipe.

The backfill material for trenches and excavation made in the subgrade of the proposed improvement, and for all trenches outside of the subgrade where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder or sidewalk shall be according to Section 208. The backfill material shall be compacted to 85 percent of standard lab density by mechanical means.

All backfill material up to a height of 300 mm (1 ft) above the pipe shall be deposited in uniform layers not exceeding 200 mm (8 in.) thick, loose measurement. The material in each layer shall be compacted to the satisfaction of the Engineer by mechanical means. The backfilling above this height shall be done according to Method 1, 2 or 3 as described below, with the following exceptions.

When trench backfill or excavated material meeting the requirements of Section 208 is required above the first 300 mm (1 ft) of the pipe, the layers shall not exceed 200 mm (8 in.). Gradations CA6 or CA10 shall not be used with Method 2 or Method 3.

Method 1. The material shall be deposited in uniform layers not exceeding 300 mm (1 ft) thick, loose measurement, and each layer shall be compacted to the satisfaction of the Engineer by mechanical means.

Method 2. The material shall be deposited in uniform layers not exceeding 300 mm (1 ft) thick, loose measurement, and each layer shall be either inundated or deposited in water.

Method 3. The trench shall be backfilled with loose material, and settlement secured by introducing water through holes jetted into the backfill to a point approximately 600 mm (2 ft) above the top of the pipe. The holes shall be spaced as directed by the Engineer but shall be no farther than 2 m (6 ft) apart.

The water shall be injected at a pressure just sufficient to sink the holes at a moderate rate of speed. The pressure shall be such that the water will not cut cavities in the backfill material nor overflow the surface. If water does overflow the surface, it shall be drained into the jetted holes by means of shallow trenches.

Water shall be injected as long as it will be absorbed by the backfill material and until samples taken from test holes in the trench show a satisfactory moisture content. The Contractor shall bore the test holes not more than 15 m (50 ft) apart and at such other locations in the trench designated by the Engineer. As soon as the watersoaking has been completed, all holes shall be filled with soil and compacted by ramming with a tool approved by the Engineer.

Backfill material which has been watersoaked shall be allowed to settle and dry for at least 10 days before any surface course or pavement is constructed on it. The length of time may be

altered, if deemed desirable, by the Engineer. Where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder or sidewalk, the provisions of this paragraph shall also apply.

At the end of the settling and drying period, the crusted top of the backfill material shall be scarified and, if necessary, sufficient backfill material added, as specified in Method 1, to complete the backfilling operations.

The method used for backfilling and compacting the backfill material shall be the choice of the Contractor. If the method used does not produce results satisfactory to the Engineer, the Contractor will be required to alter or change the method being used so the resultant backfill will be satisfactory to the Engineer. Should the Contractor be required to alter or change the method being used, no additional compensation will be allowed for altering or changing the method.

The Contractor may, at his/her expense, backfill the entire trench with controlled low strength material meeting the approval of the Engineer.

When sheeting and bracing have been used, sufficient bracing shall be left across the trench as the backfilling progresses to hold the sides firmly in place without caving or settlement. This bracing shall be removed as soon as practicable. Any depressions which may develop within the area involved in the construction operation due to settlement of the backfilling material shall be filled in a manner approved by the Engineer.

When the Contractor constructs the trench with sloped or benched sides according to Article 550.04, backfilling for the full width of the excavation shall be as specified, except no additional compensation will be allowed for trench backfill material required outside the vertical limits of the specified trench width.

Whenever excavation is made for installing sewer pipe across earth shoulders or private property, the topsoil disturbed by excavation operations shall be replaced as nearly as possible in its original position, and the whole area involved in the construction operations shall be left in a neat and presentable condition.

When using any PVC pipe, the pipe shall be backfilled with aggregate to 300 mm (1 ft) over the top of the pipe and compacted to a minimum of 85 percent of standard lab density by mechanical means.

When reinforced concrete pipes are used and the trench is within 600 mm (2 ft) of the pavement structure, the backfill shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

Deflection Testing for Storm Sewers. All PVC storm sewers will be tested for deflection not less than 30 days after the pipe is installed and the backfill compacted.

For PVC storm sewers with diameters 600 mm (24 in.) or smaller, a mandrel drag shall be used for deflection testing. For PVC storm sewers with diameters over 600 mm (24 in.), deflection measurements other than by a mandrel drag shall be used.



Where the mandrel is used, the mandrel shall be furnished by the Contractor and pulled by hand through the pipeline with a suitable rope or cable connected to each end. Winching or other means of forcing the deflection gauge through the pipeline will not be allowed.

The mandrel shall be of a shape similar to that of a true circle enabling the gauge to pass through a satisfactory pipeline with little or no resistance. The mandrel shall be of a design to prevent it from tipping from side to side and to prevent debris build-up from occurring between the channels of the adjacent fins or legs during operation. Each end of the core of the mandrel shall have fasteners to which the pulling cables can be attached. The mandrel shall have 9, various sized fins or legs of appropriate dimension for various diameter pipes. Each fin or leg shall have a permanent marking that states its designated pipe size and percent of deflection allowable.

The outside diameter of the mandrel shall be 95 percent of the base inside diameter, where the base inside diameter is:

For all PVC pipe (as defined using ASTM D 3034 methodology):

If the pipe is found to have a deflection greater than specified, that pipe section shall be removed, replaced, and retested."

Revise subparagraph (c) of Article 1003.04 of the Standard Specifications to read:

"(c) Gradation. The fine aggregate gradation shall be as follows:

Backfill, bedding and trench backfill for pipe culverts and storm sewers FA 1, FA 2, FA 6, or FA 21  
Porous granular embankment and backfill, french drains, and sand backfill for  
underdrains FA 1, FA 2, or FA20 (Note 1)

Note 1: For FA 1, FA 2, and FA 20 the percent passing the 75 m (No. 200) sieve shall be  $2 \pm 2$ ."

Revise the title of Article 1004.06 of the Standard Specifications to read:

**"Coarse Aggregate for Blotter, Embankment, Backfill, Trench Backfill, French Drains, and Bedding."**

Add the following to the end of subparagraph (c) of Article 1004.06 of the Standard Specifications:

"Backfill, bedding, and trench backfill for pipe culverts and storm sewers CA 6, CA 10, and CA 18"

### **CONCRETE ADMIXTURES (BDE)**

Effective: January 1, 2003

Revised: July 1, 2004

Revise Article 1020.05(b) of the Standard Specifications to read:

"(b) Admixtures. Except as specified, the use of admixtures to increase the workability or to accelerate the hardening of the concrete will be permitted only when approved in writing

by the Engineer. The Department will maintain an Approved List of Concrete Admixtures. When the Department permits the use of a calcium chloride accelerator, it shall be according to Article 442.02, Note 5.

When the atmosphere or concrete temperature is 18 °C (65 °F) or higher, a retarding admixture meeting the requirements of Article 1021.03 shall be used in the Class BD Concrete and portland cement concrete bridge deck overlays. The amount of retarding admixture to be used will be determined by the Engineer. The proportions of the ingredients of the concrete shall be the same as without the retarding admixture except that the amount of mixing water shall be reduced, as may be necessary, in order to maintain the consistency of the concrete as required. In addition, a high range water-reducing admixture shall be used in Class BD Concrete. The amount of high range water-reducing admixture will be determined by the Engineer. At the option of the Contractor, a water-reducing admixture may be used. Type I cement shall be used.

For Class PC and PS Concrete, a retarding admixture may be added to the concrete mixture when the concrete temperature is 18 °C (65 °F) or higher. Other admixtures may be used when approved by the Engineer, or if specified by the contract. If an accelerating admixture is permitted by the Engineer, it shall be the non-chloride type.

At the Contractor's option, admixtures in addition to an air-entraining admixture may be used for Class PP-1 concrete. The accelerator shall be the non-chloride type. If a water-reducing or retarding admixture is used, the cement factor may be reduced a maximum 18 kg/cu m (0.30 hundredweight/cu yd). If a high range water-reducing admixture is used, the cement factor may be reduced a maximum 36 kg/cu m (0.60 hundredweight/cu yd). Cement factor reductions shall not be cumulative when using multiple admixtures. An accelerator shall always be added prior to a high range water-reducing admixture, if both are used.

If Class C fly ash or ground granulated blast-furnace slag is used in Class PP-1 concrete, a water-reducing or high range water-reducing admixture shall be used. However, the cement factor shall not be reduced if a water-reducing, retarding, or high range water-reducing admixture is used. In addition, an accelerator shall not be used.

For Class PP-2 or PP-3 concrete, a non-chloride accelerator followed by a high range water-reducing admixture shall be used, in addition to the air-entraining admixture. For Class PP-3 concrete, the non-chloride accelerator shall be calcium nitrite.

For Class PP-2 or PP-3 concrete, the Contractor has the option to use a water-reducing admixture. A retarding admixture shall not be used unless approved by the Engineer. A water-reducing, retarding, or high range water-reducing admixture shall not be used to reduce the cement factor.

When the air temperature is less than 13 °C (55 °F) for Class PP-1 or PP-2 concrete, the non-chloride accelerator shall be calcium nitrite.

For Class PP-4 concrete, a high range water-reducing admixture shall be used in addition to the air-entraining admixture. The Contractor has the option to use a water-reducing admixture. An accelerator shall not be used. For stationary or truck mixed

concrete, a retarding admixture shall be used to allow for haul time. The Contractor has the option to use a mobile portland cement concrete plant according to Article 1103.04, but a retarding admixture shall not be used unless approved by the Engineer. A water-reducing, retarding, or high range water-reducing admixture shall not be used to reduce the cement factor.

If the Department specifies a calcium chloride accelerator for Class PP-1 concrete, the maximum chloride dosage shall be 1.0 L (1.0 quart) of solution per 45 kg (100 lb) of cement. The dosage may be increased to a maximum 2.0 L (2.0 quarts) per 45 kg (100 lb) of cement if approved by the Engineer. If the Department specifies a calcium chloride accelerator for Class PP-2 concrete, the maximum chloride dosage shall be 1.3 L (1.3 quarts) of solution per 45 kg (100 lb) of cement. The dosage may be increased to a maximum 2.6 L (2.6 quarts) per 45 kg (100 lb) of cement if approved by the Engineer.

For Class PV, MS, SI, RR, SC and SH concrete, at the option of the Contractor, or when specified by the Engineer, a water-reducing admixture or a retarding admixture may be used. The amount of water-reducing admixture or retarding admixture permitted will be determined by the Engineer. The air-entraining admixture and other admixtures shall be added to the concrete separately, and shall be permitted to intermingle only after they have separately entered the concrete batch. The sequence, method and equipment for adding the admixtures shall be approved by the Engineer. The water-reducing admixture shall not delay the initial set of the concrete by more than one hour. Type I cement shall be used.

When a water-reducing admixture is added, a cement factor reduction of up to 18 kg/cu m (0.30 hundredweight/cu yd), from the concrete designed for a specific slump without the admixture, will be permitted for Class PV, MS, SI, RR, SC and SH concrete. When an approved high range water-reducing admixture is used, a cement factor reduction of up to 36 kg/cu m (0.60 hundredweight/cu yd), from a specific water cement/ratio without the admixture, will be permitted based on a 14 percent minimum water reduction. This is applicable to Class PV, MS, SI, RR, SC and SH concrete. A cement factor below 320 kg/cu m (5.35 hundredweight/cu yd) will not be permitted for Class PV, MS, SI, RR, SC and SH concrete. A cement factor reduction will not be allowed for concrete placed underwater. Cement factor reductions shall not be cumulative when using multiple admixtures.

For use of admixtures to control concrete temperature, refer to Articles 1020.14(a) and 1020.14(b).

The maximum slumps given in Table 1 may be increased to 175 mm (7 in.) when a high range water-reducing admixture is used for all classes of concrete except Class PV and PP.”

Revise Section 1021 of the Standard Specifications to read:

#### **“SECTION 1021. CONCRETE ADMIXTURES”**

**1021.01 General.** Admixtures shall be furnished in liquid form ready for use. The admixtures may be delivered in the manufacturer's original containers, bulk tank trucks or such

containers or tanks as are acceptable to the Engineer. Delivery shall be accompanied by a ticket which clearly identifies the manufacturer and trade name of the material. Containers shall be readily identifiable to the satisfaction of the Engineer as to manufacturer and trade name of the material they contain.

Prior to inclusion of a product on the Department's Approved List of Concrete Admixtures, the manufacturer shall submit a report prepared by an independent laboratory accredited by the AASHTO Accreditation Program. The report shall show the results of physical tests conducted no more than five years prior to the time of submittal, according to applicable specifications.

Tests shall be conducted using materials and methods specified on a "test" concrete and a "reference" concrete, together with a certification that no changes have been made in the formulation of the material since the performance of the tests. Per the manufacturer's option, the cement content for all required tests shall either be according to applicable specifications or 335 kg/cu m (5.65 cwt/cu yd). Compressive strength test results for six months and one year will not be required.

In addition to the report, the manufacturer shall submit AASHTO T 197 water content and set time test results on the standard cement used by the Department. The test and reference concrete mixture shall contain a cement content of 335 kg/cu m (5.65 cwt/cu yd). The manufacturer may select their lab or an independent lab to perform this testing. The laboratory is not required to be accredited by the AASHTO Accreditation Program.

Prior to the approval of an admixture, the Engineer may conduct all or part of the applicable tests on a sample that is representative of the material to be furnished. The test and reference concrete mixtures tested by the Engineer will contain a cement content of 335 kg/cu m (5.65 cwt/cu yd). For freeze-thaw testing, the Department will perform the test according to Illinois Modified AASHTO T 161, Procedure B.

The manufacturer shall include in the submittal the following information according to ASTM C 494; the average and manufacturing range of specific gravity, the average and manufacturing range of solids in the solution, and the average and manufacturing range of pH. The submittal shall also include an infrared spectrophotometer trace no more than five years old.

When test results are more than seven years old, the manufacturer shall re-submit the infrared spectrophotometer trace and the report prepared by an independent laboratory accredited by the AASHTO Accreditation Program.

All admixtures, except chloride-based accelerators, shall contain no more than 0.3 percent chloride by mass (weight).

**1021.02 Air-Entraining Admixtures.** Air-entraining admixtures shall conform to the requirements of AASHTO M 154.

If the manufacturer certifies that the air-entraining admixture is an aqueous solution of Vinsol resin that has been neutralized with sodium hydroxide (caustic soda), testing for compliance with the requirements may be waived by the Engineer. In the certification, the manufacturer shall show complete information with respect to the formulation of the solution, including the number of parts of Vinsol resin to each part of sodium hydroxide. Before the approval of its use

is granted, the Engineer will test the solution for its air-entraining quality in comparison with a solution prepared and kept for that purpose.

**1021.03 Retarding and Water-Reducing Admixtures.** The admixture shall comply with the following requirements:

- (a) The retarding admixture shall comply with the requirements of AASHTO M 194, Type B (retarding) or Type D (water-reducing and retarding).
- (b) The water-reducing admixture shall comply with the requirements of AASHTO M 194, Type A.
- (c) The high range water-reducing admixture shall comply with the requirements of AASHTO M 194, Type F (high range water-reducing) or Type G (high range water-reducing and retarding).

When a Type F or Type G high range water-reducing admixture is used, water-cement ratios shall be a minimum of 0.32.

Type F or Type G admixtures may be used, subject to the following restrictions:

For Class MS, SI, RR, SC and SH concrete, the water-cement ratio shall be a maximum of 0.44.

The Type F or Type G admixture shall be added at the jobsite unless otherwise directed by the Engineer. The initial slump shall be a minimum of 40 mm (1 1/2 in.) prior to addition of the Type F or Type G admixture, except as approved by the Engineer.

When a Type F or Type G admixture is used, retempering with water or with a Type G admixture will not be allowed. An additional dosage of a Type F admixture, not to exceed 40 percent of the original dosage, may be used to retemper concrete once, provided set time is not unduly affected. A second retempering with a Type F admixture may be used for all classes of concrete except Class PP and SC, provided that the dosage does not exceed the dosage used for the first retempering, and provided that the set time is not unduly affected. No further retempering will be allowed.

Air tests shall be performed after the addition of the Type F or Type G admixture.

**1021.04 Set Accelerating Admixtures.** The admixture shall comply with the requirements of AASHTO M 194, Type C (accelerating) or Type E (water reducing and accelerating)”

## **CURING AND PROTECTION OF CONCRETE CONSTRUCTION (BDE)**

Effective: January 1, 2004

Revise the second and third sentences of the eleventh paragraph of Article 503.06 of the Standard Specifications to read:

“Forms on substructure units shall remain in place at least 24 hours. The method of form removal shall not result in damage to the concrete.”

Delete the twentieth paragraph of Article 503.22 of the Standard Specifications.

Revise the “Unit Price Adjustments” table of Article 503.22 of the Standard Specifications to read:

“UNIT PRICE ADJUSTMENTS	
Type of Construction	Percent Adjustment in Unit Price
For concrete in substructures, culverts (having a waterway opening of more than 1 sq m (10 sq ft)), pump houses, and retaining walls (except concrete pilings, footings and foundation seals): When protected by: Protection Method II Protection Method I	   115% 110%
For concrete in superstructures: When protected by: Protection Method II Protection Method I	   123% 115%
For concrete in footings: When protected by: Protection Method I, II or III	   107%
For concrete in slope walls: When protected by: Protection Method I	   107%”

Delete the fourth paragraph of Article 504.05(a) of the Standard Specifications.

Revise the second and third sentences of the fifth paragraph of Article 504.05(a) of the Standard Specifications to read:

“All test specimens shall be cured with the units according to Article 1020.13.”

Revise the first paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

“Curing and Low Air Temperature Protection. The curing and protection for precast, prestressed concrete members shall be according to Article 1020.13 and this Article.”

Revise the first sentence of the second paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

“For curing, air vents shall be in place, and shall be so arranged that no water can enter the void tubes during the curing of the members.”

Revise the first sentence of the third paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

“As soon as each member is finished, the concrete shall be covered with curing material according to Article 1020.13.”

Revise the eighth paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

“The prestressing force shall not be transferred to any member before the concrete has attained the compressive strength of 28,000 kPa (4000 psi) or other higher compressive release strength specified on the plans, as determined from tests of 150 mm (6 in.) by 300 mm (12 in.) cylinders cured with the member according to Article 1020.13. Members shall not be shipped until 28-day strengths have been attained and members have a yard age of at least 4 days.”

Delete the third paragraph of Article 512.03(a) of the Standard Specifications.

Delete the last sentence of the second paragraph of Article 512.04(d) of the Standard Specifications.

Revise the “Index Table of Curing and Protection of Concrete Construction” table of Article 1020.13 of the Standard Specifications to read:

“INDEX TABLE OF CURING AND PROTECTION OF CONCRETE CONSTRUCTION			
TYPE OF CONSTRUCTION	CURING METHODS	CURING PERIOD DAYS	LOW AIR TEMPERATURE PROTECTION METHODS
<b>Cast-in-Place Concrete:</b> <sup>11/</sup>			
Pavement			
Shoulder	1020.13(a)(1)(2)(3)(4)(5) <sup>3/ 5/</sup>	3	1020.13(c)
Base Course			
Base Course Widening	1020.13(a)(1)(2)(3)(4)(5) <sup>1/ 2/</sup>	3	1020.13(c)
Driveway			
Median			
Curb			
Gutter	1020.13(a)(1)(2)(3)(4)(5) <sup>4/ 5/</sup>	3	1020.13(c) <sup>16/</sup>
Curb and Gutter			
Sidewalk			
Slope Wall			
Paved Ditch			
Catch Basin			
Manhole	1020.13(a)(1)(2)(3)(4)(5) <sup>4/</sup>	3	1020.13(c)
Inlet			
Valve Vault			
Pavement Patching	1020.13(a)(1)(2)(3)(4)(5) <sup>2/</sup>	3 <sup>12/</sup>	1020.13(c)
Pavement Replacement	1020.13(a)(1)(2)(3)(4)(5) <sup>1/ 2/</sup>	3	442.06(h) and 1020.13(c)
Railroad Crossing	1020.13(a)(3)(5)	1	1020.13(c)
Piles	1020.13(a)(3)(5)	7	1020.13(e)(1)(2)(3)
Footings			
Foundation Seals	1020.13(a)(1)(2)(3)(4)(5) <sup>4/6/</sup>	7	1020.13(e)(1)(2)(3)
Substructure	1020.13(a)(1)(2)(3)(4)(5) <sup>1/7/</sup>	7	1020.13(e)(1)(2)(3)
Superstructure (except deck)	1020.13(a)(1)(2)(3)(5) <sup>8/</sup>	7	1020.13(e)(1)(2)
Deck	1020.13(a)(5)	7	1020.13(e)(1)(2) <sup>17/</sup>
Retaining Walls	1020.13(a)(1)(2)(3)(4)(5) <sup>1/7/</sup>	7	1020.13(e)(1)(2)
Pump Houses	1020.13(a)(1)(2)(3)(4)(5) <sup>1/</sup>	7	1020.13(e)(1)(2)
Culverts	1020.13(a)(1)(2)(3)(4)(5) <sup>4/6/</sup>	7	1020.13(e)(1)(2) <sup>18/</sup>
Other Incidental Concrete	1020.13(a)(1)(2)(3)(5)	3	1020.13(c)

<b>Precast Concrete:</b> <sup>11/</sup>		
Bridge Beams		
Piles		
Bridge Slabs	1020.13(a)(3)(5) <sup>9/10/</sup>	As required. <sup>13/</sup> 504.06(c)(6), 1020.13(e)(2) <sup>19/</sup>
Nelson Type Structural Member		
All Other Precast Items	1020.13(a)(3)(4)(5) <sup>2/9/10/</sup>	As required. <sup>14/</sup> 504.06(c)(6), 1020.13(e)(2) <sup>19/</sup>
<b>Precast, Prestressed Concrete:</b> <sup>11/</sup>		
All Items	1020.13(a)(3)(5) <sup>9/10/</sup>	Until strand tensioning is released. <sup>5/</sup> 504.06(c)(6), 1020.13(e)(2) <sup>19/</sup>

Notes-General:

- 1/ Type I, membrane curing only
- 2/ Type II, membrane curing only
- 3/ Type III, membrane curing only
- 4/ Type I, II and III membrane curing
- 5/ Membrane curing will not be permitted between November 1 and April 15.
- 6/ The use of water to inundate footings, foundation seals or the bottom slab of culverts is permissible when approved by the Engineer, provided the water temperature can be maintained at 7 °C ( 45 °F) or higher.
- 7/ Asphalt Emulsion for Waterproofing may be used in lieu of other curing methods when specified and permitted according to Article 503.18.
- 8/ On non-traffic surfaces which receive protective coat according to Article 503.19, a linseed oil emulsion curing compound may be used as a substitute for protective coat and other curing methods. The linseed emulsion curing compound will be permitted between April 16 and October 31 of the same year, provided it is applied with a mechanical sprayer according to Article 1101.09 (b), and meets the material requirements of Article 1022.07.
- 9/ Steam curing (heat and moisture) is acceptable and shall be accomplished by the method specified in Article 504.06(c)(6).
- 10/ A moist room according to AASHTO M 201 is acceptable for curing.
- 11/ If curing is required and interrupted because of form removal for cast-in-place concrete items, precast concrete products, or precast prestressed concrete products, the curing shall be resumed within two hours from the start of the form removal.
- 12/ Curing maintained only until opening strength is attained, with a maximum curing period of three days.
- 13/ The curing period shall end when the concrete has attained the mix design strength. The producer has the option to discontinue curing when the concrete has attained 80 percent of the mix design strength or after seven days. All strength test specimens shall remain with the units and shall be subjected to the same curing method and environmental condition as the units, until the time of testing.
- 14/ The producer shall determine the curing period or may elect to not cure the product. All strength test specimens shall remain with the units and shall be subjected to the same curing method and environmental condition as the units, until the time of testing.
- 15/ The producer has the option to continue curing after strand release.
- 16/ When structural steel or structural concrete is in place above slope wall, Article 1020.13(c) shall not apply. The protection method shall be according to Article 1020.13(e)(1).



- 17/ When Article 1020.13(e)(2) is used to protect the deck, the housing may enclose only the bottom and sides. The top surface shall be protected according to Article 1020.13(e)(1).
- 18/ For culverts having a waterway opening of 1 sq m (10 sq ft) or less, the culverts may be protected according to Article 1020.13(e)(3).
- 19/ The seven day protection period in the first paragraph of Article 1020.13(e)(2) shall not apply. The protection period shall end when curing is finished. For the third paragraph of Article 1020.13(e)(2), the decrease in temperature shall be according to Article 504.06(c)(6)."

Add the following to Article 1020.13(a) of the Standard Specifications:

“(5) Wetted Cotton Mat Method. After the surface of concrete has been textured or finished, it shall be covered immediately with dry cotton mats. The cotton mats shall be placed in a manner which will not mar the concrete surface. A texture resulting from the cotton mat material is acceptable. The cotton mats shall then be wetted immediately and thoroughly soaked with a gentle spray of water. For bridge decks, a foot bridge shall be used to place and wet the cotton mats.

The cotton mats shall be maintained in a wetted condition until the concrete has hardened sufficiently to place soaker hoses without marring the concrete surface. The soaker hoses shall be placed on top of the cotton mats at a maximum 1.2 m (4 ft) spacing. The cotton mats shall be kept wet with a continuous supply of water for the remainder of the curing period. Other continuous wetting systems may be used if approved by the Engineer.

After placement of the soaker hoses, the cotton mats shall be covered with white polyethylene sheeting or burlap-polyethylene blankets.

For construction items other than bridge decks, soaker hoses or a continuous wetting system will not be required if the alternative method keeps the cotton mats wet. Periodic wetting of the cotton mats is acceptable.

For areas inaccessible to the cotton mats on bridge decks, curing shall be according to Article 1020.13(a)(3).”

Revise the first paragraph of Article 1020.13(c) of the Standard Specifications to read:

“Protection of Portland Cement Concrete, Other Than Structures, From Low Air Temperatures. When the official National Weather Service forecast for the construction area predicts a low of 0 °C (32 °F), or lower, or if the actual temperature drops to 0 °C (32 °F), or lower, concrete less than 72 hours old shall be provided at least the following protection:”

Delete Article 1020.13(d) and Articles 1020.13(d)(1),(2),(3),(4) of the Standard Specifications.

Revise the first five paragraphs of Article 1020.13(e) of the Standard Specifications to read:

“Protection of Portland Cement Concrete Structures From Low Air Temperatures. When the official National Weather Service Forecast for the construction area predicts a low below 7 °C (45 °F), or if the actual temperature drops below 7 °C (45 °F), concrete less

than 72 hours old shall be provided protection. Concrete shall also be provided protection when placed during the winter period of December 1 through March 15. Concrete shall not be placed until the materials, facilities and equipment for protection are approved by the Engineer.

When directed by the Engineer, the Contractor may be required to place concrete during the winter period. If winter construction is specified, the Contractor shall proceed with the construction, including concrete, excavation, pile driving, steel erection and all appurtenant work required for the complete construction of the item, except at times when weather conditions make such operations impracticable.

Regardless of the precautions taken, the Contractor shall be responsible for protection of the concrete placed and any concrete damaged by cold temperatures shall be removed and replaced by the Contractor at his/her own expense.”

Add the following at the end of the third paragraph of Article 1020.13(e)(1) of the Standard Specifications:

“The Contractor shall provide means for checking the temperature of the surface of the concrete during the protection period.”

Revise the second sentence of the first paragraph of Article 1020.13(e)(2) of the Standard Specifications to read:

“The Contractor shall provide means for checking the temperature of the surface of the concrete or air temperature within the housing during the protection period.”

Delete the last sentence of the first paragraph of Article 1020.13(e)(3) of the Standard Specifications.

Add the following Article to Section 1022 of the Standard Specifications:

**“1022.06 Cotton Mats.** Cotton mats shall consist of a cotton fill material, minimum 400 g/sq m (11.8 oz/sq yd), covered with unsized cloth or burlap, minimum 200 g/sq m (5.9 oz/sq yd), and be tufted or stitched to maintain stability.

Cotton mats shall be in a condition satisfactory to the Engineer. Any tears or holes in the mats shall be repaired.

Add the following Article to Section 1022 of the Standard Specifications:

**“1022.07 Linseed Oil Emulsion Curing Compound.** Linseed oil emulsion curing compound shall be composed of a blend of boiled linseed oil and high viscosity, heavy bodied linseed oil emulsified in a water solution. The curing compound shall meet the requirements of a Type I, II, or III according to Article 1022.01, except the drying time requirement will be waived. The oil phase shall be 50 ± 4 percent by volume. The oil phase shall consist of 80 percent by mass (weight) boiled linseed oil and 20 percent by mass (weight ) Z-8 viscosity linseed oil. The water phase shall be 50 ± 4 percent by volume.”

Revise Article 1020.14 of the Standard Specifications to read:

**“1020.14 Temperature Control for Placement.** Temperature control for concrete placement shall conform to the following requirements:

- (a) Temperature Control other than Structures. The temperature of concrete immediately before placing, shall be not less than 10 °C (50 °F) nor more than 32 °C (90 °F). Aggregates and/or water shall be heated or cooled as necessary to produce concrete within these temperature limits.

When the temperature of the plastic concrete reaches 30 °C (85 °F), an approved retarding admixture shall be used or the approved water reducing admixture in use shall have its dosage increased by 50 percent over the dosage recommended on the Department's Approved List of Concrete Admixtures for the temperature experienced. The amount of retarding admixture to be used will be determined by the Engineer. This requirement may be waived by the Engineer when fly ash compensated mixtures are used.

Plastic concrete temperatures up to 35 °C (96 °F), as placed, may be permitted provided job site conditions permit placement and finishing without excessive use of water on and/or overworking of the surface. The occurrence within 24 hours of unusual surface distress shall be cause to revert to a maximum 32 °C (90 °F) plastic concrete temperature.

Concrete shall not be placed when the air temperature is below 5 °C (40 °F) and falling or below 2 °C (35 °F), without permission of the Engineer. When placing of concrete is authorized during cold weather, the Engineer may require the water and/or the aggregates to be heated to not less than 20 °C (70 °F) nor more than 65 °C (150 °F). The aggregates may be heated by either steam or dry heat prior to being placed in the mixer. The apparatus used shall heat the mass uniformly and shall be so arranged as to preclude the possible occurrence of overheated areas which might damage the materials. No frozen aggregates shall be used in the concrete.

For pavement patching, refer to Article 442.06(e) for additional information on temperature control for placement.

- (b) Temperature Control for Structures. The temperature of concrete as placed in the forms shall be not less than 10 °C (50 °F) nor more than 32 °C (90 °F). Aggregates and/or water shall be heated or cooled as necessary to produce concrete within these temperature limits. When insulated forms are used, the temperature of the concrete mixture shall not exceed 25 °C (80 °F). If the Engineer determines that heat of hydration might cause excessive temperatures in the concrete, the concrete shall be placed at a temperature between 10 °C (50 °F) and 15 °C (60 °F), per the Engineer's instructions. When concrete is placed in contact with previously placed concrete, the temperature of the concrete may be increased as required to offset anticipated heat loss.

Concrete shall not be placed when the air temperature is below 7 °C (45 °F) and falling or below 4 °C (40 °F), without permission of the Engineer. When placing of concrete is

authorized during cold weather, the Engineer may require the water and/or the aggregates to be heated to not less than 20 °C (70 °F) nor more than 65 °C (150 °F). The aggregates may be heated by either steam or dry heat prior to being placed in the mixer. The apparatus used shall heat the mass uniformly and shall be so arranged as to preclude the possible occurrence of overheated areas which might damage the materials. No frozen aggregates shall be used in the concrete.

When the temperature of the plastic concrete reaches 30 °C (85 °F), an approved retarding admixture shall be used or the approved water reducing admixture in use shall have its dosage increased by 50 percent over the dosage recommended on the Department's Approved List of Concrete Admixtures for the temperature experienced. The amount of retarding admixture to be used will be determined by the Engineer. This requirement may be waived by the Engineer when fly ash compensated mixtures are used.

- (c) Temperature. The concrete temperature shall be determined according to ASTM C 1064."

#### **DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)**

Effective: September 1, 2000

Revised: June 1, 2004

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR part 26 and listed in the DBE Directory or most recent addendum.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract that the Contractor signs with a subcontractor:

The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of federally-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE firms performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined that the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. This determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform 20.00% of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set forth in this Special Provision:

- (a) The bidder documents that firmly committed DBE participation has been obtained to meet the goal; or
- (b) The bidder documents that a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders may consult the DBE Directory as a reference source for DBE companies certified by the Department. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217)785-4611, or by visiting the Department's web site at [www.dot.state.il.us](http://www.dot.state.il.us).

BIDDING PROCEDURES. Compliance with the bidding procedures of this Special Provision is required prior to the award of the contract and the failure of the as-read low bidder to comply will render the bid nonresponsive.

- (a) In order to assure the timely award of the contract, the as-read low bidder must submit a Disadvantaged Business Utilization Plan on Department form SBE 2026 within seven (7) working days after the date of letting. To meet the seven (7) day requirement, the bidder may send the Plan by certified mail or delivery service within the seven (7) working day period. If a question arises concerning the mailing date of a Plan, the mailing date will be established by the U.S. Postal Service postmark on the original certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service. It is the responsibility of the as-read low bidder to ensure that the postmark or receipt date is affixed within the seven (7) working days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Plan is to be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). It is the responsibility of the bidder to obtain confirmation of telefax delivery. The Department will not accept a Utilization Plan if it does not meet the seven (7) day submittal requirement, and the bid will be declared nonresponsive. In the event the bid is declared nonresponsive due to a failure to submit a Plan or failure to comply with the bidding procedures set forth herein, the Department

may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty, and may deny authorization to bid the project if re-advertised for bids. The Department reserves the right to invite any other bidder to submit a Utilization Plan at any time for award consideration or to extend the time for award.

- (b) The Utilization Plan shall indicate that the bidder either has obtained sufficient DBE participation commitments to meet the contract goal or has not obtained enough DBE participation commitments in spite of a good faith effort to meet the goal. The Utilization Plan shall further provide the name, telephone number and telefax number of a responsible official of the bidder designated for purposes of notification of plan approval or disapproval under the procedures of this Special Provision.
- (c) The Utilization Plan shall include a DBE Participation Commitment Statement, Department form SBE 2025, for each DBE proposed for the performance of work to achieve the contract goal. The signatures on these forms must be original signatures. All elements of information indicated on the said form shall be provided, including but not limited to the following:
  - (1) The name and address of each DBE to be used;
  - (2) A description, including pay item numbers, of the commercially useful work to be done by each DBE;
  - (3) The price to be paid to each DBE for the identified work specifically stating the quantity, unit price and total subcontract price for the work to be completed by the DBE. If partial pay items are to be performed by the DBE, indicate the portion of each item, a unit price where appropriate and the subcontract price amount;
  - (4) A commitment statement signed by the bidder and each DBE evidencing availability and intent to perform commercially useful work on the project; and
  - (5) If the bidder is a joint venture comprised of DBE firms and non-DBE firms, the plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s).
- (d) The contract will not be awarded until the Utilization Plan submitted by the bidder is approved. The Utilization Plan will be approved by the Department if the Plan commits sufficient commercially useful DBE work performance to meet the contract goal. The Utilization Plan will not be approved by the Department if the Plan does not commit sufficient DBE performance to meet the contract goal unless the bidder documents that it made a good faith effort to meet the goal. The good faith procedures of Section VIII of this special provision apply. If the Utilization Plan is not approved because it is deficient in a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no less than a five (5) working day period in order to cure the deficiency.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a

commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR part 26.55, the provisions of which govern over the summary contained herein.

- (a) DBE as the Contractor: 100% goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE firm does not count toward the DBE goals.
- (b) DBE as a joint venture Contractor: 100% goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.
- (c) DBE as a subcontractor: 100% goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the prime contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE firm does not count toward the DBE goal.
- (d) DBE as a trucker: 100% goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed and insured by the DBE must be used on the contract. Credit will be given for the full value of all such DBE trucks operated using DBE employed drivers. Goal credit will be limited to the value of the reasonable fee or commission received by the DBE if trucks are leased from a non-DBE company.
- (e) DBE as a material supplier:
  - (1) 60% goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
  - (2) 100% goal credit for the cost of materials or supplies obtained from a DBE manufacturer.
  - (3) 100% credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a regular dealer or manufacturer.

GOOD FAITH EFFORT PROCEDURES. If the bidder cannot obtain sufficient DBE commitments to meet the contract goal, the bidder must document in the Utilization Plan the good faith efforts made in the attempt to meet the goal. This means that the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which could reasonably be expected to obtain sufficient DBE participation. The Department will consider the quality, quantity and intensity of the kinds of efforts that the bidder has made. Mere *pro forma* efforts are not good faith efforts; rather, the bidder is expected to have taken those efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases, and will be considered by the Department.
- (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.
  - (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.
  - (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
  - (4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.  
  
b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime contractors are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable.
  - (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the contractor's efforts to meet the project goal.



- (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.
  - (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
  - (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.
- (b) If the Department determines that the Contractor has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided that it is otherwise eligible for award. If the Department determines that a good faith effort has not been made, the Department will notify the bidder of that preliminary determination by contacting the responsible company official designated in the Utilization Plan. The preliminary determination shall include a statement of reasons why good faith efforts have not been found, and may include additional good faith efforts that the bidder could take. The notification will designate a five (5) working day period during which the bidder shall take additional efforts. The bidder is not limited by a statement of additional efforts, but may take other action beyond any stated additional efforts in order to obtain additional DBE commitments. The bidder shall submit an amended Utilization Plan if additional DBE commitments to meet the contract goal are secured. If additional DBE commitments sufficient to meet the contract goal are not secured, the bidder shall report the final good faith efforts made in the time allotted. All additional efforts taken by the bidder will be considered as part of the bidder's good faith efforts. If the bidder is not able to meet the goal after taking additional efforts, the Department will make a pre-final determination of the good faith efforts of the bidder and will notify the designated responsible company official of the reasons for an adverse determination.
- (c) The bidder may request administrative reconsideration of a pre-final determination adverse to the bidder within the five (5) working days after the notification date of the determination by delivering the request to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The pre-final determination shall become final if a request is not made and delivered. A request may provide additional written documentation and/or argument concerning the issue of whether an adequate good faith effort was made to meet the contract goal. In addition, the request shall be considered a consent by the bidder to extend the time for award. The request will be forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order to consider all issues of whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten (10) working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization

Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid nonresponsive.

**CONTRACT COMPLIANCE.** Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal.

- (a) No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764. Telephone number (217) 785-4611. Telefax number (217) 785-1524.
- (b) All work indicated for performance by an approved DBE shall be performed, managed and supervised by the DBE executing the Participation Statement. The Contractor shall not terminate for convenience a DBE listed in the Utilization Plan and then perform the work of the terminated DBE with its own forces, those of an affiliate or those of another subcontractor, whether DBE or not, without first obtaining the written consent of the Bureau of Small Business Enterprises to amend the Utilization Plan. If a DBE listed in the Utilization Plan is terminated for reasons other than convenience, or fails to complete its work on the contract for any reason, the Contractor shall make good faith efforts to find another DBE to substitute for the terminated DBE. The good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, but only to the extent needed to meet the contract goal or the amended contract goal. The Contractor shall notify the Bureau of Small Business Enterprises of any termination for reasons other than convenience, and shall obtain approval for inclusion of the substitute DBE in the Utilization Plan. If good faith efforts following a termination of a DBE for cause are not successful, the Contractor shall contact the Bureau and provide a full accounting of the efforts undertaken to obtain substitute DBE participation. The Bureau will evaluate the good faith efforts in light of all circumstances surrounding the performance status of the contract, and determine whether the contract goal should be amended.
- (c) The Contractor shall maintain a record of payments for work performed to the DBE participants. The records shall be made available to the Department for inspection upon request. After the performance of the final item of work or delivery of material by a DBE and final payment therefor to the DBE by the Contractor, but not later than thirty (30) calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Report on

Department form SBE 2115 to the District Engineer. If full and final payment has not been made to the DBE, the Report shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes that the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Plan, the Department will deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages.

- (d) The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

### **EPOXY PAVEMENT MARKING (BDE)**

Effective: January 1, 2001

Revised: August 1, 2003

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

“(b) The Epoxide Value (WPE) of Component A shall be tested according to ASTM D 1652 on a pigment free basis. The WPE shall not vary more than plus or minus 50 units of the qualification samples.”

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

“(c) The Total Amine Value of Component B shall be tested according to ASTM D 2074. The Total Amine Value shall not vary more than plus or minus 50 units of the qualification samples.”

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

“(g) The epoxy pavement marking material, when mixed in the proper mix ratio and applied at 0.35 mm to 0.41 mm (14 to 16 mils) wet film thickness and with the proper saturation of glass spheres, shall exhibit a dry no pick-up time of twenty minutes or less when tested according to ASTM D 711.”

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

“(m) The glass beads meet the requirements of Article 1095.07 and the following:

- (1) The first drop glass beads shall be tested by the standard visual method of large glass spheres adopted by the Department. The beads shall have a silane coating and meet the following sieve requirements.

Sieve Size	U.S. Standard Sieve Number	% Passing (by weight)
1.70 mm	12	95-100
1.40 mm	14	75-95
1.18 mm	16	10-47
1.00 mm	18	0-7
850 µm	20	0-5

(2) The second drop glass beads shall be Type B.”

Revise the second sentence of the first paragraph of Article 1095.04(n) of the Standard Specifications to read:

“Subject the coated panel for 75 hours to accelerated weathering using the light and water exposure apparatus (fluorescent UV – condensation type) as specified in ASTM G 53 (equipped with UVB-313 lamps).”

#### **EROSION AND SEDIMENT CONTROL DEFICIENCY DEDUCTION (BDE)**

Effective: August 1, 2001

Revised: November 1, 2001

When the Engineer is notified or determines an erosion and/or sediment control deficiency(s) exists, he/she will direct the Contractor in writing to correct the deficiency. The Contractor shall then correct the deficiency within 24 hours. The deficiency may be any lack of repair, maintenance, or implementation of erosion and/or sediment control devices included in the contract, or any failure to comply with the conditions of the National Pollutant Discharge Elimination System (NPDES) Storm Water Permit for Construction Site Activities.

If the Contractor fails to correct the deficiency(s) within 24 hours, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The time period will begin with the initial written notification to the Contractor and end with the Engineer's acceptance of the corrected work. The per calendar day deduction will be either \$1000.00 or 0.05 percent of the awarded contract value, whichever is greater.

If the Contractor fails to respond, the Engineer may correct the deficiencies and deduct the cost from monies due or which may become due the Contractor. This corrective action shall in no way relieve the Contractor of his/her contractual requirements or responsibilities.

#### **EXPANSION JOINTS (BDE)**

Effective: August 1, 2003

Add the following paragraph after the second paragraph of Article 420.10(e) of the Standard Specifications:

“After the dowel bars are oiled, plastic expansion caps shall be secured to the bars maintaining a minimum expansion gap of 50 mm (2 in.) between the end of the bar and the end of the cap. The caps shall fit snugly on the bar and the closed end shall be watertight. For expansion joints formed using dowel bar basket assemblies, the caps shall be installed on the alternating free ends of the bars. For expansion joints formed using a construction header, the caps shall be installed on the exposed end of each bar once the header has been removed and the joint filler material has been installed.”

### **FLAGGER VESTS (BDE)**

Effective: April 1, 2003

Revised: April 1, 2005

Revise the first sentence of Article 701.04(c)(1) of the Standard Specifications to read:

“The flagger shall be stationed to the satisfaction of the Engineer and be equipped with a fluorescent orange, fluorescent yellow/green or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments and approved flagger traffic control signs conforming to Standard 702001 and Article 702.05(e).”

Revise Article 701.04(c)(6) of the Standard Specifications to read:

“(6) Nighttime Flagging. The flagger station shall be lit by additional overhead lighting other than streetlights. The flagger shall be equipped with a fluorescent orange, fluorescent yellow/green, or a combination of fluorescent orange and fluorescent yellow/green garment meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 3 garments.”

### **FREEZE-THAW RATING (BDE)**

Effective: November 1, 2002

Revise the first sentence of Article 1004.02(f) of the Standard Specifications to read:

“When coarse aggregate is used to produce portland cement concrete for base course, base course widening, pavement, driveway pavement, sidewalk, shoulders, curb, gutter, combination curb and gutter, median, paved ditch or their repair using concrete, the gradation permitted will be determined from the results of the Department’s Freeze-Thaw Test.”

### **FURNISHED EXCAVATION (BDE)**

Effective: August 1, 2002

Revised: November 1, 2004

Revise Article 204.01 of the Standard Specifications to read:

“**Description.** Borrow excavation and furnished excavation shall consist of excavating suitable materials obtained from locations approved by the Engineer and transporting the materials to various locations throughout the limits of the contract.”

Revise Article 204.07(b) of the Standard Specifications to read:

“(b) Measured Quantities. Furnished excavation will be computed for payment in cubic meters (cubic yards) as follows:

Furnished Excavation = Embankment - [Suitable Excavation x (1 - Shrinkage Factor)]

Where:

Embankment = the volume of fill in its final position computed by the method of average end areas and based upon the existing ground line as shown on the plans except as noted in (1) and (2) below;

Suitable Excavation = earth excavation, rock excavation, and other on-site excavation suitable for use in embankments as shown in the Earthwork Schedule on the plans;

Shrinkage Factor = 0.25 unless otherwise shown on the plans.

(1) If the Contractor so requests, the Engineer will reestablish the existing ground line after the clearing and tree removal have been performed according to Section 201 and the top 150 mm (6 in.) of the existing ground surface has been disked and compacted to the satisfaction of the Engineer.

(2) If settlement platforms are erected, the Engineer will reestablish the existing ground line after the embankment is complete as specified in Article 204.07(a)(2).

Furnished excavation placed in excess of that required for the execution of the contract will not be measured for payment.”

Add the following paragraph to the end of Article 204.07 of the Standard Specifications:

“The quantity for furnished excavation will not be recalculated when surplus, suitable materials are utilized in embankments according to Article 202.03.”

### **MULTILANE PAVEMENT PATCHING (BDE)**

Effective: November 1, 2002

Pavement broken and holes opened for patching shall be completed prior to weekend or holiday periods. Should delays of any type or for any reason prevent the completion of the work, temporary patches shall be constructed. Material able to support the average daily traffic and meeting the approval of the Engineer shall be used for the temporary patches. The cost of furnishing, placing, maintaining, removing and disposing of the temporary work, including traffic control, shall be the responsibility of the Contractor.

## NOTCHED WEDGE LONGITUDINAL JOINT (BDE)

Effective: July 1, 2004

**Description.** This work shall consist of constructing a notched wedge longitudinal joint between successive passes of bituminous concrete binder course that is placed in 57 mm (2 1/4 in.) or greater lifts on pavement that is open to traffic.

The notched wedge longitudinal joint shall consist of a 25 to 38 mm (1 to 1 1/2 in.) vertical notch at the centerline or lane line, a 230 to 300 mm (9 to 12 in.) uniform taper extending into the open lane, and a second 25 to 38 mm (1 to 1 1/2 in.) vertical notch (see Figure 1).

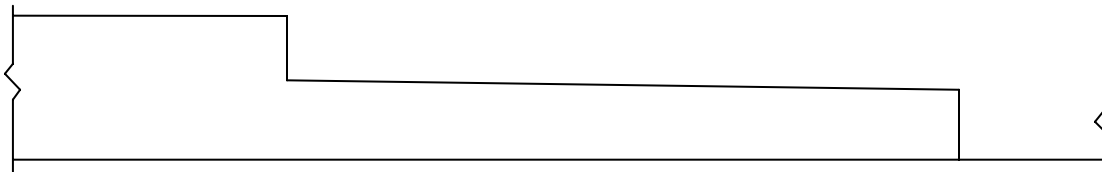


Figure 1

**Equipment.** Equipment shall meet the following requirements:

- a) **Strike Off Device.** The strike off device shall produce the notches and wedge of the joint and shall be adjustable. The device shall be attached to the paver and shall not restrict operation of the main screed.
- b) **Wedge Roller.** The wedge roller shall have a minimum diameter of 300 mm (12 in.), a minimum weight of 9 N/mm (50 lb/in.) of width, and a width equal to the wedge. The roller shall be attached to the paver.

### CONSTRUCTION REQUIREMENTS

**Joint Construction.** The notched wedge longitudinal joint shall be formed by the strike off device on the paver. The wedge shall then be compacted by the joint roller.

**Compaction.** Initial compaction of the wedge shall be as close to final density as possible. Final density requirements of the entire binder mat, including the wedge, shall remain unchanged.

**Prime Coat.** Immediately prior to placing the adjacent lift of binder, the bituminous material specified for the mainline prime coat shall be applied to the entire face of the notched wedge longitudinal joint. The material shall be uniformly applied at a rate of 0.2 to 0.5 L/sq m (0.05 to 0.1 gal/sq yd).

**Method of Measurement.** The notched wedge longitudinal joint will not be measured for payment.

The prime coat will be measured for payment according to Article 406.23 of the Standard Specifications.

Basis of Payment. The work of constructing the notched wedge longitudinal joint will not be paid for separately but shall be considered as included in the cost of the bituminous concrete binder course being constructed.

The prime coat will be paid for according to Article 406.24 of the Standard Specifications.

### **ORGANIC ZINC RICH PAINT SYSTEM**

Effective: November 1, 2001

Revised: August 1, 2003

Add the following to Section 1008 of the Standard Specifications:

“ **1008.26 Organic Zinc-Rich Paint System.** The organic zinc-rich paint system shall consist of an organic zinc-rich primer, an epoxy or urethane intermediate coat, and aliphatic urethane finish coats. It is intended for use over blast-cleaned steel when three-coat shop applications are specified. The system is also suitable for field painting blast-cleaned existing structures.

(a) General Requirements.

(1) Compatibility. Each coating in the system shall be supplied by the same paint manufacturer.

(2) Toxicity. Each coating shall contain less than 0.01 percent lead in the dry film and no more than trace amounts of hexavalent chromium, cadmium, mercury or other toxic heavy metals.

(3) Volatile Organics. The volatile organic compounds of each coating shall not exceed 420 g/L (3.5 lb/gal) as applied.

(b) Test Panel Preparation.

(1) Substrate and Surface Preparation. Test panels shall be AASHTO M 270M, Grade 250 (M 270 Grade 36), hot-rolled steel measuring 100 mm x 150 mm (4 in. x 6 in.). Panels shall be blast-cleaned per SSPC-SP5 white metal condition using metallic abrasive. The abrasive shall be a 60/40 mix of shot and grit. The shot shall be an SAE shot number S230 and the grit an SAE number G40. Hardness of the shot and grit shall be Rockwell C45. The anchor profile shall be 40-65 microns (1.5-2.5 mils) measured according to ASTM D 4417, Method C.

(2) Application and Curing. All coatings shall be spray applied at the manufacturer's recommended film thickness. The coated panels shall be cured at least 14 days at 24 °C ± 1 °C (75 °F ± 2 °F) and 50 ± 5 percent relative humidity.

(3) Scribing. The test panels shall be scribed according to ASTM D 1654 with a single “X” mark centered on the panel. The rectangular dimensions of the scribe shall have a top width of 50 mm (2 in.) and a height of 100 mm (4 in.). The scribe cut shall expose the steel substrate as verified with a microscope.



- (4) Number of Panels. All testing shall be performed on triplicate panels.
- (c) Zinc-Rich Primer Requirements.
  - (1) Generic Type. This material shall be an organic zinc-rich epoxy or urethane primer. It shall be suitable for topcoating with epoxies, urethanes, and acrylics.
  - (2) Zinc Dust. The zinc dust pigment shall comply with ASTM D 520, Type II.
  - (3) Slip Coefficient. The organic zinc coating shall meet a Class B AASHTO slip coefficient (0.50 or greater) for structural steel joints using ASTM A 325M (A 325) or A 490M (A 490) bolts.
  - (4) Salt Fog. There shall be no delamination, blistering, rust creepage at the scribe, or rusting at the scribe edges after 5,000 hours of salt fog exposure when tested according to ASTM B 117 and evaluated according to AASHTO R 31.
  - (5) Cyclic Exposure. There shall be no delamination, blistering, rust creepage at the scribe, or rusting at the scribe edges after 5,000 hours of cyclic exposure when tested according to ASTM D 5894 and evaluated according to AASHTO R 31.
  - (6) Humidity Exposure. There shall be no delamination, blistering, rust creepage at the scribe, or rusting at the scribe edges after 4,000 hours of humidity exposure when tested according to ASTM D 2247 and evaluated according to AASHTO R 31.
  - (7) Adhesion. The adhesion to an abrasively blasted steel substrate shall not be less than 6200 kPa (900 psi) when tested according to ASTM D 4541 Annex A4.
  - (8) Freeze Thaw Stability. There shall be no reduction of adhesion, which exceeds the test precision, after 30 days of freeze/thaw/immersion testing. One 24-hour cycle shall consist of 16 hours of approximately  $-30^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$ ) followed by 4 hours of thawing at  $50^{\circ}\text{C}$  ( $122^{\circ}\text{F}$ ) and 4 hours tap water immersion at  $25^{\circ}\text{C}$  ( $77^{\circ}\text{F}$ ). The test panels shall remain in the freezer on weekends and holidays.
- (d) Intermediate Coat Requirements.
  - (1) Generic Type. This material shall be an epoxy or urethane. It shall be suitable as an intermediate coat over inorganic and organic zinc primers and compatible with acrylic, epoxy, and polyurethane topcoats.
  - (2) Color. The color of the intermediate coat shall be white or off-white.
- (e) Urethane Finish Coat Requirements.
  - (1) Generic Type. This material shall be an aliphatic urethane. It shall be suitable as a topcoat over epoxies and urethanes.
  - (2) Color and Hiding Power. The finish coat shall match Munsell Glossy Color 7.5G 4/8 Interstate Green, 2.5YR 3/4 Reddish Brown, 10B 3/6 Blue, or 5B 7/1 Gray. The color difference shall not exceed 3.0 Hunter Delta E Units. Color difference shall be measured by instrumental

comparison of the designated Munsell standard to a minimum dry film thickness of 75 microns (3 mils) of sample coating produced on a test panel according to ASTM D 823, Practice E, Hand-Held, Blade Film Application. Color measurements shall be determined on a spectrophotometer with 45 degrees circumferential/zero degrees geometry, illuminant C, and two degrees observer angle. The spectrophotometer shall measure the visible spectrum from 380-720 nanometers with a wavelength interval and spectral bandpass of 10 nanometers.

The contrast ratio of the finish coat at 75 microns (3 mils) dry film thickness shall not be less than 0.99 when tested according to ASTM D 2805.

(3) Weathering Resistance. Test panels shall be aluminum alloy measuring 300 mm x 100 mm (12 in. x 4 in.) prepared according to ASTM D 1730 Type A, Method 1 Solvent Cleaning. A minimum dry film thickness of 75 microns (3 mils) of finish coat shall be applied to three test panels according to ASTM D 823, Practice E, Hand Held Blade Film Application. The coated panels shall be cured at least 14 days at 24 °C ± 1 °C (75 °F ± 2 °F) and 50 ± 5 percent relative humidity. The panels shall be subjected to 300 hours of accelerated weathering using the light and water exposure apparatus (fluorescent UV - condensation type) as specified in ASTM G 53-96 and ASTM G 154 (equipped with UVB-313 lamps). The cycle shall consist of 8 hours UV exposure at 60 °C (140 °F) followed by 4 hours of condensation at 40 °C (104 °F). After exposure, rinse the panel with clean water; allow to dry at room temperature for one hour. The exposed panels shall not show a color change of more than 3 Hunter Delta E Units.

(f) Three Coat System Requirements.

(1) Finish Coat Color. For testing purposes, the color of the finish coat shall match Federal Standard No 595, color chip 14062 (green).

(2) Salt Fog. When tested according to ASTM B 117 and evaluated according to AASHTO R 31, the paint system shall exhibit no spontaneous delamination and not exceed the following acceptance levels after 5,000 hours of salt fog exposure:

Salt Fog Acceptance Criteria (max)			
Blister Criteria	Rust Criteria		
Size/Frequency	Maximum Creep	Average Creep	% Rusting at Scribed Edges
#8 Few	4mm	1mm	1

(3) Cyclic Exposure. When tested according to ASTM D 5894 and evaluated according to AASHTO R 31, the paint system shall exhibit no spontaneous delamination and not exceed the following acceptance levels after 5,000 hours of cyclic exposure:

Cyclic Exposure Acceptance Criteria (max)			
Blister Criteria	Rust Criteria		
Size/Frequency	Maximum Creep	Average Creep	% Rusting at Scribed Edges
#8 Few	2mm	1mm	1

(4) Humidity Exposure. There shall be no delamination, blistering, rust creepage at the scribe, or rusting at the scribe edges after 4,000 hours of humidity exposure when tested according to ASTM D 2247 and evaluated according to AASHTO R 31.

(5) Adhesion. The adhesion to an abrasively blasted steel substrate shall not be less than 6200 kPa (900 psi) when tested according to ASTM D 4541 Annex A4.

(6) Freeze Thaw Stability. There shall be no reduction of adhesion, which exceeds the test precision, after 30 days of freeze/thaw/immersion testing. One 24 hour cycle shall consist of 16 hours of approximately  $-30^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$ ) followed by 4 hours of thawing at  $50^{\circ}\text{C}$  ( $122^{\circ}\text{F}$ ) and 4 hours tap water immersion at  $25^{\circ}\text{C}$  ( $77^{\circ}\text{F}$ ). The test panels shall remain in the freezer mode on weekends and holidays.

(g) Qualification Samples and Tests. The manufacturer shall supply, to an independent test laboratory and to the Department, samples of the organic zinc-rich primer, epoxy or urethane intermediate coat, and aliphatic urethane finish coats for evaluation. Prior to approval and use, the manufacturer shall submit a notarized certification of the independent laboratory, together with results of all tests, stating that these materials meet the requirements as set forth herein. The certified test report shall state lots tested, manufacturer's name, product names, and dates of manufacture. New certified test results and samples for testing by the Department shall be submitted any time the manufacturing process or paint formulation is changed. All costs of testing, other than tests conducted by the Department, shall be borne by the manufacturer.

(h) Acceptance Samples and Certification. A 1 L (1 qt) sample of each lot of paint produced for use on state or local agency projects shall be submitted to the Department for testing, together with a manufacturer's certification. The certification shall state that the formulation for the lot represented is essentially identical to that used for qualification testing. All acceptance samples shall be witnessed by a representative of the Illinois Department of Transportation. The organic zinc-rich primer, epoxy or urethane intermediate coat, and aliphatic urethane finish coats shall not be used until tests are completed and they have met the requirements as set forth herein."

#### **PARTIAL PAYMENTS (BDE)**

Effective: September 1, 2003

Revise Article 109.07 of the Standard Specifications to read:

**"109.07 Partial Payments.** Partial payments will be made as follows:

- (a) Progress Payments. At least once each month, the Engineer will make a written estimate of the amount of work performed in accordance with the contract, and the value thereof at the contract unit prices. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than \$1000.00 will be approved for payment other than the final payment.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department

determines that compliance has been achieved. Furthermore, progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c).

- (b) **Material Allowances.** At the discretion of the Department, payment may be made for materials, prior to their use in the work, when satisfactory evidence is presented by the Contractor. Satisfactory evidence includes justification for the allowance (to expedite the work, meet project schedules, regional or national material shortages, etc.), documentation of material and transportation costs, and evidence that such material is properly stored on the project or at a secure location acceptable and accessible to the Department.

Material allowances will be considered only for nonperishable materials when the cost, including transportation, exceeds \$10,000 and such materials are not expected to be utilized within 60 days of the request for the allowance. For contracts valued under \$500,000, the minimum \$10,000 requirement may be met by combining the principal (material) product of no more than two contract items. An exception to this two item limitation may be considered for any contract regardless of value for items in which material (products) are similar except for type and/or size.

Material allowances shall not exceed the value of the contract items in which used and shall not include the cost of installation or related markups. Amounts paid by the Department for material allowances will be deducted from estimates due the Contractor as the material is used. Two-sided copies of the Contractor's cancelled checks for materials and transportation must be furnished to the Department within 60 days of payment of the allowances or the amounts will be reclaimed by the Department."

#### **PAVEMENT AND SHOULDER RESURFACING (BDE)**

Effective: February 1, 2000

Revised: July 1, 2004

Revise Article 406.20 of the Standard Specifications to read:

**"406.20 Resurfacing Sequence.** The resurfacing operations shall satisfy the following requirements:

- (a) Before paving in a lane, the adjacent lane and its shoulder must be at the same elevation.
- (b) Each lift of resurfacing shall be completed, including shoulders, before the next lift is begun.
- (c) Elevation differences between lanes shall be eliminated within twelve calendar days.

Revise the first paragraph of Article 406.23 of the Standard Specifications to read:

**"406.23 Method of Measurement.** This work will be measured for payment according to the following:"

Revise the first sentence of the ninth paragraph of Article 406.23 of the Standard Specifications to read:

“When a Superpave Binder and Surface Course mixture is used on shoulders and is placed simultaneously with the traffic lane as specified in Section 482, the quantity of bituminous mixture placed on the traffic lane that will be paid for will be limited to a calculated tonnage based upon actual mat width and length, plan thickness or a revised thickness authorized by the Engineer, and design mix weight per millimeter (inch) of thickness.”

Delete the tenth paragraph of Article 406.23 of the Standard Specifications.

Revise the second paragraph of Article 482.06 of the Standard Specifications to read:

“On pavement and shoulder resurfacing projects, the resurfacing sequence shall be according to Article 406.20. When the Superpave mixture option is used, the shoulders may be placed, at the Contractor’s option, simultaneously with the adjacent traffic lane for both the binder and surface courses, provided the specified density, thickness and cross slope of both the pavement and shoulder can be satisfactorily obtained.”

#### **PAVEMENT THICKNESS DETERMINATION FOR PAYMENT (BDE)**

Effective: April 1, 1999

Revised: January 1, 2004

Description. This work shall consist of determining pavement thickness for payment for full depth bituminous concrete and all pcc pavements. Pavement pay items that individually contain at least 840 sq m (1000 sq yd) of contiguous pavement will be subject to this Special Provision with the following exclusions: temporary pavements; variable width pavement; radius returns and side streets less than 125 m (400 ft) in length; and turn lanes of constant width less than 125 m (400 ft) in length. The areas of pavement excluded from the pay adjustment as described in this Special Provision will be cored according to Article 407.10 of the Standard Specifications. Temporary pavements are defined as pavements constructed and removed under this contract.

Materials. Rapid set materials shall be obtained from the Department’s approved list of Packaged, Dry, Rapid Hardening Cementitious Materials For Concrete Repairs. Coarse aggregate may be added to the mortar if allowed by the manufacturer’s instructions on the package. Mixing shall be according to the manufacture’s recommendations.

Equipment. Cores shall be taken utilizing an approved coring machine. The cores shall have a diameter of 50 mm (2 in.). The cores shall be measured utilizing an approved measuring device.

#### **CONSTRUCTION REQUIREMENTS**

Tolerance in Thickness. Determination of the pavement thickness shall be performed after the pavement surface tests and all corrective grinding are complete according to Article 407.09 of the Standard Specifications. Adjustments made in the contract unit price for pavement thickness will be in addition to and independent of those made for the Profile Index.

The pavement will be divided into approximately equal lots of not more than 1500 m (5000 ft) in length. When the length of a continuous strip of pavement is less than 1500 m (5000 ft), these short lengths of pavement, ramps, turn lanes, and other short sections of continuous pavement shall be grouped together to form lots of approximately 1500 m (5000 ft) in length. Short segments between structures will be measured continuously with the structure segments omitted. Each lot will be subdivided into ten equal sublots. The width of a subplot and lot will be the width from the pavement edge to the adjacent lane line, from one lane line to the next, or between pavement edges for single-lane pavements.

Fifty millimeter (Two inch) cores shall be taken from the pavement by the Contractor at random locations selected by the Engineer. When computing the thickness of a lot, one core will be taken per subplot. Core locations will be specified by the Engineer prior to beginning the coring operations.

The Contractor and the Engineer shall witness the coring operations, the measurement, and recording of the cores. Core measurements will be determined immediately upon removal from the core bit and prior to moving to the next core location. Upon concurrence of the length, the core samples may be discarded.

Patching Holes. Upon completion of coring, all core holes shall be filled with a rapid set mortar or concrete. Only enough water to permit placement and consolidation by rodding shall be used, and the material shall be struck-off flush with the adjacent pavement.

For a rapid set mortar mixture, one part packaged rapid set cement shall be combined with two parts fine aggregate, by volume; or a packaged rapid set mortar shall be used. For a rapid set concrete mixture, a packaged rapid set mortar shall be combined with coarse aggregate according to the manufacturer's instructions or a packaged rapid set concrete shall be used. Mixing of a rapid set mortar or concrete shall be according to the manufacturer's instructions.

Deficient Sublot. When the thickness of the core in a subplot is deficient by more than ten percent of plan thickness, the Contractor will have the option of taking three additional cores selected at random by the Engineer within the same subplot at the Contractor's expense. The thickness of the additional three cores will be averaged with the original core thickness. When the average thickness shows the subplot to be deficient by ten percent or less, no additional action is necessary. If the Contractor chooses not to take additional cores, the pavement in the subplot shall be removed and replaced at the Contractor's expense. When additional cores are taken and the average thickness of the additional cores show the subplot to be deficient by more than ten percent, the pavement in that subplot shall be removed and replaced at the Contractor's expense. When requested in writing by the Contractor, the Engineer, at his/her option, may permit in writing such thin pavement to remain in place. For Bituminous Concrete Pavement (Full Depth) allowed to remain in place, additional lift(s) may be placed, at the Contractor's expense, to bring the deficient pavement to plan thickness when the Engineer determines grade control conditions will permit such lift(s). The material thickness(es), areas to be overlaid, and method of placement used for additional lift(s) will be approved by the Engineer. When the thin pavement is removed and replaced or additional lifts are placed, the replacement pavement will be retested for thickness at the Contractor's expense. When the thin pavement is left in place and no additional lift(s) are placed, no payment will be made for the deficient pavement subplot. The thickness of the original core taken in the subplot will be used in determining the payment for the entire lot and no adjustment to the pay factor will be made for any corrective action taken.

Deficient Lot. After analyzing the cores, the Percent Within Limits will be calculated. A lot of pavement represented by the Percent Within Limits (PWL) of 60 percent or less, shall be removed and replaced at the Contractor's expense. When requested in writing by the Contractor, the Engineer, at his/her option, may permit in writing such pavement to remain in place. For Bituminous Concrete Pavement (Full Depth), allowed to remain in place, additional lift(s) may be placed, at the Contractor's expense, to bring the deficient pavement to plan thickness when the Engineer determines grade control conditions will permit such lift(s). The material, thickness(es), areas to be overlaid and method of placement used for the additional lift(s) will be approved by the Engineer. After either corrective action, the Contractor shall core the lot according to the "Coring Procedures" at no additional cost to the Department. The PWL will then be recalculated for the lot, however, the pay factor for the lot will be a maximum of 100 percent. When requested in writing by the Contractor, the Engineer, at his/her option, may permit in writing, the lot to remain in place. When the lot is left in place and no additional lifts are placed the pay factor for the lot will be based on the calculated PWL.

Right of Discovery. When the Engineer has reason to believe the random core selection process will not accurately represent the true conditions of the work, he/she may order cores in addition to those specified. The additional cores shall be taken at specific locations determined by the Engineer. The Engineer will provide notice to the Contractor containing an explanation of the reasons for his/her action. These additional cores and locations will be determined prior to commencement of coring operations. When the additional cores show the pavement to be deficient by more than ten percent, additional cores shall be taken at locations determined by the Engineer to determine the limits of the deficient pavement area. The deficient pavement area will be defined as the area between two acceptable cores. An acceptable core is a core with a thickness of 90 percent or more of plan thickness. The defined pavement area shall be removed and replaced at the Contractor's expense. When requested by the Contractor, the Engineer, at his/her option, may permit in writing such thin pavement to remain in place. On Bituminous Concrete Pavement (Full Depth) allowed to remain in place, additional lift(s) may be placed to bring the deficient pavement to plan thickness when the Engineer determines that grade control conditions will permit such lift(s). The material, thickness(es), areas to be overlaid and method of placement for the additional lift(s) will be approved by the Engineer. When the thin pavement is removed and replaced or additional lifts are placed, the replacement pavement will be retested for thickness at the Contractor's expense. When the thin pavement is left in place and no additional lift(s) are placed, no payment will be made for the deficient pavement. When the additional cores show the pavement to be deficient by ten percent or less the additional cores will be paid for according to Article 109.04. When the additional cores show the pavement to be deficient by more than ten percent the additional cores taken in the deficient area shall be at the Contractor's expense.

Profile Index Adjustment. After any section of pavement is removed and replaced or any additional lifts are added, the corrected areas shall be tested for pavement smoothness and any necessary Profile Index adjustments and/or corrections will be made based on these final profile readings. Such surface testing shall be performed at the Contractor's expense.

Core Analysis. Cores will be analyzed according to the following:

(a) Definition:

- $x_i$  = Individual values (core lengths) under consideration
- $n$  = Number of individual values under consideration  
(10 per lot)
- $\bar{x}$  = Average of the values under consideration
- LSL = Lower Specification Limit (LSL = 0.98 plan thickness for pavement)
- $Q_L$  = Lower Quality Index
- $S$  = Sample Standard Deviation
- PWL = Percent Within Limits

Determine  $\bar{x}$  for the lot to the nearest two decimal places.

Compute the sample standard deviation to the nearest three decimal places using:

$$S = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n-1}} \quad \text{where} \quad \Sigma(x_i - \bar{x})^2 = (x_1 - \bar{x})^2 + (x_2 - \bar{x})^2 + \dots + (x_{10} - \bar{x})^2$$

Determine the Lower Quality Index to the nearest two decimal places using:

$$Q_L = \frac{(\bar{x} - LSL)}{S}$$

Determine the percentage that will fall above the Lower Specification Limit (LSL) by going to the attached Table and utilizing calculated  $Q_L$ . Read the appropriate PWL value from the Table. For  $Q_L$  values less than zero the value shown in the table must be subtracted from 100 to obtain PWL.

Pay Adjustment. The following pay adjustment equation will be used to determine (to the nearest two decimal places) the pay factor for each lot.

$$\text{Pay Factor (PF) in percent} = 55 + 0.5 (\text{PWL})$$

If  $\bar{x}$  for a lot is less than the plan thickness, the maximum pay factor for that lot will be 100 percent.

Total Payment. The payment will be based on the appropriate pay items in Sections 407, 420, and 421. The final payment will be adjusted according to the following equation:

$$\text{Total Payment} = \text{TPF}[\text{CUP} (\text{TOTPAVT} - \text{DEFFPAVT})]$$

TPF = Total Pay Factor

CUP = Contract Unit Price

TOTPAVT = Area of Pavement Subject to Coring

DEFFPAVT = Area of Deficient Pavement



The TPF for the entire pavement will be the average of the PF for all the lots, however, not more than 102 percent of plan quantity will be paid.

Deficient pavement is defined as an area of pavement represented by a subplot deficient by more than 10 percent which is left in place with no additional thickness added.

All work involved in determining the total payment will be included in the contract unit prices of the pay items involved.

Percent Within Limits							
Quality Index (Q <sub>L</sub> )*	Percent Within Limits (PWL)	Quality Index (Q <sub>L</sub> )*	Percent Within Limits (PWL)	Quality Index (Q <sub>L</sub> )*	Percent Within Limits (PWL)	Quality Index (Q <sub>L</sub> )*	Percent Within Limits (PWL)
0.00	50.00	0.40	65.07	0.80	78.43	1.20	88.76
0.01	50.38	0.41	65.43	0.81	78.72	1.21	88.97
0.02	50.77	0.42	65.79	0.82	79.02	1.22	89.17
0.03	51.15	0.43	66.15	0.83	79.31	1.23	89.38
0.04	51.54	0.44	66.51	0.84	79.61	1.24	89.58
0.05	51.92	0.45	66.87	0.85	79.90	1.25	89.79
0.06	52.30	0.46	67.22	0.86	80.19	1.26	89.99
0.07	52.69	0.47	67.57	0.87	80.47	1.27	90.19
0.08	53.07	0.48	67.93	0.88	80.76	1.28	90.38
0.09	53.46	0.49	68.28	0.89	81.04	1.29	90.58
0.10	53.84	0.50	68.63	0.90	81.33	1.30	90.78
0.11	54.22	0.51	68.98	0.91	81.61	1.31	90.96
0.12	54.60	0.52	69.32	0.92	81.88	1.32	91.15
0.13	54.99	0.53	69.67	0.93	82.16	1.33	91.33
0.14	55.37	0.54	70.01	0.94	82.43	1.34	91.52
0.15	55.75	0.55	70.36	0.95	82.71	1.35	91.70
0.16	56.13	0.56	70.70	0.96	82.97	1.36	91.87
0.17	56.51	0.57	71.04	0.97	83.24	1.37	92.04
0.18	56.89	0.58	71.38	0.98	83.50	1.38	92.22
0.19	57.27	0.59	71.72	0.99	83.77	1.39	92.39
0.20	57.65	0.60	72.06	1.00	84.03	1.40	92.56
0.21	58.03	0.61	72.39	1.01	84.28	1.41	92.72
0.22	58.40	0.62	72.72	1.02	84.53	1.42	92.88
0.23	58.78	0.63	73.06	1.03	84.79	1.43	93.05
0.24	59.15	0.64	73.39	1.04	85.04	1.44	93.21
0.25	59.53	0.65	73.72	1.05	85.29	1.45	93.37
0.26	59.90	0.66	74.04	1.06	85.53	1.46	93.52
0.27	60.28	0.67	74.36	1.07	85.77	1.47	93.67
0.28	60.65	0.68	74.69	1.08	86.02	1.48	93.83
0.29	61.03	0.69	75.01	1.09	86.26	1.49	93.98
0.30	61.40	0.70	75.33	1.10	86.50	1.50	94.13
0.31	61.77	0.71	75.64	1.11	86.73	1.51	94.27
0.32	62.14	0.72	75.96	1.12	86.96	1.52	94.41
0.33	62.51	0.73	76.27	1.13	87.20	1.53	94.54
0.34	62.88	0.74	76.59	1.14	87.43	1.54	94.68
0.35	63.25	0.75	76.90	1.15	87.66	1.55	94.82
0.36	63.61	0.76	77.21	1.16	87.88	1.56	94.95
0.37	63.98	0.77	77.51	1.17	88.10	1.57	95.08
0.38	64.34	0.78	77.82	1.18	88.32	1.58	95.20
0.39	64.71	0.79	78.12	1.19	88.54	1.59	95.33

\*For Q<sub>L</sub> values less than zero, subtract the table value from 100 to obtain PWL

<b>Percent Within Limits (continued)</b>					
Quality Index (Q <sub>L</sub> )*	Percent Within Limits (PWL)	Quality Index (Q <sub>L</sub> )*	Percent Within Limits (PWL)	Quality Index (Q <sub>L</sub> )*	Percent Within Limits (PWL)
1.60	95.46	2.00	98.83	2.40	99.89
1.61	95.58	2.01	98.88	2.41	99.90
1.62	95.70	2.02	98.92	2.42	99.91
1.63	95.81	2.03	98.97	2.43	99.91
1.64	95.93	2.04	99.01	2.44	99.92
1.65	96.05	2.05	99.06	2.45	99.93
1.66	96.16	2.06	99.10	2.46	99.94
1.67	96.27	2.07	99.14	2.47	99.94
1.68	96.37	2.08	99.18	2.48	99.95
1.69	96.48	2.09	99.22	2.49	99.95
1.70	96.59	2.10	99.26	2.50	99.96
1.71	96.69	2.11	99.29	2.51	99.96
1.72	96.78	2.12	99.32	2.52	99.97
1.73	96.88	2.13	99.36	2.53	99.97
1.74	96.97	2.14	99.39	2.54	99.98
1.75	97.07	2.15	99.42	2.55	99.98
1.76	97.16	2.16	99.45	2.56	99.98
1.77	97.25	2.17	99.48	2.57	99.98
1.78	97.33	2.18	99.50	2.58	99.99
1.79	97.42	2.19	99.53	2.59	99.99
1.80	97.51	2.20	99.56	2.60	99.99
1.81	97.59	2.21	99.58	2.61	99.99
1.82	97.67	2.22	99.61	2.62	99.99
1.83	97.75	2.23	99.63	2.63	100.00
1.84	97.83	2.22	99.66	2.64	100.00
1.85	97.91	2.25	99.68	≥ 2.65	100.00
1.86	97.98	2.26	99.70		
1.87	98.05	2.27	99.72		
1.88	98.11	2.28	99.73		
1.89	98.18	2.29	99.75		
1.90	98.25	2.30	99.77		
1.91	98.31	2.31	99.78		
1.92	98.37	2.32	99.80		
1.93	98.44	2.33	99.81		
1.94	98.50	2.34	99.83		
1.95	98.56	2.35	99.84		
1.96	98.61	2.36	99.85		
1.97	98.67	2.37	99.86		
1.98	98.72	2.38	99.87		
1.99	98.78	2.39	99.88		

\*For Q<sub>L</sub> values less than zero, subtract the table value from 100 to obtain PWL

## **PAYMENTS TO SUBCONTRACTORS (BDE)**

Effective: June 1, 2000

Revised: September 1, 2003

Federal regulations found at 49 CFR §26.29 mandate the Department to establish a contract clause to require Contractors to pay subcontractors for satisfactory performance of their subcontracts no later than 30 days from the receipt of each payment made to the Contractor.

State law addresses the timing of payments to be made to subcontractors. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, generally requires that when a Contractor receives any payment from the Department, the Contractor is required to make corresponding, proportional payments to each subcontractor performing work within 15 calendar days after receipt of the state payment. Section 7 of the State Prompt Payment Act further provides that interest in the amount of 2% per month, in addition to the payment due, shall be paid to any subcontractor by the Contractor if the payment required by the Act is withheld or delayed without reasonable cause. The Act also provides that the time for payment required and the calculation of any interest due applies to transactions between subcontractors and lower-tier subcontractors throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

As progress payments are made to the Contractor in accordance with Article 109.07 of the Standard Specifications for Road and Bridge Construction, the Contractor shall make a corresponding partial payment within 15 calendar days to each subcontractor in proportion to the work satisfactorily completed by each subcontractor. The proportionate amount of partial payment due to each subcontractor shall be determined by the quantities measured or otherwise determined as eligible for payment by the Department and included in the progress payment to the Contractor. Subcontractors shall be paid in full within 15 calendar days after the subcontractor's work has been satisfactorily completed. The Contractor shall hold no retainage from the subcontractors.

This Special Provision does not create any rights in favor of any subcontractor against the State of Illinois or authorize any cause of action against the State of Illinois on account of any payment, nonpayment, delayed payment or interest claimed by application of the State Prompt Payment Act. The Department will neither determine the reasonableness of any cause for delay of payment nor enforce any claim to payment, including interest. Moreover, the Department will not approve any delay or postponement of the 15 day requirement. State law creates remedies available to any subcontractor or material supplier, regardless of tier, who has not been paid for work properly performed or material furnished. These remedies are a lien against public funds set forth in Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c), and a recovery on the Contractor's payment bond in accordance with the Public Construction Bond Act, 30 ILCS 550.

## **PERSONAL PROTECTIVE EQUIPMENT (BDE)**

Effective: July 1, 2004

All personnel, excluding flaggers, working outside of a vehicle (car or truck) within 7.6 m (25 ft) of pavement open to traffic shall wear a fluorescent orange, fluorescent yellow/green or a

combination of fluorescent orange and fluorescent yellow/.green vest meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments. Other types of garments may be substituted for the vest as long as the garments have manufacturers tags identifying them as meeting the ANSI Class 2 requirement.

### **PLASTIC BLOCKOUTS FOR GUARDRAIL (BDE)**

Effective: November 1, 2004

Add the following to Article 630.02 of the Standard Specifications:

“(h) Plastic Blockouts (Note 1.)

Note 1. Plastic blockouts, 150 mm (6 in.) deep, may be used in lieu of 150 mm (6 in.) deep wood block-outs for steel plate beam guardrail. The plastic blockouts shall be on the Department’s approved list.”

### **POLYUREA PAVEMENT MARKING (BDE)**

Effective: April 1, 2004

Description. This work shall consist of furnishing and applying pavement marking lines.

The type of polyurea pavement marking applied will be determined by the type of reflective media used. Polyurea Pavement Marking Type I shall use glass beads as a reflective media. Polyurea Pavement Marking Type II shall use a combination of composite reflective elements and glass beads as a reflective media.

Polyurea-based liquid pavement markings shall only be applied by Contractors on the list of Approved Polyurea Contractors maintained by the Engineer of Operations and in effect on the date of advertisement for bids.

Materials. Materials shall meet the following requirements:

- (a) Polyurea Pavement Marking. The polyurea pavement marking material shall consist of 100 percent solid two part system formulated and designed to provide a simple volumetric mixing ratio of two components (must be two or three volumes of Part A to one volume of Part B). No volatile or polluting solvents or fillers will be allowed.
- (b) Pigmentation. The pigment content by weight of component A shall be determined by low temperature ashing according to ASTM D 3723. The pigment content shall not vary more than  $\pm$  two percent from the pigment content of the original qualified paint.

White Pigment shall be Titanium Dioxide meeting ASTM D 476 Type II, Rutile.

Yellow Pigment shall be an Organic Yellow and contain no heavy metals.

- (c) Environmental. Upon heating to application temperature, the material shall not exude fumes which are toxic or injurious to persons or property.

- (d) Daylight Reflectance. The daylight directional reflectance of the cured polyurea material (without reflective media) shall be a minimum of 80 percent (white) and 50 percent (yellow) relative to magnesium oxide when tested using a color spectrophotometer with a 45 degrees circumferential /zero degrees geometry, illuminant C, and two degrees observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm. In addition, the color of the yellow polyurea shall visually match Color Number 33538 of Federal Standard 595a with chromaticity limits as follows:

X	0.490	0.475	0.485	0.539
Y	0.470	0.438	0.425	0.456

- (e) Weathering Resistance. The polyurea marking material, when mixed in the proper ratio and applied at 0.35 to 0.41 mm (14 to 16 mils) wet film thickness to an aluminum alloy panel (Federal Test Std. No. 141, Method 2013) and allowed to cure for 72 hours at room temperature, shall be subjected to accelerated weathering for 75 hours. The accelerated weathering shall be completed by using the light and water exposure apparatus (fluorescent UV - condensation type) and tested according to ASTM G 53.

The cycle shall consist of four hours UV exposure at 50 °C (122 °F) and four hours of condensation at 40 °C (104 °F). UVB 313 bulbs shall be used. At the end of the exposure period, the material shall show no substantial change in color or gloss.

- (f) Dry Time. The polyurea pavement marking material, when mixed in the proper ratio and applied at 0.35 to 0.41 mm (14 to 16 mils) wet film thickness and with the proper saturation of reflective media, shall exhibit a no-tracking time of ten minutes or less when tested according to ASTM D 711.
- (g) Adhesion. The catalyzed polyurea pavement marking materials when applied to a 100 x 100 x 50 mm (4 x 4 x 2 in.) concrete block, shall have a degree of adhesion which results in a 100 percent concrete failure in the performance of this test.

The concrete block shall be brushed on one side and have a minimum strength of 24,100 kPa (3500 psi). A 50 mm (2 in.) square film of the mixed polyurea shall be applied to the brushed surface and allowed to cure for 72 hours at room temperature. A 50 mm (2 in.) square cube shall be affixed to the surface of the polyurea by means of an epoxy glue. After the glue has cured for 24 hours, the polyurea specimen shall be placed on a dynamic testing machine in such a fashion so that the specimen block is in a fixed position and the 50 mm (2 in.) cube (glued to the polyurea surface) is attached to the dynamometer head. Direct upward pressure shall be slowly applied until the polyurea system fails. The location of the break and the amount of concrete failure shall be recorded.

- (h) Hardness. The polyurea pavement marking materials when tested according to ASTM D 2240, shall have a shore D hardness of between 70 and 100. Films shall be cast on a rigid substrate at 0.35 to 0.41 mm (14 to 16 mils) in thickness and allowed to cure at room temperature for 72 hours before testing.
- (i) Abrasion. The abrasion resistance shall be evaluated according to ASTM D 4060 using a Taber Abrader with a 1,000 gram load and CS 17 wheels. The duration of the test shall be 1,000 cycles. The loss shall be calculated by difference and be less than 120 mgs.

The tests shall be run on cured samples of polyurea material which have been applied at a film thickness of 0.35 to 0.41 mm (14 to 16 mils) to code S-16 stainless steel plates. The films shall be allowed to cure at room temperature for at least 72 hours and not more than 96 hours before testing.

(j) Reflective Media. The reflective media shall meet the following requirements:

(1) Type I - The glass beads shall meet the requirements of Article 1095.07 of the Standard Specifications and the following requirements:

a. First Drop Glass Beads The first drop glass beads shall be tested by the standard visual method of large glass spheres adopted by the Department. The beads shall have a silane coating and meet the following sieve requirements:

Sieve Size	U.S. Standard Sieve Number	% Passing (By Weight)
1.70 mm	12	95-100
1.40 mm	14	75-95
1.18 mm	16	10-47
1.00 mm	18	0-7
850 µm	20	0-5

b. Second Drop Glass Beads. The second drop glass beads shall meet the requirements of Article 1095.07 of the Standard Specifications for Type B.

(2) Type II - The combination of microcrystalline ceramic elements and glass beads shall meet the following requirements:

a. First Drop Glass Beads. The first drop glass beads shall meet the following requirements:

1. Composition. The elements shall be composed of a titania opacified ceramic core having clear and or yellow tinted microcrystalline ceramic beads embedded to the outer surface.
2. Index of Refraction. All microcrystalline reflective elements embedded to the outer surface shall have an index of refraction of 1.8 when tested by the immersion method.
3. Acid Resistance. A sample of microcrystalline ceramic beads supplied by the manufacturer, shall show resistance to corrosion of their surface after exposure to a one percent solution (by weight) of sulfuric acid. Adding 5.7 ml (0.2 oz) of concentrated acid into the water shall make the one percent acid solution. This test shall be performed by taking a 25 x 50 mm (1 x 2 in.) sample and adhering it to the bottom of a glass tray and placing just enough acid solution to completely immerse the sample. The tray shall be covered with a piece of glass to prevent evaporation and allow the sample to be exposed for 24 hours under these conditions. The acid solution shall be decanted (do not rinse, touch, or otherwise disturb the bead surfaces) and the sample dried while adhered to the glass tray in a 66 °C (150 °F) oven for approximately 15 minutes. Microscope examination (20X) shall show no white (corroded) layer on the entire surface.

b. Second Drop Glass Beads. The second drop glass beads shall meet the requirements of Article 1095.07 of the Standard Specifications for Type B or the following manufacturer's specification:

1. Sieve Analysis. The glass beads shall meet the following sieve requirements:

Sieve Size	U.S. Standard Sieve Number	% Passing (By Weight)
850 $\mu\text{m}$	20	100
600 $\mu\text{m}$	30	75-95
300 $\mu\text{m}$	50	15-35
150 $\mu\text{m}$	100	0-5

The manufacturer of the glass beads shall certify that the treatment of the glass beads meets the requirements of the polyurea manufacturer.

2. Imperfections. The surface of the glass beads shall be free of pits and scratches. The glass beads shall be spherical in shape and shall contain a maximum of 20 percent by weight of irregular shapes when tested by the standard method using a vibratile inclined glass plate as adopted by the Department.

3. Index of Refraction. The index of refraction of the glass beads shall be a minimum of 1.50 when tested by the immersion method at 25 °C (77 °F).

(k) Packaging. Microcrystalline ceramic reflective elements and glass beads shall be delivered in approved moisture proof bags or weather resistant bulk boxes. Each carton shall be legibly marked with the manufacturer, specifications and type, lot number, and the month and year the microcrystalline ceramic reflective elements and/or glass beads were packaged. The letters and numbers used in the stencils shall be a minimum of 12.7 mm (1/2 in.) in height.

(1) Moisture Proof Bags. Moisture proof bags shall consist of at least five ply paper construction unless otherwise specified. Each bag shall contain 22.7 kg (50 lb) net.

(2) Bulk Weather Resistance Boxes. Bulk weather resistance boxes shall conform to Federal Specification PPP-8-640D Class II or latest revision. Boxes are to be weather resistant, triple wall, fluted, corrugated-fiber board. Cartons shall be strapped with two metal straps. Straps shall surround the outside perimeter of the carton. The first strap shall be located approximately 50 mm (2 in.) from the bottom of the carton and the second strap shall be placed approximately in the middle of the carton. All cartons shall be shrink wrapped for protection from moisture. Cartons shall be lined with a minimum 4 mil polyester bag and meet Interstate Commerce Commission requirements. Cartons shall be approximately 1 x 1 m (38 x 38 in.), contain 910 kg (2000 lb) of microcrystalline ceramic reflective elements and/or glass beads and be supported on a wooden pallet with fiber straps.

(l) Packaging. The material shall be shipped to the job site in substantial containers and shall be plainly marked with the manufacturer's name and address, the name and color of the material, date of manufacture, and batch number.



- (m) Verification. Prior to approval and use of the polyurea pavement marking materials, the manufacturer shall submit a notarized certification of an independent laboratory, together with the results of all tests, stating these materials meet the requirements as set forth herein. The certification test report shall state the lot tested, manufacturer's name, brand name of polyurea and date of manufacture. The certification shall be accompanied by one 1/2 L (1 pt) samples each of Part A and Part B. Samples shall be sent in the appropriate volumes for complete mixing of Part A and Part B.

After approval by the Department, certification by the polyurea manufacturer shall be submitted for each batch used. New independent laboratory certified test results and samples for testing by the Department shall be submitted any time the manufacturing process or paint formulation is changed. All costs of testing (other than tests conducted by the Department) shall be borne by the manufacturer.

- (n) Acceptance samples. Acceptance samples shall consist of one 1/2 L (1 pt) samples of Part A and Part B, of each lot of paint. Samples shall be sent in the appropriate volumes for complete mixing of Part A and Part B. The samples shall be submitted to the Department for testing, together with a manufacturer's certification. The certification shall state the formulation for the lot represented is essentially identical to that used for qualification testing. All, acceptance samples will be taken by a representative of the Department. The polyurea pavement marking materials shall not be used until tests are completed and they have met the requirements as set forth herein.

- (o) Material Retainage. The manufacturer shall retain the test sample for a minimum of 18 months.

Equipment. The polyurea pavement marking compounds shall be applied through equipment specifically designed to apply two component liquid materials, glass beads and/or reflective elements in a continuous and skip-line pattern. The two-component liquid materials shall be applied after being accurately metered and then mixed with a static mix tube or airless impingement mixing guns. The static mixing tube or impingement mixing guns shall accommodate plural component material systems that have a volumetric ratio of 2 to 1 or 3 to 1. This equipment shall produce the required amount of heat at the mixing head and gun tip and maintain those temperatures within the tolerances specified. The guns shall have the capacity to deliver materials from approximately 5.7 to 11.4 L/min (1.5 to 3 gal/min) to compensate for a typical range of application speeds of 10 to 13 km/h (6 to 8 mph). The accessories such as spray tip, mix chamber, and rod diameter shall be selected according to the manufacturer's specifications to achieve proper mixing and an acceptable spray pattern. The application equipment shall be maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc. This equipment shall also have as an integral part of the gun carriage, a high pressure air spray capable of cleaning the pavement immediately prior to making application.

The equipment shall be capable of spraying both yellow and white polyurea, according to the manufacturer's recommended proportions and be mounted on a truck of sufficient size and stability with an adequate power source to produce lines of uniform dimensions and prevent application failure. The truck shall have at least two polyurea tanks each of 415 L (110 gal) minimum capacity and be equipped with hydraulic systems and agitators. It shall be capable of placing stripes on the left and right sides and placing two lines on a three-line system simultaneously with either line in a solid or intermittent pattern, in yellow or white, and applying the appropriate reflective media according to manufacturer's recommendations. All guns shall

be in full view of operations at all times. The equipment shall have a metering device to register the accumulated installed quantities for each gun, each day. Each vehicle shall include at least one operator who shall be a technical expert in equipment operations and polyurea application techniques. Certification of equipment shall be provided at the pre-construction conference.

The mobile applicator shall include the following features:

- (a) Material Reservoirs. The applicator shall provide individual material reservoirs, or space for the storage of Part A and Part B of the resin composition.
- (b) Heating Equipment. The applicator shall be equipped with heating equipment of sufficient capacity to maintain the individual resin components at the manufacturer's recommended temperature of  $\pm 2.8$  °C ( $\pm 5$  °F) for spray application.
- (c) Dispensing Equipment. The applicator shall be equipped with glass bead and/or reflective element dispensing equipment. The applicator shall be capable of applying the glass beads and/or reflective elements at a rate and combination indicated by the manufacturer.
- (d) Volumetric Usage. The applicator shall be equipped with metering devices or pressure gauges on the proportioning pumps as well as stroke counters to monitor volumetric usage. Metering devices or pressure gauges and stroke counters shall be visible to the Engineer.
- (e) Pavement Marking Placement. The applicator shall be equipped with all the necessary spray equipment, mixers, compressors and other appurtenances to allow for the placement of reflectorized pavement markings in a simultaneous sequence of operations.

The Contractor shall provide an accurate temperature-measuring device(s) that shall be capable of measuring the pavement temperature prior to application of the material, the material temperature at the gun tip and the material temperature prior to mixing.

## CONSTRUCTION REQUIREMENTS

General. The pavement shall be cleaned by a method approved by the Engineer to remove all dirt, grease, glaze or any other material that would reduce the adhesion of the markings with minimum or no damage to the pavement surface. New PCC pavements shall be air-blast-cleaned to remove all latents.

Widths, lengths, and shapes of the cleaned surface shall be of sufficient size to include the full area of the specified pavement marking to be placed.

The cleaning operation shall be a continuous moving operation process with minimum interruption to traffic.

Markings shall be applied to the cleaned surfaces on the same calendar day. If this cannot be accomplished, the surface shall be re-cleaned prior to applying the markings. No markings shall be applied until the Engineer approves the cleaning.

The pavement markings shall be applied to the cleaned road surface, during conditions of dry weather and subsequently dry pavement surfaces at a minimum uniform wet thickness of 0.4 mm (15 mils) according to the manufacturer's installation instructions. On new bituminous course surfaces the pavement markings shall be applied at a minimum uniform wet thickness of 0.5 mm (20 mils). The application of and combination of reflective media (glass beads and/or reflective elements) shall be applied at a rate specified by the manufacturer. At the time of installation the pavement surface temperature and the ambient temperature shall be above 4 °C (40 °F) and rising. The pavement markings shall not be applied if the pavement shows any visible signs of moisture or it is anticipated that damage causing moisture, such as rain showers, may occur during the installation and set periods. The Engineer will determine the atmospheric conditions and pavement surface conditions that produce satisfactory results.

Using the application equipment, the pavement markings shall be applied in the following manner, as a simultaneous operation:

- (a) The surface shall be air-blasted to remove any dirt and residue.
- (b) The resin shall be mixed and heated according to manufacturer's recommendations and sprayed onto the pavement surface.

The edge of the center line or lane line shall be offset a minimum distance of 50 mm (2 in.) from a longitudinal crack or joint. Edge lines shall be approximately 50 mm (2 in.) from the edge of pavement. The finished center and lane lines shall be straight, with the lateral deviation of any 3 m (10 ft) line not to exceed 25 mm (1 in.).

Notification. The Contractor shall notify the Engineer 72 hours prior to the placement of the markings in order that he/she can be present during the operation. At the time of notification, the Contractor shall provide the Engineer the manufacturer and lot numbers of polyurea and reflective media that will be used.

Inspection. The polyurea pavement markings will be inspected following installation according to Article 780.10 of the Standard Specifications, except, no later than December 15, and inspected following a winter performance period that extends 180 days from December 15.

Method of Measurement. This work will be measured for payment in place, in meters (feet). Double yellow lines will be measured as two separate lines.

Basis of Payment. This work will be paid for at the contract unit price per meter (foot) for POLYUREA PAVEMENT MARKING TYPE I – LINE of the line width specified or for POLYUREA PAVEMENT MARKING TYPE II – LINE of the line width specified.

#### **PORTABLE CHANGEABLE MESSAGE SIGNS (BDE)**

Effective: November 1, 1993

Revised: April 2, 2004

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

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

The message panel shall be of either a bulb matrix or disc matrix design controlled by an onboard computer capable of storing a minimum of 99 programmed messages for instant recall. The computer shall be capable of being programmed to accept messages created by the operator via an alpha-numeric keyboard and able to flash any six messages in sequence. The message panel shall also be capable of being controlled by a computer from a remote location via a cellular linkage. The Contractor shall supply the modem, the cellular phone, and the necessary software to run the sign from a remote computer at a location designated by the Engineer. The Contractor shall promptly program and/or reprogram the computer to provide the messages as directed by the Engineer.

The message panel shall be visible from 400 m (1/4 mile) under both day and night conditions. The letters shall be legible from 250 m (750 ft).

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

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

When the sign(s) are displaying messages, they shall be considered a traffic control device. At all times when no message is displayed, they shall be considered equipment.

Basis of Payment. When portable changeable message signs are shown on the Standard, this work will not be paid for separately but shall be considered as included in the cost of the Standard.

For all other portable changeable message signs, this work will be paid for at the contract unit price per calendar month for each sign as CHANGEABLE MESSAGE SIGN.

### **PORTLAND CEMENT (BDE)**

Effective: January 1, 2005

Replace the first sentence of the second paragraph of Article 1001.01 of the Standard Specifications with the following:

“For portland cement according to ASTM C 150, the addition of up to 5.0 percent limestone by mass (weight) to the cement will not be permitted. Also, the total of all organic processing additions shall not exceed 1.0 percent by mass (weight) of the cement and the total of all inorganic processing additions shall not exceed 4.0 percent by mass (weight) of the cement.”

### **PORTLAND CEMENT CONCRETE (BDE)**

Effective: November 1, 2002

Add the following paragraph after the fourth paragraph of Article 1103.01(b) of the Standard Specifications:

“The truck mixer shall be approved before use according to the Bureau of Materials and Physical Research’s Policy Memorandum, “Approval of Concrete Plants and Delivery Trucks”.”

Add the following paragraph after the first paragraph of Article 1103.01(c) of the Standard Specifications:

“The truck agitator shall be approved before use according to the Bureau of Materials and Physical Research’s Policy Memorandum, “Approval of Concrete Plants and Delivery Trucks”.”

Add the following paragraph after the first paragraph of Article 1103.01(d) of the Standard Specifications:

“The nonagitator truck shall be approved before use according to the Bureau of Materials and Physical Research’s Policy Memorandum, “Approval of Concrete Plants and Delivery Trucks”.”

Revise the first sentence of the first paragraph of Article 1103.02 of the Standard Specifications to read:

“The plant shall be approved before production begins according to the Bureau of Materials and Physical Research’s Policy Memorandum, “Approval of Concrete Plants and Delivery Trucks”.”

**PORTLAND CEMENT CONCRETE PATCHING (BDE)**

Effective: January 1, 2001

Revised: January 1, 2004

Revise Note 1 of Article 442.02 of the Standard Specifications, to read:

"Note 1. When patching ramp pavements and two lane pavements with two way traffic, Class PP-2, PP-3, or PP-4 concrete shall be used for Class A, Class B and Class C patching. For all other pavements, Class PP-1, PP-2, PP-3, or PP-4 concrete shall be used, at the Contractor’s option, for Class A, Class B and Class C patching."

Delete Note 2 of Article 442.02 of the Standard Specifications.

Add the following to Article 442.02 of the Standard Specifications:

“(l) Calcium Chloride (Note 5)..... 1013.01

Note 5. The calcium chloride accelerator, when permitted by the Department, shall be Type L (Liquid) with a minimum of 32.0 percent by mass (weight) of calcium chloride.”

Revise the first paragraph of Article 442.06(e) of the Standard Specifications to read:

"(e) Concrete Placement. For Class A, Class B and Class C Patches, concrete shall be placed according to Article 420.07 and governed by the limitations set forth in Article 1020.14, except that the maximum temperature of the mixed concrete immediately

before placing shall be 35 °C (96 °F), the required use of an approved retarding admixture when the plastic concrete reaches 30 °C (85 °F) shall not apply."

Revise the first paragraph of Article 442.06(h) of the Standard Specifications to read:

"(h) Curing and Protection. In addition to Article 1020.13, when the air temperature is less than 13 °C (55 °F), the Contractor shall cover the patch with minimum R12 insulation until opening strength is reached. Insulation is optional when the air temperature is 13 °C - 35 °C (55 °F - 96 °F). Insulation shall not be placed when the air temperature is greater than 35 °C (96 °F)."

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

"No open holes, broken pavement, or partially filled holes shall remain overnight for bituminous patching or when the Department specifies only Class PP-2, PP-3, or PP-4 concrete be used. The only exception is conditions beyond the control of the Contractor."

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

"b. Strength Tests. For patches constructed with Class PP-1, PP-2, PP-3, or PP-4 concrete, the pavement may be opened to traffic when test specimens cured with the patches have obtained a minimum flexural strength of 4150 kPa (600 psi) or a minimum compressive strength of 22,100 kPa (3200 psi) according to Article 1020.09.

For patches constructed with Class PP-2, PP-3, or PP-4 concrete which can obtain a minimum flexural strength of 4150 kPa (600 psi) or a minimum of compressive strength of 22,100 kPa (3200 psi) in 16 hours, the pavement may be opened to traffic at a lower opening strength. The specimens cured with the patches shall have obtained a minimum flexural strength of 2050 kPa (300 psi) or a minimum compressive strength of 11,000 kPa (1600 psi) according to Article 1020.09, to permit opening pavement to traffic.

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

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

"c. Construction Operations. For Class PP-2, PP-3, or PP-4 concrete used on ramp pavements and two lane pavements with two way traffic, or when the Department specifies only Class PP-2, PP-3, or PP-4 concrete be used for other pavements, Contractor construction operations shall be performed in a manner which allows the patches to be opened the same day and before nightfall. If patches are not opened before nightfall, the additional traffic control shall be at the Contractor's expense. Any time patches cannot be opened before nightfall, the Contractor

shall change subsequent construction operations or the mix design. The changes shall be at no additional cost to the Department."

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

"TABLE 1. CLASSES OF PORTLAND CEMENT CONCRETE AND MIX DESIGN CRITERIA				
Class of Concrete	Use	Specification Section Reference	Cement Factor kg/cu m (cwt/cu yd)	Max. Water/Cement Ratio kg/kg (lb/lb)
PP-1	PCC Pavement Patching Bridge Deck Patching	442	Type I Cement 385 to 445 (6.50 to 7.50) Type III Cement 365 to 425 (6.20 to 7.20)	0.44
PP-2	PCC Pavement Patching Bridge Deck Patching	442	Type I Cement 435 (7.35)	0.38
PP-3	PCC Pavement Patching Bridge Deck Patching	442	Type III Cement 435 (7.35)	0.35
PP-4	PCC Pavement Patching Bridge Deck Patching	442	Rapid Hardening Cement 355 to 370 (6.00 to 6.25)	0.50

For PP-1, the Contractor has the option to replace the Type I Cement with Class C fly ash or ground granulated blast-furnace slag. The amount of cement replaced shall not exceed 15 percent by mass (weight), at a minimum replacement ratio of 1.5:1.

For PP-2, the Contractor has the option to replace the Type I cement with ground granulated blast-furnace slag. The amount of cement replaced shall not exceed 30 percent by mass (weight), at a minimum replacement ratio of 1:1.

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

For PP-4, the cement shall be from the Department's "Approved List of Packaged, Dry, Rapid Hardening Cementitious Materials for Concrete Repairs".

TABLE 1. (CONT'D) CLASSES OF PORTLAND CEMENT CONCRETE AND MIX DESIGN CRITERIA					
Class of Concrete	Slump, mm (in.)	Mix Design Compressive Strength, kPa (psi)	Mix Design Flexural Strength, kPa (psi)	Air Content, %	Coarse Aggregate Gradations Permitted
		Hours	Hours		
		48	48		
PP – 1	100 (4) Max	22,100 (3200)	4150 (600)	4.0 – 7.0	CA-7, CA-11, CA-13, CA14, or CA-16
PP – 2	150 (6) Max	22,100 (3200)	4150 (600)	4.0 – 6.0	CA-7, CA-11, CA-13, CA14, or CA-16
PP – 3	100 (4) Max	22,100 (3200)	4150 (600)	4.0 – 6.0	CA-7, CA-11, CA-13, CA14, or CA-16
PP – 4	150 (6) Max	22,100 (3200)	4150 (600)	4.0 – 6.0	CA-7, CA-11, CA-13, CA14, or CA-16

For PP-1, PP-2, PP-3 or PP-4; only CA-13, CA-14, or CA-16 may be used for bridge deck patching. In addition, the mix design strength at 48 hours shall be increased to 27,500 kPa (4,000 psi) compressive or 4,650 kPa (675 psi) flexural for bridge deck patching.

For PP-1, the slump may be increased to 150 mm (6 in.) Max if a high range water-reducing admixture is used.”

Delete Article 1020.05(g) of the Standard Specifications.

**PRECAST CONCRETE PRODUCTS (BDE)**

Effective: July 1, 1999

Revised: November 1, 2004

Product Approval. Precast concrete products shall be produced according to the Department’s current Policy Memorandum, “Quality Control/Quality Assurance Program for Precast Concrete Products”. The Policy Memorandum applies to precast concrete products listed under the Products Key of the "Approved List of Certified Precast Concrete Producers".

Precast Concrete Box Culverts. Add the following sentence to the end of the fourth paragraph of Article 540.06:

“After installation, the interior and exterior joint gap between precast concrete box culvert sections shall not exceed 38 mm (1 1/2 in.).”

Portland Cement Replacement. For precast concrete products using Class PC concrete or other mixtures, portland cement replacement with fly ash or ground granulated blast-furnace (GGBF) slag shall be governed by the AASHTO or ASTM standard specification referenced in the Standard Specifications.



For all other precast concrete products using Class PC concrete or other mixtures, portland cement replacement with fly ash or GGBF slag shall be approved by the Engineer. Class F fly ash shall not exceed 15 percent by mass (weight) of the total portland cement and Class F fly ash. Class C fly ash shall not exceed 20 percent by mass (weight) of the total portland cement and Class C fly ash. GGBF slag shall not exceed 25 percent by mass (weight) of the total portland cement and GGBF slag.

Concrete mix designs, for precast concrete products, shall not consist of portland cement, fly ash and GGBF slag.

Ready-Mixed Concrete. Delete the last paragraph of Article 1020.11(a) of the Standard Specifications.

Shipping. When a precast concrete product has attained the specified strength, the earliest the product may be loaded, shipped, and used is on the fifth calendar day. The first calendar day shall be the date casting was completed.

Acceptance. Products which have been lot or piece inspected and approved by the Department prior to July 1, 1999, will be accepted for use on this contract.

**PRECAST, PRESTRESSED CONCRETE MEMBERS (BDE)**

Effective: April 1, 2004

Revise the tables, "Maximum Allowable Dimensional Tolerances for Precast, Prestressed I-beams and Bulb T-beams" in Article 504.06(d) of the Standard Specifications to read:

"Maximum Allowable Dimensional Tolerances for Precast, Prestressed Concrete I-Beams and Bulb T-Beams	
mm	
Depth (flanges, web and fillets) .....	± 5
Depth (overall) .....	+ 5 to - 3
Width (flanges and fillets) .....	± 5
Width (web) .....	+ 5 to - 3
Length .....	± 3 per 3 m, max. + 15 to - 20
Square Ends (deviation from square) .....	± 5
Skew Ends (deviation from tangent offset) .....	± 5
Side Insert (spacing between centers of inserts and from the centers of inserts to the ends of the beams) .....	± 15
Bearing Plates (spacing between the centers of bearing plates) .....	± 15
Bearing Plate (spacing between the centers of bearing plates to the ends of the beams) .....	± 5
Bearing Plate or Bearing Area (variation from a true horizontal plane or from a plane surface when tested with a straightedge) .....	± 2
Stirrup Bars (extension above top of the beam) .....	0 to - 10
Stirrup Bars longitudinal spacing	
Within a distance equal to the depth of the member and measured from the end of the member .....	+ 25
In all other locations .....	+ 50

The number of stirrups shall not be less than the required number in each length. Additional stirrups may be added when the maximum allowable tolerance is exceeded provided the minimum clearance between stirrups is not less than 50 mm.

End Stirrup Bars - not more than 50 mm from the end of the beam  
 Horizontal Alignment (deviation from a straight line parallel to the centerline of the beam) ..... ± 3 per 3 m, max. ± 30

Maximum Allowable Dimensional Tolerances For  
 Precast, Prestressed Concrete I-Beams  
 and Bulb T-Beams  
 (English)

in.

Depth (flanges, web and fillets) .....	± 1/4
Depth (overall) .....	+ 1/4 to - 1/8
Width (flanges and fillets) .....	± 1/4
Width (web) .....	+ 1/4 to - 1/8
Length .....	± 1/8 per 10', max. + 1/2 to - 3/4
Square Ends (deviation from square) .....	± 1/4
Skew Ends (deviation from tangent offset) .....	± 1/4
Side Insert (spacing between centers of inserts and from the centers of inserts to the ends of the beams) .....	± 1/2
Bearing Plates (spacing between the centers of bearing plates) .....	± 1/2
Bearing Plate (spacing between the centers of bearing plates to the ends of the beams) .....	± 1/4
Bearing Plate or Bearing Area (variation from a true horizontal plane or from a plane surface when tested with a straightedge) .....	± 1/16
Stirrup Bars (extension above top of the beam) .....	0 to - 3/8
Stirrup Bars longitudinal spacing	
Within a distance equal to the depth of the member and measured from the end of the member .....	+ 1
In all other locations .....	+ 2

The number of stirrups shall not be less than the required number in each length. Additional stirrups may be added when the maximum allowable tolerance is exceeded provided the minimum clearance between stirrups is not less than 2 in.

End Stirrup Bars - not more than 2" from the end of the beam  
 Horizontal Alignment (deviation from a straight line parallel to the centerline of the beam) ..... ± 1/8 per 10 ft, max. ± 1 1/4"

**PUBLIC CONVENIENCE AND SAFETY (BDE)**

Effective: January 1, 2000

Add the following paragraph after the fourth paragraph of Article 107.09 of the Standard Specifications.

“On weekends, excluding holidays, roadways with Average Daily Traffic of 25,000 or greater, all lanes shall be open to traffic from 3:00 P.M. Friday to midnight Sunday except where structure construction or major rehabilitation makes it impractical.”

### **RAISED REFLECTIVE PAVEMENT MARKERS (BRIDGE) (BDE)**

Effective: August 1, 2003

Add the following sentence to the end of the second paragraph of Article 781.03(a) of the Standard Specifications:

“The installed height for the reflective pavement markers shall be approximately 7.5 mm (0.3 in.) above the road surface.”

Revise Article 781.05 of the Standard Specifications to read:

**“781.05 Basis of Payment.** This work will be paid for at the contract unit price per each for RAISED REFLECTIVE PAVEMENT MARKER, RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE), TEMPORARY RAISED REFLECTIVE PAVEMENT MARKER, and REPLACEMENT REFLECTOR.”

Revise the first paragraph of Article 1096.01(b) of the Standard Specifications to read:

“(b) The overall dimensions for raised reflective pavement markers shall be approximately 254 mm (10 in.) long by 140 mm (5.5 in.) wide and a maximum of 45 mm (1.76 in.) high. The overall dimensions for bridge raised reflective pavement markers shall be approximately 235 mm (9.25 in.) long by 149 mm (5.86 in.) wide and a maximum of 32 mm (1.25 in.) high. The surface of the keel and web shall be free of scale, dirt, rust, oil, grease, or any other contaminant which may reduce the bond.”

### **RAP FOR USE IN BITUMINOUS CONCRETE MIXTURES (BDE)**

Effective: January 1, 2000

Revised: April 1, 2002

Revise Article 1004.07 to read:

**“1004.07 RAP Materials.** RAP is reclaimed asphalt pavement resulting from cold milling or crushing of an existing dense graded hot-mix asphalt pavement. RAP must originate from routes or airfields under federal, state or local agency jurisdiction. The Contractor shall supply documentation that the RAP meets these requirements.

(a) Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. No additional RAP will be allowed on top of the pile after the pile has been sealed.

(1) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I/ Superpave, or equivalent mixtures only and represent the same aggregate quality, but shall be at least C quality or better, the same type of crushed aggregate (either crushed natural aggregate, ACBF slag, or steel slag), similar gradation and similar

AC content. If approved by the Engineer, combined single pass surface/binder millings may be considered "homogenous", with a quality rating dictated by the lowest coarse aggregate quality present in the mixture. Homogenous stockpiles shall meet the requirements of Article 1004.07(d). Homogeneous RAP stockpiles not meeting these requirements may be processed (crushing and screening) and retested.

(2) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I/ Superpave, or equivalent mixtures only. The coarse aggregate in this RAP shall be crushed aggregate only and may represent more than one aggregate type and/or quality but shall be at least C quality or better. This RAP may have an inconsistent gradation and/or asphalt cement content prior to processing. All conglomerate RAP shall be processed prior to testing by crushing to where all RAP shall pass the 16 mm (5/8 in.) or smaller screen. Conglomerate RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department. Conglomerate RAP stockpiles shall meet the requirements of Article 1004.07(d).

(3) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP containing coarse aggregate (crushed or round) that is at least D quality or better. This RAP may have an inconsistent gradation and/or asphalt content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department. Conglomerate DQ RAP shall meet the requirements of Article 1004.07(d).

Reclaimed Superpave Low ESAL IL-9.5L surface mixtures shall only be placed in conglomerate DQ RAP stockpiles due to the potential for rounded aggregate.

(4) Other. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Other". "Other" RAP stockpiles shall not be used in any of the Department's bituminous mixtures.

(b) Use. The allowable use of a RAP stockpile shall be set by the lowest quality of coarse aggregate in the RAP stockpile. Class I/Superpave surface mixtures are designated as containing Class B quality coarse aggregate only. Superpave Low ESAL IL-19.0L binder and IL-9.5L surface mixtures are designated as Class C quality coarse aggregate only. Class I/Superpave binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate only. Bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate only. Any mixture not listed above shall have the designated quality determined by the Department.

RAP containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in Class I/Superpave (including Low ESAL) surface mixtures only. RAP stockpiles for use in Class I/Superpave mixtures (including Low ESAL), base course, base course widening and Class B mixtures shall be either homogeneous or conglomerate RAP stockpiles except conglomerate RAP stockpiles shall not be used in Superpave surface mixture Ndesign 50 or greater. RAP for use in bituminous aggregate mixtures (BAM) shoulders and BAM stabilized subbase shall be from homogeneous, conglomerate, or conglomerate DQ stockpiles.

Additionally, RAP used in Class I/Superpave surface mixtures shall originate from milled or crushed mixtures only, in which the coarse aggregate is of Class B quality or better. RAP stockpiles for use in Class I/Superpave (including Low ESAL) binder mixes as well as base course, base course widening and Class B mixtures shall originate from milled or processed surface mixture, binder mixture, or a combination of both mixtures uniformly blended to the satisfaction of the Engineer, in which the coarse aggregate is of Class C quality or better.

- (c) Contaminants. RAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.
- (d) Testing. All RAP shall be sampled and tested either during or after stockpiling.

For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 450 metric tons (500 tons) for the first 1800 metric tons (2,000 tons) and one sample per 1800 metric tons (2,000 tons) thereafter. A minimum of five tests shall be required for stockpiles less than 3600 metric tons (4,000 tons).

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

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

All of the extraction results shall be compiled and averaged for asphalt content and gradation. Individual extraction test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	Homogeneous / Conglomerate	Conglomerate "D" Quality
25 mm (1 in.)		± 5%
12.5 mm (1/2 in.)	± 8%	± 15%
4.75 mm (No. 4)	± 6%	± 13%
2.36 mm (No. 8)	± 5%	
1.18 mm (No. 16)		± 15%
600 μm (No. 30)	± 5%	
75 μm (No. 200)	± 2.0%	± 4.0%
AC	± 0.4%	± 0.5%

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

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

- (e) Designs. At the Contractor's option, bituminous concrete mixtures may be constructed utilizing RAP material meeting the above detailed requirements. The amount of RAP included in the mixture shall not exceed the percentages specified in the plans.

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

- (f) Production. The coarse aggregate in all RAP used shall be equal to or less than the nominal maximum size requirement for the bituminous mixture being produced.

To remove or reduce agglomerated material, a scalping screen, crushing unit or comparable sizing device approved by the Engineer shall be used in the RAP feed system to remove or reduce oversized material. If material passing the sizing device adversely affects the mix production or quality of the mix, the sizing device shall be set at a size specified by the Engineer.

If the RAP control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAP and either switch to the virgin aggregate design or submit a new RAP design.

## **REMOVE AND RE-ERECT STEEL PLATE BEAM GUARDRAIL AND TRAFFIC BARRIER TERMINALS (BDE)**

Effective: January 1, 2001

Revised: January 1, 2005

Description. This work shall consist of replacing existing steel block-outs with wood or plastic block-outs during the removal and re-erection of steel plate beam guardrail and traffic barrier terminals.

Wood block-outs shall be according to the current standard applicable to the type of guardrail or terminal section being re-erected. Plastic blockouts shall be on the Department's approved list.

The existing steel posts may be drilled to match the bolt pattern shown on standard 630001 for the block-out or a new steel post shall be provided.

| All existing "C" posts shall be removed and new posts shall be provided.

| **Basis of Payment.** This work will not be paid for separately but shall be included in the contract unit price per meter (foot) for REMOVE AND RE-ERECT STEEL PLATE BEAM GUARDRAIL, of the type specified, and at the contract unit price each for REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINALS, of the type specified.

**SEEDING AND SODDING (BDE)**

| Effective: July 1, 2004

Revised: November 1, 2004

Revise Class 1A and 2A seeding mixtures shown in Table 1 of Article 250.07 of the Standard Specifications to read:

"Table 1 - SEEDING MIXTURES		
Class – Type	Seeds	kg/hectare (lb/acre)
1A    Salt Tolerant Lawn Mixture 7/	Bluegrass	70 (60)
	Perennial Ryegrass	20 (20)
	Audubon Red Fescue	20 (20)
	Rescue 911 Hard Fescue	20 (20)
	Fults Salt Grass*	70 (60)
2A    Salt Tolerant Roadside Mixture 7/	Alta Fescue or Ky 31	70 (60)
	Perennial Ryegrass	20 (20)
	Audubon Red Fescue	20 (30)
	Rescue 911 Hard Fescue	20 (30)
	Fults Salt Grass 1/	70 (60)"

Revise Note 7 of Article 250.07 of the Standard Specifications to read:

“Note 7. In Districts 1 through 6, the planting times shall be April 1 to June 15 and August 1 to November 1. In Districts 7 through 9, the planting times shall be March 1 to June 1 and August 1 to November 15. Seeding may be performed outside these dates provided the Contractor guarantees a minimum of 75 percent coverage over the entire seeded area(s) after one growing season. The guarantee shall be submitted to the Engineer in writing prior to performing the work. After one growing season, areas not sustaining 75 percent growth shall be interseeded or reseeded, as determined by the Engineer, at the Contractor’s expense.”

Add the following sentence to Article 252.04 of the Standard Specifications:

“Sod shall not be placed during the months of July and August.”

Revise the first paragraph of Article 252.08 of the Standard Specifications to read:

**“252.08 Sod Watering.** Within two hours after the sod has been placed, water shall be applied at a rate of 25 L/sq m (5 gal/sq yd). Additional water shall be applied every other day at a rate of 15 L/sq m (3 gal/sq yd) for a total of 15 additional waterings. During periods exceeding

26 °C (80 °F) or subnormal rainfall, the schedule of additional waterings may be altered with the approval of the Engineer.”

Revise Article 252.09 of the Standard Specifications to read:

“**252.09 Supplemental Watering.** During periods exceeding 26 °C (80 °F) or subnormal rainfall, supplemental watering may be required after the initial and additional waterings. Supplemental watering shall be performed when directed by the Engineer. Water shall be applied at the rate specified by the Engineer within 24 hours of notice.”

Revise the first and third paragraphs of Article 252.12 of the Standard Specifications to read:

“**252.12 Method of Measurement.** Sodding will be measured for payment in place and the area computed in square meters (square yards). To be acceptable for final payment, the sod shall be growing in place for a minimum of 30 days in a live, healthy condition. When directed by the Engineer, any defective or unacceptable sod shall be removed, replaced and watered by the Contractor at his/her own expense.”

“Supplemental watering will be measured for payment in units of 1000 L (1000 gal) of water applied on the sodded areas. Waterings performed in addition to those required by Article 252.08 or after the 30 day establishment period will be considered as supplemental watering.”

Replace the first paragraph of Article 252.13 of the Standard Specifications with the following:

“**252.13 Basis of Payment.** Sodding will be paid for at the contract unit price per square meter (square yard) for SODDING or SODDING, SALT TOLERANT according to the following schedule.

- (a) Initial Payment. Upon placement of sod, 25 percent of the pay item will be paid.
- (b) Final Payment. Upon acceptance of sod, the remaining 75 percent of the pay item will be paid.”

Revise Article 1081.03(b) of the Standard Specifications to read:

“(b) Salt Tolerant Sod.

Variety	Percent by Weight
Buffalo Grass	30%
Buchloe Dactyloides	
Amigo Fineleaf Tall Fescue	20%
Audubon Red Fescue	15%
Rescue 911 Hard Fescue	15%
Rugby Kentucky Bluegrass	5%
Fults Pucinnellia Distans	15%”



Revise Table II of Article 1081.04(c)(6) of the Standard Specifications to read:

TABLE II						
Variety of Seeds	Hard Seed Percent Maximum	Purity Percent Minimum	Pure, Live Seed Percent Minimum	Weed Percent Maximum	Secondary Noxious Weeds No. per kg (oz) Max. Permitted*	Remarks
Alfalfa	20	92	89	0.50	211 (6)	1/
Brome Grass	-	90	75	0.50	175 (5)	-
Clover, Alsike	15	92	87	0.30	211 (6)	2/
Clover, Crimson	15	92	83	0.50	211 (6)	-
Clover, Ladino	15	92	87	0.30	211 (6)	-
Clover, Red	20	92	87	0.30	211 (6)	-
Clover, White Dutch	30	92	87	0.30	211 (6)	3/
Audubon Red Fescue	0	97	82	0.10	105 (3)	-
Fescue, Alta or Ky. 31	-	97	82	1.00	105 (3)	-
Fescue, Creeping Red	-	97	82	1.00	105 (3)	-
Fults Salt Grass	0	98	85	0.10	70 (2)	-
Kentucky Bluegrass	-	97	80	0.30	247 (7)	5/
Lespedeza, Korean	20	92	84	0.50	211 (6)	3/
Oats	-	92	88	0.50	70 (2)	4/
Orchard Grass	-	90	78	1.50	175 (5)	4/
Redtop	-	90	78	1.80	175 (5)	4/
Ryegrass, Perennial, Annual	-	97	85	0.30	175 (5)	4/
Rye, Grain, Winter	-	92	83	0.50	70 (2)	4/
Rescue 911 Hard Fescue	0	97	82	0.10	105 (3)	-
Timothy	-	92	84	0.50	175 (5)	4/
Vetch, Crown	30	92	67	1.00	211 (6)	3/ & 6/
Vetch, Spring	30	92	88	1.00	70 (2)	4/
Vetch, Winter	15	92	83	1.00	105 (3)	4/
Wheat, hard Red Winter	-	92	89	0.50	70 (2)	4/

**SUBGRADE PREPARATION (BDE)**

Effective: November 1, 2002

Revise the tenth paragraph of Article 301.03 of the Standard Specifications to read:

“Equipment of such weight, or used in such a way as to cause a rut in the finished subgrade of 13 mm (1/2 in.) or more in depth, shall be removed from the work or the rutting otherwise prevented.”

**SUPERPAVE BITUMINOUS CONCRETE MIXTURES (BDE)**

Effective: January 1, 2000

Revised: April 1, 2004

Description. This work shall consist of designing, producing and constructing Superpave bituminous concrete mixtures using Illinois Modified Strategic Highway Research Program (SHRP) Superpave criteria. This work shall be according to Sections 406 and 407 of the Standard Specifications and the special provision, "Quality Control/Quality Assurance of Bituminous Concrete Mixtures", except as follows.

Materials.

- (a) Fine Aggregate Blend Requirement. The Contractor may be required to provide FA 20 manufactured sand to meet the design requirements. For mixtures with  $N_{design} \geq 90$ , at least 50 percent of the required fine aggregate fraction shall consist of either stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation.
- (b) Reclaimed Asphalt Pavement (RAP). If the Contractor is allowed to use more than 15 percent RAP, as specified in the plans, a softer performance-graded binder may be required as determined by the Engineer.

RAP shall meet the requirements of the special provision, "RAP for Use in Bituminous Concrete Mixtures".

RAP will not be permitted in mixtures containing polymer modifiers.

RAP containing steel slag will be permitted for use in top-lift surface mixtures only.

- (c) Bituminous Material. The asphalt cement (AC) shall be performance-graded (PG) or polymer modified performance-graded (SBS-PG or SBR-PG) meeting the requirements of Article 1009.05 of the Standard Specifications for the grade specified on the plans.

The following additional guidelines shall be used if a polymer modified asphalt is specified:

- (1) The polymer modified asphalt cement shall be shipped, maintained, and stored at the mix plant according to the manufacturer's requirements. Polymer modified asphalt cement shall be placed in an empty tank and shall not be blended with other asphalt cements.
- (2) The mixture shall be designed using a mixing temperature of  $163 \pm 3$  °C ( $325 \pm 5$  °F) and a gyratory compaction temperature of  $152 \pm 3$  °C ( $305 \pm 5$  °F).
- (3) Pneumatic-tired rollers will not be allowed unless otherwise specified by the Engineer. A vibratory roller meeting the requirements of Article 406.16 of the Standard Specifications shall be required in the absence of the pneumatic-tired roller.

#### Laboratory Equipment.

- (a) Superpave Gyratory Compactor. The superpave gyratory compactor (SGC) shall be used for all QC/QA testing.
- (b) Ignition Oven. The ignition oven shall be used to determine the AC content. The ignition oven shall also be used to recover aggregates for all required washed gradations.

The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors which exceed 1.5 percent. If the ignition oven requirement is waived, other Department approved methods shall be used to determine the AC content.

Mixture Design. The Contractor shall submit mix designs, for approval, for each required mixture. Mix designs shall be developed by Level III personnel who have successfully completed the course, "Superpave Mix Design Upgrade". Articles 406.10 and 406.13 of the Standard Specifications shall not apply. The mixtures shall be designed according to the respective Illinois Modified AASHTO references listed below.

AASHTO MP 2	Standard Specification for Superpave Volumetric Mix Design
AASHTO R 30	Standard Practice for Mixture Conditioning of Hot-Mix Asphalt (HMA)
AASHTO PP 28	Standard Practice for Designing Superpave HMA
AASHTO T 209	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
AASHTO T 312	Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor
AASHTO T 308	Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method

- (a) Mixture Composition. The ingredients of the bituminous mixture shall be combined in such proportions as to produce a mixture conforming to the composition limits by weight. The gradation mixture specified on the plans shall produce a mixture falling within the limits specified in Table 1.

<b>TABLE 1. MIXTURE COMPOSITION (% PASSING)<sup>1/</sup></b>								
<b>Sieve Size</b>	<b>IL-25.0 mm</b>		<b>IL-19.0 mm</b>		<b>IL-12.5 mm<sup>4/</sup></b>		<b>IL-9.5 mm<sup>4/</sup></b>	
	<b>min</b>	<b>max</b>	<b>min</b>	<b>max</b>	<b>Min</b>	<b>max</b>	<b>min</b>	<b>max</b>
<b>37.5 mm (1 1/2 in.)</b>		100						
<b>25 mm (1 in.)</b>	90	100		100				
<b>19 mm (3/4 in.)</b>		90	82	100		100		
<b>12.5 mm (1/2 in.)</b>	45	75	50	85	90	100		100
<b>9.5 mm (3/8 in.)</b>						89	90	100
<b>4.75 mm (#4)</b>	24	42 <sup>2/</sup>	24	50 <sup>2/</sup>	28	65	28	65
<b>2.36 mm (#8)</b>	16	31	20	36	28	48 <sup>3/</sup>	28	48 <sup>3/</sup>
<b>1.18 mm (#16)</b>	10	22	10	25	10	32	10	32
<b>600 μm (#30)</b>								
<b>300 μm (#50)</b>	4	12	4	12	4	15	4	15
<b>150 μm (#100)</b>	3	9	3	9	3	10	3	10
<b>75 μm (#200)</b>	3	6	3	6	4	6	4	6

- 1/ Based on percent of total aggregate weight.
- 2/ The mixture composition shall not exceed 40 percent passing the 4.75 mm (#4) sieve for binder courses with Ndesign ≥ 90.
- 3/ The mixture composition shall not exceed 40 percent passing the 2.36 mm (#8) sieve for surface courses with Ndesign ≥ 90.
- 4/ The mixture composition for surface courses shall be according to IL-12.5 mm or IL-9.5 mm, unless otherwise specified by the Engineer.

One of the above gradations shall be used for leveling binder as specified in the plans and according to Article 406.04 of the Standard Specifications.

It is recommended that the selected combined aggregate gradation not pass through the restricted zones specified in Illinois Modified AASHTO MP 2.

- (b) Dust/AC Ratio for Superpave. The ratio of material passing the 75  $\mu\text{m}$  (#200) sieve to total asphalt cement shall not exceed 1.0 for mixture design (based on total weight of mixture).
- (c) Volumetric Requirements. The target value for the air voids of the hot mix asphalt (HMA) shall be 4.0 percent at the design number of gyrations. The VMA and VFA of the HMA design shall be based on the nominal maximum size of the aggregate in the mix and shall conform to the requirements listed in Table 2.

<b>TABLE 2. VOLUMETRIC REQUIREMENTS</b>					
<b>Ndesign</b>	<b>Voids in the Mineral Aggregate (VMA), % minimum</b>				<b>Voids Filled with Asphalt (VFA), %</b>
	<b>IL-25.0</b>	<b>IL-19.0</b>	<b>IL-12.5</b>	<b>IL-9.5</b>	
<b>50</b>	12.0	13.0	14.0	15	65 - 78
<b>70</b>					65 - 75
<b>90</b>					
<b>105</b>					

- (d) Determination of Need for Anti-Stripping Additive. The mixture designer shall determine if an additive is needed in the mix to prevent stripping. The determination will be made on the basis of tests performed according to Illinois Modified T 283 using 4 in. Marshall bricks. To be considered acceptable by the Department as a mixture not susceptible to stripping, the ratio of conditioned to unconditioned split tensile strengths (TSRs) shall be equal to or greater than 0.75. Mixtures, either with or without an additive, with TSRs less than 0.75 will be considered unacceptable.

If it is determined that an additive is required, the additive may be hydrated lime, slaked quicklime, or a liquid additive, at the Contractor's option. The liquid additive shall be selected from the Department's list of approved additives and may be limited to those which have exhibited satisfactory performance in similar mixes.

Dry hydrated lime shall be added at a rate of 1.0 to 1.5 percent by weight of total dry aggregate. Slurry shall be added in such quantity as to provide the required amount of hydrated lime solids by weight of total dry aggregate. The exact rate of application for all anti-stripping additives will be determined by the Department. The method of application shall be according to Article 406.12 of the Standard Specifications.

Personnel. The QC Manager and Level I Technician shall have successfully completed the Department's "Superpave Field Control Course".

Required Plant Tests. Testing shall be conducted to control the production of the bituminous mixture. The Contractor shall use the test methods identified to perform the following mixture tests at a frequency not less than that indicated in Table 3.

<b>TABLE 3. REQUIRED PLANT TESTS for SUPERPAVE</b>		
<b>Parameter</b>	<b>Frequency of Tests</b>	<b>Test Method</b>
Aggregate Gradation  Hot bins for batch and continuous plants  Individual cold-feeds or combined belt-feed for drier drum plants.  (% passing sieves: 12.5 mm (1/2 in.), 4.75 mm (No. 4), 2.36 mm (No. 8), 600 μm (No. 30), 75 μm (No. 200))	1 dry gradation per day of production (either morning or afternoon sample).  And  1 washed ignition oven test on the mix per day of production (conduct in afternoon if dry gradation is conducted in the morning or vice versa).  NOTE. The order in which the above tests are conducted shall alternate from the previous production day (example: a dry gradation conducted in the morning will be conducted in the afternoon on the next production day and so forth).  The dry gradation and washed ignition oven test results shall be plotted on the same control chart.	Illinois Procedure (See Manual of Test Procedures for Materials).
Asphalt Content by Ignition Oven (Note 1.)	1 per half day of production	Illinois Modified AASHTO T 308
Air Voids	Bulk Specific Gravity of Gyratory Sample	1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)
	Maximum Specific Gravity of Mixture	Illinois Modified AASHTO T 209

Note 1. The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors which exceed 1.5 percent. If the ignition oven requirement is waived, other Department approved methods shall be used to determine the AC content.

During production, the ratio of minus 75 μm (#200) sieve material to total asphalt cement shall be not less than 0.6 nor more than 1.2 and the moisture content of the mixture at discharge from the mixer shall not exceed 0.5 percent. If at any time the ratio of minus 75 μm (#200) material to asphalt or moisture content of the mixture falls outside the stated limits, production of the mix shall cease. The cause shall be determined and corrective action satisfactory to the Engineer shall be initiated prior to resuming production.

During production, mixtures containing an anti-stripping additive will be tested by the Department for stripping according to Illinois Modified T 283. If the mixture fails to meet the TSR criteria for acceptance, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria.

Construction Requirements

Lift Thickness.

- (a) Binder and Surface Courses. The minimum compacted lift thickness for constructing bituminous concrete binder and surface courses shall be according to Table 4:

<b>TABLE 4 – MINIMUM COMPACTED LIFT THICKNESS</b>	
Mixture	Thickness, mm (in.)
IL-9.5	32 (1 1/4)
IL-12.5	38 (1 1/2)
IL-19.0	57 (2 1/4)
IL-25.0	76 (3)

- (b) Leveling Binder. Mixtures used for leveling binder shall be as follows:

<b>TABLE 5 – LEVELING BINDER</b>	
Nominal, Compacted, Leveling Binder Thickness, mm (in.)	Mixture
≤ 32 (1 1/4)	IL-9.5
32 (1 1/4) to 50 (2)	IL 9.5 or IL-12.5

Density requirements shall apply for leveling binder when the nominal, compacted thickness is 32 mm (1 1/4 in.) or greater for IL-9.5 mixtures and 38 mm (1 1/2 in.) or greater for IL-12.5 mixtures.

- (c) Full-Depth Pavement. The compacted thickness of the initial lift of binder course shall be 100 mm (4 in.). The compacted thickness of succeeding lifts shall meet the minimums specified in Table 4 but not exceed 100 mm (4 in.).

If a vibratory roller is used for breakdown, the compacted thickness of the binder lifts, excluding the top lift, may be increased to 150 mm (6 in.) provided the required density is obtained.

- (d) Bituminous Patching. The minimum compacted lift thickness for constructing bituminous patches shall be according to Table 4.

Control Charts/Limits. Control charts/limits shall be according to QC/QA Class I requirements, except density shall be plotted on the control charts within the following control limits:

<b>TABLE 6. DENSITY CONTROL LIMITS</b>		
Mixture	Parameter	Individual Test
12.5 mm / 9.5 mm	Ndesign ≥ 90	92.0 – 96.0%
12.5 mm / 9.5 mm	Ndesign < 90	92.5 – 97.4%
19.0 mm / 25.0 mm	Ndesign ≥ 90	93.0 – 96.0%
19.0 mm / 25.0 mm	Ndesign < 90	93.0 – 97.4%

**Basis of Payment.** On resurfacing projects, this work will be paid for at the contract unit price per metric ton (ton) for BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, of the friction aggregate mixture and Ndesign specified, LEVELING BINDER (HAND METHOD), SUPERPAVE, of the Ndesign specified, LEVELING BINDER (MACHINE METHOD), SUPERPAVE, of the Ndesign specified, and BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition and Ndesign specified.

On resurfacing projects in which polymer modifiers are required, this work will be paid for at the contract unit price per metric ton (ton) for POLYMERIZED BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, of the friction aggregate mixture and Ndesign specified, POLYMERIZED LEVELING BINDER (HAND METHOD), SUPERPAVE, of the Ndesign specified, POLYMERIZED LEVELING BINDER (MACHINE METHOD), SUPERPAVE, of the Ndesign specified, and POLYMERIZED BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition and Ndesign specified.

On full-depth pavement projects, this work will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE PAVEMENT, (FULL-DEPTH), SUPERPAVE, of the thickness specified.

On projects where widening is constructed and the entire pavement is then resurfaced, the binder for the widening will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition, Ndesign, and thickness specified. The surface and binder used to resurface the entire pavement will be paid for according to the paragraphs above for resurfacing projects.

### **SUPERPAVE BITUMINOUS CONCRETE MIXTURES (LOW ESAL) (BDE)**

Effective: January 1, 2001

Revised: April 1, 2004

**Description.** This work shall consist of constructing Bituminous Concrete Surface Course Superpave IL-9.5L and/or Bituminous Concrete Binder Course Superpave IL-19.0L according to Section 406 of the Standard Specifications and the special provision "Quality Control/Quality Assurance of Bituminous Concrete Mixtures", except as modified herein.

#### **Materials.**

- (a) Coarse Aggregate. Coarse aggregate for the IL-19.0L shall meet the requirements of a Class I Type 3 binder course and the gradation specified below. For the IL-9.5L mixture, the coarse aggregate shall meet the requirements of a Class I Type 3 surface course except that gravel and Class C Quality, or better, aggregate may be used.
- (b) Reclaimed Asphalt Pavement (RAP). RAP shall meet the requirements of the special provision, "RAP for Use in Bituminous Concrete Mixtures".

RAP containing steel slag will be permitted for use in top-lift surface mixtures only.

- (c) Bituminous Material. The asphalt cement (AC), unless otherwise specified on the plans, shall be performance-graded (PG) 58-22. The AC shall meet the requirements of Article 1009.05 of the Standard Specifications for the grade specified.



If the Contractor is allowed to use more than 15 percent RAP, a softer PG binder may be required, as determined by the Engineer.

Laboratory Equipment.

- (a) Superpave Gyratory Compactor. The superpave gyratory compactor (SGC) shall be used for all laboratory mixture compaction.
- (b) Ignition Oven. The ignition oven shall be used for determination of AC content. The ignition oven shall also be used to recover aggregates for all required washed gradations.

The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors, which exceed 1.5 percent. If the calibration factor exceeds 1.5 percent other IDOT approved methods shall be utilized for determination of AC content.

Mixture Design. The Contractor shall submit mix designs for approval, for each required mixture. Mix designs shall be developed by Level III personnel who have successfully completed the course, "Superpave Mix Design Upgrade". Articles 406.10 and 406.13 of the Standard Specifications shall not apply. The mixtures shall be designed according to the respective Illinois Modified AASHTO references listed below.

AASHTO MP 2	Standard Specification for Superpave Volumetric Mix Design
AASHTO R 30	Standard Practice for Mixture Conditioning of Hot-Mix Asphalt (HMA)
AASHTO PP 28	Standard Practice for Designing Superpave HMA
AASHTO T 209	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
AASHTO T 312	Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor
AASHTO T 308	Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method

- (a) Mixture Composition. The job mix formula (JMF) shall fall within the following limits:

<b>TABLE 1. Mixture Composition</b>		
Sieve	Percent Passing	
	9.5L	19.0L
25.0 mm (1 in.)		100
19.0 mm (3/4 in.)		95-100
12.5 mm (1/2 in.)	100	
9.5 mm (3/8 in.)	95 – 100	
4.75 mm (#4)	52 – 80	38-65
2.36 mm (#8)	38 – 65	
600 µm (#30)	< 50% of the percentage passing the #4	< 50% of the percentage passing the #4
75 µm (#200)	4.0 – 8.0	3.0 – 7.0
AC%	4.0 – 8.0	4.0 – 8.0
RAP Materials	Maximum 30% (or as shown on the plans)	Maximum 30%
#200:AC ratio	1.0 max. design	1.0 max. design

It is recommended that the selected combined aggregate gradation not pass through the restricted zones specified in Illinois Modified AASHTO MP 2.

(b) Volumetric Requirements.

Mix	Design Compactive Effort	Design Air Voids Target (%)	VMA (Voids in the Mineral Aggregate) (min.)	VFA (Voids Filled with Asphalt)
IL 9.5L	N <sub>DES</sub> =30	3.0%	14.0%	70 - 80%
IL 19.0L	N <sub>DES</sub> =30	4.0%	13.0%	N/A

(c) Determination of Need for Anti-Stripping Additive. The mixture designer shall determine if an additive is needed in the mix to prevent stripping. The determination shall be made on the basis of tests performed according to Illinois Modified T 283 using 4 in. Marshall bricks. To be considered acceptable by the Engineer as a mixture not susceptible to stripping, the ratio of conditioned to unconditioned split tensile strengths (TSRs) shall be equal to or greater than 0.75. Mixtures, either with or without an additive, with TSRs less than 0.75 will be considered unacceptable.

If it is determined that an additive is required, the additive may be hydrated lime, slaked quicklime, or a liquid additive, at the Contractor's option. The liquid additive shall be selected from the Department's list of approved additives and may be limited to those, which have exhibited satisfactory performance in similar mixes.

Dry hydrated lime shall be added at a rate of 1.0 to 1.5 percent by weight of total dry aggregate. Slurry shall be added in such quantity as to provide the required amount of hydrated lime solids by weight of total dry aggregate. The exact rate of application for all anti-stripping additives will be determined by the Engineer. The method of application shall be according to Article 406.12 of the Standard Specifications.

Personnel. The QC Manager and Level I technician shall have successfully completed the Department's "Superpave Field Control Course".

Required Tests. Testing shall be conducted to control the production of the bituminous mixture. The Contractor shall use the test methods identified to perform the following mixture tests at a frequency not less than that indicated in Table 3.

<b>TABLE 3. Required Plant Tests for Superpave (Low ESAL)</b>		
<b>Parameter</b>	<b>Frequency of Tests</b>	<b>Test Method</b>
Aggregate Gradation  Hot bins for batch and continuous plants.  Individual cold-feeds or combined belt-feed for drier drum plants.  (% passing sieves: 12.5 mm (1/2 in.), 4.75 mm (No. 4), 2.36 mm (No. 8), 600 µm (No. 30), 75 µm (No. 200))	1 dry gradation per day of production (either morning or afternoon sample).  and  1 washed ignition oven test on the mix per day of production (conduct in afternoon if dry gradation is conducted in the morning or vice versa).  NOTE: The order in which the above tests are conducted shall alternate from the previous production day (example: a dry gradation conducted in the morning will be conducted in the afternoon on the next production day and so forth).  The dry gradation and washed ignition oven test results shall be plotted on the same control chart.	Illinois Procedure (See Manual of Test Procedures for Materials).
Asphalt Content by Ignition Oven (Note 1.)	1 per half day of production	Illinois Modified AASHTO T 308
Air Voids  Bulk Specific Gravity of Gyratory Sample.  Maximum Specific Gravity of Mixture	1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day).	Illinois Modified AASHTO T 312  Illinois Modified AASHTO T 209

Note 1. The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors which exceed 1.5 percent. If the ignition oven requirement is waived, other Department approved methods shall be used to determine the AC content.

During production, the ratio of minus 75 µm (#200) sieve material to total asphalt cement shall be not less than 0.6 nor more than 1.2, and the moisture content of the mixture at discharge from the mixer shall not exceed 0.5 percent. If at any time the ratio of minus 75 µm (#200) material to asphalt or moisture content of the mixture falls outside the stated limits, production of mix shall cease. The cause shall be determined and corrective action satisfactory to the Engineer shall be initiated prior to resumption of production.

During production, any mixture containing an anti-stripping additive will be tested by the Engineer for stripping according to Illinois Modified T 283. If the mixture fails to meet the TSR criteria for acceptance, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria.

Control Charts/Limits. Control charts/limits shall be according to QC/QA Class I requirements, except density shall be plotted on the control charts within the following control limits:

TABLE 4. Density Control Limits	
Mixture	Individual Test
IL-9.5L	92.5 – 97.4%
IL-19.0L	93.0 – 97.4 %

Construction Requirements

Placing. The minimum compacted thickness of each lift shall be according to the following table:

Mixture	Minimum Compacted Lift Thickness, mm (in.)
IL-9.5L	32 (1 1/4)
IL-19.0L	57 (2 1/4)

Basis of Payment. This work will be paid for at the contract unit price per metric ton (ton) for BITUMINOUS CONCRETE SURFACE COURSE SUPERPAVE IL-9.5L (Low ESAL), or BITUMINOUS CONCRETE BINDER COURSE SUPERPAVE IL-19.0L (Low ESAL).

**SURFACE TESTING OF PAVEMENTS (BDE)**

Effective: April 1, 2002

Revised: July 1, 2004

**Bituminous Concrete Overlays**

Revise Article 406.03(k) of the Standard Specifications to read:

“(k) Pavement Surface Test Equipment .....1101.10”

Revise Article 406.21 of the Standard Specifications to read:

**“406.21 Surface Tests.** The finished surface of the pavement shall be tested for smoothness within 24 hours and before the pavement is opened to traffic. All objects and debris shall be removed from the pavement surface prior to testing. Testing shall be performed in the presence of the Engineer.

(a) Test Sections/Equipment.

(1) High-Speed Mainline Pavement. High-speed mainline pavement shall consist of pavements, ramps and loops with a posted speed greater than 75 km/hr (45 mph). These sections shall be tested using a California Profilograph or an approved equivalent.

(2) Low-Speed Mainline Pavement. Low-speed mainline pavement shall consist of pavements, ramps and loops with a posted speed of 75 km/hr (45 mph) or less. These sections shall be tested using a California Profilograph or an approved equivalent.

(3) Miscellaneous Pavement. Miscellaneous pavement shall consist of:

- a. pavement on horizontal curves with a centerline radius of curvature of less than or equal to 300 m (1000 ft) and pavement within the superelevation transition of such curves;
- b. the first or last 4.5 m (15 ft) of a pavement section where the Contractor is not responsible for the adjoining surface;
- c. intersections;
- d. variable width pavements;
- e. side street returns;
- f. crossovers;
- g. connector pavement from mainline pavement expansion joint to the bridge approach pavement;
- h. bridge approach pavement; and
- i. other miscellaneous pavement surfaces (i.e. a turn lane) as determined by the Engineer.

Miscellaneous pavement shall be tested using a 5 m (16 ft) straightedge set to a 10 mm (3/8 in.) tolerance.

(b) Lots/Sublots. Mainline pavement test sections will be divided into lots and sublots.

(1) Lots. A lot will be defined as a continuous strip of pavement 1600 m (1 mile) long and one lane wide. When the length of a continuous strip of pavement is less than 1600 m (1 mile), that pavement will be included in an adjacent lot. Structures will be omitted when measuring pavement length.

(2) Sublots. Lots will be divided into 160 m (0.1 mile) sublots. A partial subplot resulting from an interruption in the pavement will be subject to the same evaluation as a whole subplot.

(c) Testing Procedure. One wheel track shall be tested per lane. Testing shall be performed 1 m (3 ft) from and parallel to the edge of the lane away from traffic. A guide shall be used to maintain the proper distance.

The profile trace generated shall have stationing indicated every 150 m (500 ft) at a minimum. Both ends of the profile trace shall be labeled with the following information: contract number, beginning and ending stationing, which direction is up on the trace, which direction the profilograph was pushed, and the profilograph operator name(s). The top portion of the Department supplied form, "Profilograph Report of Pavement Smoothness" shall be completed and secured around the trace roll.

Although surface testing of intermediate lifts will not be required, they may be performed at the Contractor's option. When this option is chosen, the testing shall be performed and the profile traces shall be generated as described above.

The Engineer may perform his/her own testing at any time for monitoring and comparison purposes.

- (d) Trace Reduction and Bump Locating Procedure. All traces shall be reduced. Traces produced by a mechanical recorder shall be reduced using an electronic scanner and computer software. This software shall calculate the profile index of each subplot in mm/km (in./mile) and indicate any high points (bumps) in excess of 8 mm (0.30 in.) with a line intersecting the profile on the printout. Computerized recorders shall provide the same information.

The profile index of each track, average profile index of each subplot, average profile index of the lot and locations of bumps shall be recorded on the form.

All traces and reports shall be provided to the Engineer for the project file.

The Engineer will use the results of the testing to evaluate paving methods and equipment. If the average profile index of a lot exceeds 635 mm/km (40.0 in./mile) for high-speed mainline pavement or 1025 mm/km (65.0 in./mile) for low-speed mainline pavement, the paving operation will be suspended until corrective action is taken by the Contractor.

- (e) Corrective Work. All bumps in excess of 8 mm (0.30 in.) in a length of 8 m (25 ft) or less shall be corrected. If the bump is greater than 13 mm (0.50 in.), the pavement shall be removed and replaced to the satisfaction of the Engineer at the Contractor's expense. The minimum length of pavement to be removed shall be 900 mm (3 ft).
- (1) High-Speed Mainline Pavement. Any subplot having a profile index within the range of, greater than 475 (30.0) to 635 (40.0) mm/km (in./mile) including bumps, shall be corrected to reduce the profile index to 475 mm/km (30.0 in./mile) or less on each trace. Any subplot having a profile index greater than 635 mm/km (40.0 in./mile) including bumps, shall be corrected to reduce the profile index to 475 mm/km (30.0 in./mile) or less on each trace, or replaced at the Contractor's option.
- (2) Low-Speed Mainline Pavement. Any subplot having a profile index within the range of, greater than 710 (45.0) to 1025 (65.0) mm/km (in./mile) including bumps, shall be corrected to reduce the profile index to 710 mm/km (45.0 in./mile) or less on each trace. Any subplot having a profile index greater than 1025 mm/km (65.0 in./mile) including bumps, shall be corrected to reduce the profile index to 710 mm/km (45.0 in./mile) or less on each trace, or replaced at the Contractor's option.

(3) Miscellaneous Pavement. Surface variations which exceed the 10 mm (3/8 in.) tolerance will be marked by the Engineer and shall be corrected by the Contractor.

Corrective work shall be completed using either an approved grinding device consisting of multiple saws or by removing and replacing the pavement. Corrective work shall be applied to the full lane width. When completed, the corrected area shall have uniform texture and appearance, with the beginning and ending of the corrected area squared normal to the centerline of the paved surface.

Upon completion of the corrective work, the surface of the subplot(s) shall be retested. The Contractor shall furnish the profilograph tracing(s) and the completed form(s) to the Engineer within two working days after corrections are made. If the profile index and/or bumps still do not meet the requirements, additional corrective work shall be performed.

Corrective work shall be at the Contractor's expense.

(f) Smoothness Assessments. Assessments will be paid to or deducted from the Contractor for each subplot of mainline pavement, per the Smoothness Assessment Schedule. Assessments will be based on the average profile index of each subplot prior to performing any corrective work unless the Contractor has chosen to remove and replace the subplot. For sublots that are replaced, assessments will be based on the profile index determined after replacement.

Assessments will not be paid or deducted until all other contract requirements for the pavement are satisfied. Pavement that is corrected or replaced for reasons other than smoothness, shall be retested as stated herein.

SMOOTHNESS ASSESSMENT SCHEDULE (Bituminous Concrete Overlays)		
High-Speed Mainline Pavement Average Profile Index mm/km (in./mile)	Low-Speed Mainline Pavement Average Profile Index mm/km (in./mile)	Assessment per subplot
95 (6.0) or less	240 (15.0) or less	+\$150.00
>95 (6.0) to 160 (10.0)	>240 (15.0) to 400 (25.0)	+\$80.00
>160 (10.0) to 475 (30.0)	>400 (25.0) to 710 (45.0)	+\$0.00
>475 (30.0) to 635 (40.0)	>710 (45.0) to 1025 (65.0)	+\$0.00
Greater than 635 (40.0)	Greater than 1025 (65.0)	-\$300.00

Smoothness assessments will not be applied to miscellaneous pavement sections.”

**Bituminous Concrete Pavement (Full-Depth)**

Revise Article 407.09 of the Standard Specifications to read:

**“407.09 Surface Tests.** The finished surface of the pavement shall be tested for smoothness according to Article 406.21 except as follows:

Two wheel tracks shall be tested per lane. Testing shall be performed 1 m (3 ft) from and parallel to each lane edge.”

SMOOTHNESS ASSESSMENT SCHEDULE (Full-Depth Bituminous)		
High-Speed Mainline Pavement Average Profile Index mm/km (in./mile)	Low-Speed Mainline Pavement Average Profile Index mm/km (in./mile)	Assessment per subplot
95 (6.0) or less		+\$800.00
>95 (6.0) to 175 (11.0)	240 (15.0) or less	+\$550.00
>175 (11.0) to 270 (17.0)	>240 (15.0) to 400 (25.0)	+\$350.00
>270 (17.0) to 475 (30.0)	>400 (25.0) to 710 (45.0)	+\$0.00
>475 (30.0) to 635 (40.0)	>710 (45.0) to 1025 (65.0)	+\$0.00
Greater than 635 (40.0)	Greater than 1025 (65.0)	-\$500.00

Delete the fourth paragraph of Article 407.13 of the Standard Specifications.

**Portland Cement Concrete Pavement**

Revise Article 420.12 of the Standard Specifications to read:

**“420.12 Surface Tests.** The finished surface of the pavement shall be tested for smoothness according to Article 406.21 except as follows:

Two wheel tracks shall be tested per lane. Testing shall be performed 1 m (3 ft) from and parallel to each lane edge.

Membrane curing damaged during testing shall be repaired as directed by the Engineer at the Contractor’s expense.

No further texturing for skid resistance will be required for areas corrected by grinding. Protective coat shall be reapplied to ground areas according to Article 420.21 at the Contractor’s expense.”

For pavement that is corrected by removal and replacement, the minimum length to be removed shall meet the requirements of either Class A or Class B patching.



SMOOTHNESS ASSESSMENT SCHEDULE (PCC)		
High-Speed Mainline Pavement Average Profile Index mm/km (in./mile)	Low-Speed Mainline Pavement Average Profile Index mm/km (in./mile)	Assessment per subplot
95 (6.0) or less		+\$1200.00
>95 (6.0) to 175 (11.0)	240 (15.0) or less	+\$950.00
>175 (11.0) to 270 (17.0)	>240 (15.0) to 400 (25.0)	+\$600.00
>270 (17.0) to 475 (30.0)	>400 (25.0) to 710 (45.0)	+\$0.00
>475 (30.0) to 635 (40.0)	>710 (45.0) to 1025 (65.0)	+\$0.00
Greater than 635 (40.0)	Greater than 1025 (65.0)	-\$750.00

Delete the sixth paragraph of Article 420.23 of the Standard Specifications.

### Testing Equipment

Revise Article 1101.10 of the Standard Specifications to read:

**“1101.10 Pavement Surface Test Equipment.** Required surface testing and analysis equipment and their jobsite transportation shall be provided by the Contractor.

- (a) 5 m (16 ft) Straightedge. The 5 m (16 ft) straightedge shall consist of a metal I-beam mounted between two wheels spaced 5 m (16 ft) between the axles. Scratcher bolts which can be easily and accurately adjusted, shall be set at the 1/4, 1/2, and 3/4 points between the axles. A handle suitable for pushing and guiding shall be attached to the straightedge. The straightedge shall meet the approval of the Engineer.
  
- (b) California Profilograph. The California Profilograph or approved equivalent shall consist of a frame 8 m (25 ft) in length supported upon multiple wheels at either end. The profile shall be recorded from the vertical movement of a wheel attached to the frame at mid point. All traces from pavement sections tested with a California Profilograph or approved equivalent shall be recorded on paper with scales of 300:1 longitudinally and 1:1 vertically. Data filters for an automated California Profilograph shall be set according to the parameters outlined in California Test 526, except the blanking band shall be set to 0.0 mm (0.00 in.).
  - (1) Calibration. The Contractor shall demonstrate to the Engineer that the testing equipment has proper tire pressure inflation, trueness of tire travel, and is calibrated for vertical displacement and horizontal distance. This calibration shall consist of the following:
    - a. A 150 to 300 m (500 to 1000 ft) long calibration test section shall be located on the project. This test section should be relatively straight and flat. The profilograph shall be calibrated for longitudinal distance on this test section to the satisfaction of the Engineer.

- b. Longitudinal calibration consists of pushing, at walking speed (approximately 5 km/hr (3 mph)), the profilograph over the pre-measured test section and determining the chart scale factor. To calculate the chart scale factor, divide the pre-measured test distance, in millimeters (inches), by the length of the profile trace from this test section, in millimeters (inches). This factor should be  $300 \pm 0.5$ . If the profilograph produces charts with a different scale factor, adjustment of the profilograph shall be made to bring the scale factor to the tolerance specified above.
- c. Vertical calibration consists of placing the center recording wheel of the profilograph on a base plate and recording the base elevation. Two plates, 13 mm (0.5 in.) thick each, are added under the center wheel, one at a time, and the change in elevation noted. The two plates are removed, one at a time, and the change in elevation noted. Each step in the process shall show a change in height of  $13 \text{ mm} \pm 1.0 \text{ mm}$  ( $0.5 \text{ in.} \pm 0.01 \text{ in.}$ ). If the profilograph produces results not conforming to the above limits, it shall be adjusted to the tolerance specified.
- d. The automatic trace reduction capability of a machine so equipped shall be checked by comparing the machine's results to the results obtained through manual trace reduction using California Test 526 with a 0.0 mm (0.00 in.) blanking band. The comparison shall be made with the trace obtained on the pre-measured test section. The results of the comparison shall not differ by more than 30 mm/km (2.0 in./mile).
- e. All calibration traces and calculations shall be submitted to the Engineer for the project file.

The Engineer may retest the pavement at any time to verify the accuracy of the equipment.

- (2) Trace Analysis. The Contractor shall reduce/evaluate these traces using a 0.0 mm (0.00 in.) blanking band and determine a profile index in mm/km (in./mile) for each section of finished pavement surface. If the Contractor's profilograph is equipped with a computerized recorder, the trace produced will be evaluated without further reduction. If the profilograph has a mechanical recorder, the Contractor shall provide an electronic scanner, a computer, and software to reduce the trace. All analysis equipment (electronic scanner, computerized recorder, etc.) shall be able to accept 0.0 mm (0.00 in.) for the blanking band."

#### **SUSPENSION OF SLIPFORMED PARAPETS (BDE)**

Effective: June 11, 2004

The slipforming option, as stated in Article 503.17(e)(1) of the Standard Specifications will not be allowed on this project.

## **TEMPORARY EROSION CONTROL (BDE)**

Effective: November 1, 2002

Revise the fifth sentence of the third paragraph of Article 280.04(a) of the Standard Specifications to read:

“This work may be constructed of hay or straw bales, extruded UV resistant high density polyethylene panels, erosion control blanket, mulch barrier, aggregate barriers, excavation, seeding, or mulch used separately or in combination, as approved, by the Engineer.”

Add the following paragraphs after the fifth paragraph of Article 280.04(a) of the Standard Specifications.

“A ditch check constructed of extruded, UV resistant, high density polyethylene panels, “M” pins and erosion control blanket shall consist of the following materials:

Extruded, UV resistant, high density polyethylene panels shall have a minimum height of 250 mm (10 in.) and minimum length of 1.0 m (39.4 in.). The panels shall have a 51 mm (2 in.) lip along the bottom of the panel. Each panel shall have a single rib thickness of 4 mm (5/32 in.) with a 12 mm (1/2 in.) distance between the ribs. The panels shall have an average apparent opening size equal to 4.75 mm (No. 4) sieve, with an average of 30 percent open area. The tensile strength of each panel shall be 26.27 kN/m (1800 lb/ft) in the machine direction and 7.3 kN/m (500 lb/ft) in the transverse direction when tested according to ASTM D 4595.

“M” pins shall be at least 76 mm (3 in.) by 686 mm (27 in.), constructed out of deformed grade C1008 D3.5 rod (0.211 in. diameter). The rod shall have a minimum tensile strength of 55 MPa (8000 psi).

Erosion control blanket shall conform to Article 251.04.

A section of erosion control blanket shall be placed transverse to the flowline direction of the ditch prior to the construction of the polyethylene ditch check. The length of the section shall extend from the top of one side of the ditch to the top of the opposite side of the ditch, while the width of the section shall be one roll width of the blanket. The upstream edge of the erosion control blanket shall be secured in a 100 mm (4 in.) trench. The blanket shall be secured in the trench with 200 mm (8 in.) staples placed at 300 mm (1 ft) intervals along the edge before the trench is backfilled. Once the upstream edge of the blanket is secured, the downstream edge shall be secured with 200 mm (8 in.) staples placed at 300 mm (1 ft) intervals along the edge. The polyethylene ditch check shall be installed in the middle of the erosion control blanket, with the lip of each panel facing outward.

The ditch check shall consist of two panels placed back to back forming a single row. Placement of the first two panels shall be at the toe of the backslope or sideslope, with the panels extending across the bottom of the ditch. Subsequent panels shall extend both across the bottom of the ditch and up the opposite sideslope, as well as up the original backslope or sideslope at the distance determined by the Engineer.

The M pins shall be driven through the panel lips to secure the panels to the ground. M pins shall be installed in the center of the panels with adjacent panels overlapping the ends a minimum of 50 mm (2 in.). The pins shall be placed through both sets of panels at each overlap. They shall be installed at an interval of three M pins per one meter (39 in.) length of ditch check. The panels shall be wedged into the M pins at the top to ensure firm contact between the entire bottom of the panels and the soil."

## **TRAFFIC BARRIER TERMINALS (BDE)**

Effective: January 1, 2003

Revise Article 631.05 of the Standard Specifications to read:

**"631.05 Traffic Barrier Terminal, Type 5 and Type 5A.** The face of the guardrail shall be installed flush with the face of the bridge rail or parapet."

Revise Article 631.06 of the Standard Specifications to read:

**"631.06 Traffic Barrier Terminal, Type 6.** When attaching the end shoe to concrete constructed with forms and with a thickness of 300 mm (12 in.) or less, the holes may be formed, core drilled or an approved 20 mm (3/4 in.) cast-in-place insert may be used.

When attaching the end shoe to concrete constructed with forms and with a thickness greater than 300 mm (12 in.), an approved M20 (3/4 in.) bolt with an approved expansion device may be used in lieu of formed or core drilled holes.

When attaching the end shoe to concrete constructed by slipforming, the holes shall be core drilled.

The tapered, parapet, wood block out shall be used on all appurtenances with a sloped face.

When no bridge approach curb is present, Type B concrete curb shall be constructed as shown on the plans according to Section 606."

Revise Article 631.07 of the Standard Specifications to read:

**"631.07 Traffic Barrier Terminal, Type 6B.** Attachment of the end shoe to concrete shall be according to Article 631.06 except the tapered, parapet, wood block out will not be required."

Delete the third and fourth paragraphs of Article 631.11 of the Standard Specifications.

Add the following paragraph to the end of Article 631.11 of the Standard Specifications:

"Construction of the Type B concrete curb for TRAFFIC BARRIER TERMINAL, TYPE 6 will be paid for according to Article 606.14."

### **TRAFFIC CONTROL DEFICIENCY DEDUCTION (BDE)**

Effective: April 1, 1992

Revised: January 1, 2005

To ensure a prompt response to incidents involving the integrity of work zone traffic control, the Contractor shall provide a telephone number where a responsible individual can be contacted 24 hours-a-day.

When the Engineer is notified, or determines a traffic control deficiency exists, he/she will notify and direct the Contractor to correct the deficiency within a specified time. The specified time, which begins upon notification to the Contractor, will be from 1/2 hour to 12 hours based upon the urgency of the situation and the nature of the deficiency. The Engineer shall be the sole judge.

A deficiency may be any lack of repair, maintenance, or non-compliance with the traffic control plan. A deficiency may also be applied to situations where corrective action is not an option such as the use of non-certified flaggers for short term operations; working with lane closures beyond the time allowed in the contract; or failure to perform required contract obligations such as traffic control surveillance.

If the Contractor fails to correct a deficiency within the specified time, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The calendar day(s) will begin with notification to the Contractor and end with the Engineer's acceptance of the correction. The daily monetary deduction will be either \$1,000 or 0.05 percent of the awarded contract value, whichever is greater. For those deficiencies where corrective action was not an option this monetary deduction will be immediate.

In addition, if the Contractor fails to respond, the Engineer may correct the deficiency and the cost thereof will be deducted from monies due or which may become due the Contractor. This corrective action will in no way relieve the Contractor of his/her contractual requirements or responsibilities.

### **TRAINING SPECIAL PROVISIONS**

This Training Special Provision supersedes Section 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," and is in implementation of 23 U.S.C. 140(a).

As part of the contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved. The number of trainees to be trained under this contract will be 8. In the event the contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The contractor shall furnish the trainee a copy of the program he will follow in providing the training. The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

METHOD OF MEASUREMENT The unit of measurement is in hours.

BASIS OF PAYMENT This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price and total price have been included in the schedule of prices.

**TRANSIENT VOLTAGE SURGE SUPPRESSION (BDE)**

Effective: August 1, 2003

Revise the first paragraph of Article 1074.03(a)(4) of the Standard Specifications to read:

“(4) Transient Voltage Surge Suppression. The cabinet shall be provided with transient voltage surge suppression. Transient surge suppression unit leads shall be kept as short as possible and ground shall be made directly to the cabinet wall or ground plate as near as possible to the object being grounded. All transient surge suppression units shall be tested and certified as meeting this specification by an independent testing laboratory. One copy of each of the full testing report shall be submitted to the Engineer.”

Revise Article 1074.03(a)(4)a. of the Standard Specifications to read:

- “a. Surge Suppressor. The suppressor protecting the solid state controller, conflict monitor, and detection equipment shall consist of two stages: stage one which shall include a controller cabinet AC power protection assembly and stage two which shall include AC circuit protection.

The design of the stage one suppressor shall be modular and it shall be installed in such a way that it may be removed and replaced with the intersection under power and in flashing operation. It shall have a permanently mounted and wired base and a removable circuit package. The stage one suppressor shall have two LED failure indicators for power ‘on’ and suppression ‘failure’ and shall meet the following properties:

Stage One Suppressor	
Properties	Criteria
“Plug-in” suppression module	12 pin connector assembly
Clamp voltage	250 V at 20,000 A typical
Response time	Less than 5 nanoseconds
Maximum continuous service current	15 A at 120 VAC 60 Hz
High frequency noise attenuation	At least 50 dB at 100,000 Hz
Operating temperature	-40 °C (-40 °F) to 85 °C (185 °F)

If the controller assembly includes a system telemetry module or remote intersection monitor, the status of the stage one suppressor shall be continuously and remotely monitored by an appropriate alarm circuit.

The stage two, high speed, solid state, transient suppressor shall protect the system from transient over voltage without affecting power at the load. It shall suppress transients of either polarity and from either direction (source or load). The suppressor shall have a visual “on” indicator lamp when the unit is operating normally. It shall also have a UL plastic enclosure, a four position terminal strip for power connection, and it shall utilize silicon avalanche diode technology. The stage two suppressor shall meet the following properties:



Stage Two Suppressor	
Properties	Criteria
Nominal service voltage	120 V at 50/60 Hz
Maximum voltage protection level	±330 V
Minimum voltage protection level	±220 V ±5%
Minimum surge current rating	700 A
Stand by power	Less than 0.5 Watts
Hot to neutral leakage current at 120 V RMS	Less than 5µA
Maximum response time	5 nanoseconds
Operating and Storage temperature	-20 °C (-4 °F) to 50 °C (122 °F)"

**TRUCK BED RELEASE AGENT (BDE)**

Effective: April 1, 2004

Add the following sentence after the third sentence of the first paragraph of Article 406.14 of the Standard Specifications.

“In addition to the release agent, the Contractor may use a light scatter of manufactured sand (FA 20 or FA 21) evenly distributed over the bed of the vehicle.”

**WEIGHT CONTROL DEFICIENCY DEDUCTION**

Effective: April 1, 2001

Revised: August 1, 2002

The Contractor shall provide accurate weights of materials delivered to the contract for incorporation into the work (whether temporary or permanent) and for which the basis of payment is by weight. These weights shall be documented on delivery tickets which shall identify the source of the material, type of material, the date and time the material was loaded, the contract number, the net weight, the tare weight when applicable and the identification of the transporting vehicle. For aggregates, the Contractor shall have the driver of the vehicle furnish or establish an acceptable alternative to provide the contract number and a copy of the material order to the source for each load. The source is defined as that facility that produces the final material product that is to be incorporated into the contract pay items.

The Department will conduct random, independent vehicle weight checks for material sources according to the procedures outlined in the Documentation Section Policy Statement of the Department’s Construction Manual and hereby incorporated by reference. The results of the independent weight checks shall be applicable to all contracts containing this Special Provision. Should the vehicle weight check for a source result in the net weight of material on the vehicle exceeding the net weight of material shown on the delivery ticket by 0.50% (0.70% for aggregates) or more, the Engineer will document the independent vehicle weight check and immediately furnish a copy of the results to the Contractor. No adjustment in pay quantity will be made. Should the vehicle weight check for a source result in the net weight of material shown on the delivery ticket exceeding the net weight of material on the vehicle by 0.50% (0.70% for aggregates) or more, the Engineer will document the independent vehicle weight

check and immediately furnish a copy of the results to the Contractor. The Engineer will adjust the net weight shown on the delivery ticket to the checked delivered net weight as determined by the independent vehicle weight check.

The Engineer will also adjust the method of measurement for all contracts for subsequent deliveries of all materials from the source based on the independent weight check. The net weight of all materials delivered to all contracts containing this Special Provision from this source, for which the basis of payment is by weight, will be adjusted by applying a correction factor "A" as determined by the following formula:

$$A = 1.0 - \left( \frac{B - C}{B} \right); \text{ Where } A \leq 1.0; \left( \frac{B - C}{C} \right) > 0.50\% \text{ (0.70\% for aggregates)}$$

Where A = Adjustment factor  
B = Net weight shown on delivery ticket  
C = Net weight determined from independent weight check

The adjustment factor will be applied as follows:

$$\text{Adjusted Net Weight} = A \times \text{Delivery Ticket Net Weight}$$

The adjustment factor will be imposed until the cause of the deficient weight is identified and corrected by the Contractor to the satisfaction of the Engineer. If the cause of the deficient weight is not identified and corrected within seven (7) calendar days, the source shall cease delivery of all materials to all contracts containing this Special Provision for which the basis of payment is by weight.

Should the Contractor elect to challenge the results of the independent weight check, the Engineer will continue to document the weight of material for which the adjustment factor would be applied. However, provided the Contractor furnishes the Engineer with written documentation that the source scale has been calibrated within seven (7) calendar days after the date of the independent weight check, adjustments in the weight of material paid for will not be applied unless the scale calibration demonstrates that the source scale was not within the specified Department of Agriculture tolerance.

At the Contractor's option, the vehicle may be weighed on a second independent Department of Agriculture certified scale to verify the accuracy of the scale used for the independent weight check.

#### **WORK ZONE SPEED LIMIT SIGNS (BDE)**

Effective: April 2, 2004

Revised: April 15, 2004

Delete Article 702.05(c).

Revise Article 702.05(d) to read:

"(d) Work Zone Speed Limit Signs. Work zone speed limit sign assemblies shall be provided and located as shown on the plans. Two additional assemblies shall be placed 150 m

(500 ft) beyond the last entrance ramp for each interchange. The individual signs that make up an assembly may be combined on a single panel. The sheeting for the signs shall be reflective and conform to the requirements of Article 1084.02.

All permanent "SPEED LIMIT" signs located within the work zone shall be removed or covered. This work shall be coordinated with the lane closure(s) by promptly establishing a reduced posted speed zone when the lane closure(s) are put into effect and promptly reinstating the posted speed zone when the lane closure(s) are removed.

The work zone speed limit signs and end work zone speed limit signs shown in advance of and at the end of the lane closure(s) shall be used for the entire duration of the closure(s).

The work zone speed limit signs shown within the lane closure(s) shall only be used when workers are present in the closed lane adjacent to traffic; at all other times, the signs shall be promptly removed or covered. The sign assemblies shown within the lane closure(s) will not be required when the worker(s) are located behind a concrete barrier wall.

#### **WORK ZONE TRAFFIC CONTROL DEVICES (BDE)**

Effective: January 1, 2003

Revised: November 1, 2004

Add the following to Article 702.01 of the Standard Specifications:

"All devices and combinations of devices shall meet the requirements of the National Cooperative Highway Research Program (NCHRP) Report 350 for their respective categories. The categories are as follows:

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, flexible delineators and plastic drums with no attachments. Category 1 devices shall be crash tested and accepted or may be self-certified by the manufacturer.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include drums and vertical panels with lights, barricades and portable sign supports. Category 2 devices shall be crash tested and accepted for Test Level 3.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions, truck mounted attenuators and other devices not meeting the definitions of Category 1 or 2. Category 3 devices shall be crash tested and accepted for either Test Level 3 or the test level specified.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals and area lighting supports. Currently, there is no implementation date set for this category and it is exempt from the NCHRP 350 compliance requirement.

The Contractor shall provide a manufacturer's self-certification letter for each Category 1 device and an FHWA acceptance letter for each Category 2 and Category 3 device used on the contract. The letters shall state the device meets the NCHRP 350 requirements for its respective category and test level, and shall include a detail drawing of the device."

Delete the third, fourth and fifth paragraphs of Article 702.03(b) of the Standard Specifications.

Delete the third sentence of the first paragraph of Article 702.03(c) of the Standard Specifications.

Revise the first sentence of the first paragraph of Article 702.03(e) of the Standard Specifications to read:

"Drums shall be nonmetallic and have alternating reflectorized Type AA or Type AP fluorescent orange and reflectorized white horizontal, circumferential stripes."

Add the following to Article 702.03 of the Standard Specifications:

"(h) Vertical Barricades. Vertical barricades may be used in lieu of cones, drums or Type II barricades to channelize traffic."

Delete the fourth paragraph of Article 702.05(a) of the Standard Specifications.

Revise the sixth paragraph of Article 702.05(a) of the Standard Specifications to read:

"When the work operations exceed four days, all signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. When approved by the Engineer, a temporary sign stand may be used to support a sign at 1.2 m (5 ft) minimum where posts are impractical. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 30 m (100 ft) to avoid obstacles, hazards or to improve sight distance, when approved by the Engineer. "ROAD CONSTRUCTION AHEAD" signs will also be required on side roads located within the limits of the mainline "ROAD CONSTRUCTION AHEAD" signs."

Delete all references to "Type 1A barricades" and "wing barricades" throughout Section 702 of the Standard Specifications.

### **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.

### **STEEL COST ADJUSTMENT (BDE)**

Effective: April 2, 2004

Revised: July 1, 2004

Description. At the bidder's option, a steel cost adjustment will be made to provide additional compensation to the Contractor or a credit to the Department for fluctuations in steel prices. The bidder must indicate on the attached form whether or not steel cost adjustments will be part of this contract. This attached form shall be submitted with the bid. Failure to submit the form shall make this contract exempt of steel cost adjustments.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

Metal Piling (excluding temporary sheet piling)  
Structural Steel  
Reinforcing Steel

Other steel materials such as dowel bars, tie bars, mesh reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), frames and grates, and other miscellaneous items will be subject to a steel cost adjustment when the pay item they are used in has a contract value of \$10,000 or greater.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

- (a) Evidence that increased or decreased steel costs have been passed on to the Contractor.
- (b) The dates and quantity of steel, in kg (lb), shipped from the mill to the fabricator.
- (c) The quantity of steel, in kg (lb), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$$SCA = Q \times D$$

Where: SCA = steel cost adjustment, in dollars  
Q = quantity of steel incorporated into the work, in kg (lb)  
D = price factor, in dollars per kg (lb)

$$D = CBP_M - CBP_L$$

Where:  $CBP_M$  = The average of the Consumer Buying Price indices for Shredded Auto Scrap (Chicago) and No. 1 Heavy Melt (Chicago) as published by the American Metal Market (AMM) for the day the steel is shipped from the mill. The indices will be converted from dollars per ton to dollars per kg (lb).

$CBP_L$  = The average of the Consumer Buying Price indices for Shredded Auto Scrap (Chicago) and No. 1 Heavy Melt (Chicago) as published by the AMM for the day the contract is let. The indices will be converted from dollars per ton to dollars per kg (lb).

The unit masses (weights) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the  $CBP_M$  will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the  $CBP_L$  and  $CBP_M$  in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(CBP_L - CBP_M) \div CBP_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the steel items are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

**Attachment**

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling)	
Furnishing Metal Pile Shells 305 mm (12 in.), 3.80 mm (0.179 in.) wall thickness)	34 kg/m (23 lb/ft)
Furnishing Metal Pile Shells 305 mm (12 in.), 6.35 mm (0.250 in.) wall thickness)	48 kg/m (32 lb/ft)
Furnishing Metal Pile Shells 356 mm (14 in.), 6.35 mm (0.250 in.) wall thickness)	55 kg/m (37 lb/ft)
Other piling	See plans
Structural Steel	See plans for weights
Reinforcing Steel	See plans for weights
Dowel Bars and Tie Bars	3 kg (6 lb) each
Mesh Reinforcement	310 kg/sq m (63 lb/100 sq ft)
Guardrail	
Steel Plate Beam Guardrail, Type A w/steel posts	30 kg/m (20 lb/ft)
Steel Plate Beam Guardrail, Type B w/steel posts	45 kg/m (30 lb/ft)
Steel Plate Beam Guardrail, Types A and B w/wood posts	12 kg/m (8 lb/ft)
Steel Plate Beam Guardrail, Type 2	140 kg (305 lb) each
Steel Plate Beam Guardrail, Type 6	570 kg (1260 lb) each
Traffic Barrier Terminal, Type 1 Special (Tangent)	330 kg (730 lb) each
Traffic Barrier Terminal, Type 1 Special (Flared)	185 kg (410 lb) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms	
Traffic Signal Post	16 kg/m (11 lb/ft)
Light Pole, Tenon Mount and Twin Mount, 9 m – 12 m (30 - 40 ft)	21 kg/m (14 lb/ft)
Light Pole, Tenon Mount and Twin Mount, 13.5 m – 16.5 m (45 - 55 ft)	31 kg/m (21 lb/ft)
Light Pole w/Mast Arm, 9 m – 15.2 m (30 - 50 ft)	19 kg/m (13 lb/ft)
Light Pole w/Mast Arm, 16.5 m – 18 m (55 - 60 ft)	28 kg/m (19 lb/ft)
Light Tower w/Luminaire Mount, 24 m – 33.5 m (80 - 110 ft)	46 kg/m (31 lb/ft)
Light Tower w/Luminaire Mount, 36.5 m – 42.5 m (120 - 140 ft)	97 kg/m (65 lb/ft)
Light Tower w/Luminaire Mount, 45.5 m – 48.5 m (150 - 160 ft)	119 kg/m (80 lb/ft)
Metal Railings (excluding wire fence)	
Steel Railing, Type SM	95 kg/m (64 lb/ft)
Steel Railing, Type S-1	58 kg/m (39 lb/ft)
Steel Railing, Type T-1	79 kg/m (53 lb/ft)
Steel Bridge Rail	77 kg/m (52 lb/ft)
Frames and Grates	
Frame	115 kg (250 lb)
Lids and Grates	70 kg (150 lb)

**RETURN WITH BID**

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

**OPTION FOR  
STEEL COST ADJUSTMENT**

The bidder shall submit this form with his/her bid. Failure to submit the form shall make this contract exempt of steel cost adjustments. After award, this form, when submitted shall become part of the contract.

**Contract No.:** \_\_\_\_\_

**Company Name:** \_\_\_\_\_

**Contractor's Option:**

Is your company opting to include this special provision as part of the contract plans?

Yes  No

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_





**Storm Water Pollution Prevention Plan**

Route FAI Route 74  
Section (72-7)R-3  
County Peoria

Marked I-74  
Project No. D-94-009-02

This plan has been prepared to comply with the provisions of the NPDES Permit Number ILR10, issued by the Illinois Environmental Protection Agency for storm water discharges from Construction Site Activities.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

*John E. Cooney*  
Signature  
REGIONAL ENGINEER  
Title

2-10-05  
Date

**1. Site Description**

- a. The following is a description of the construction activity which is the subject of this plan (use additional pages, as necessary):

The work consists of reconstructing the Westbound FAI I-74 pavement at locations shown in the plans. War Memorial Drive will be widened and resurfaced. Access ramps will be constructed at Sterling Avenue and the War Memorial Drive and Gale Avenue interchanges will be reconstructed. In addition to pavement reconstruction, the improvements include earth excavation and embankment, the construction of retaining walls (SN 072-8618, 072-8619), removal and replacement of existing SN 072-2032 (twin box culverts beneath I-74), removal and replacement of existing SN 072-2030 (twin box culverts beneath ramp B-3), the extension of an existing box culvert, construction of parallel culverts beneath War Memorial Drive, the removal and replacement of a box culvert (SN 072-2005), construction of noise walls, removal and replacement of pavement underdrain system, realignment of Dry Run Creek, pipe culverts, storm sewers, drainage ditch construction and realignment, construction of median and ramp crossovers, guardrail, tree removal, lighting, traffic control signals, signing, and miscellaneous items pertaining to this work.

- b. The following is a description of the intended sequence of major activities which will disturb soils for major portions of the construction site, such as grubbing, excavation and grading (use additional pages, as necessary):  
Sequence of Construction as follows:

- |                                 |   |
|---------------------------------|---|
| 1. Clearing and Tree Removal    | 2. Erosion Control and Inlet Protection     |
| 3. Removal and Demolition       | 4. Underground Utilities and Storm Sewer    |
| 5. Excavation and Rough Grading | 6. Roadway, Ramp and Structure Construction |
| 7. Final Grading and Seeding    |   |

- c. The total area of the construction site is estimated to be 208.1 acres.

The total area of the site that it is estimated will be disturbed by excavation, grading or other activities is \_\_\_\_\_ acres.

- d. The estimated runoff coefficients of the various areas of the site after construction activities are completed are contained in the project drainage study which is hereby incorporated by reference in this plan. Information describing the soils at the site is contained either in the Soils Report for the project, which is hereby incorporated by reference, or in an attachment to this plan.
- e. The design/project report, hydraulic report, or plan documents, hereby incorporated by reference, contain site map(s) indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of major soil disturbance, the location of major structural and nonstructural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands), and locations where storm water is discharged to a surface water.
- f. The names of receiving water(s) and areal extent of wetland acreage at the site are in the design/project report or plan documents which are incorporated by reference as a part of this plan.

## 2. Controls

This section of the plan addresses the various controls that will be implemented for each of the major construction activities described in 1.b. above. For each measure discussed, the contractor that will be responsible for its implementation is indicated. Each such contractor has signed the required certification on forms which are attached to, and a part of, this plan:

### a. Erosion and Sediment Controls

- (i) **Stabilization Practices.** Provided below is a description of interim and permanent stabilization practices, including site-specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include: temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided in 2.a.(i).(A) and 2.b., stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased on all disturbed portions of the site where construction activity will not occur for a period of 21 or more calendar days.

- (A) where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceases is precluded by snow cover, stabilization measures shall be initiated as soon as practicable thereafter.

Description of Stabilization Practices (use additional pages, as necessary):

The intent of the stabilization practices is to provide permanent seeding, erosion control blanket, and mulch on areas disturbed as soon as possible. Temporary seeding for erosion control will be placed as soon as possible on disturbed areas, and enhanced with temporary seeding, until permanent controls can be installed. Articulated Block Mat and temporary ditch checks will be constructed in ditch bottoms to stabilize ditch bottoms and prevent erosion.

- (ii) **Structural Practices.** Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include silt fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions and temporary or permanent sediment basins. The installation of these devices may be subject to Section 404 of the Clean Water Act.

Description of Structural Practices (use additional pages, as necessary):

Perimeter Erosion Barrier (silt fence) will be used in all areas where runoff from disturbed areas has the potential to travel offsite or into swales, ditches, ponds, wetlands, or other natural water bodies. Temporary ditch checks will be placed within proposed drainage swales and ditches as shown on the plans.

Inlet and Pipe Protection will be used on all drainage structures where runoff from disturbed areas is collected.

Perimeter Erosion Barrier (silt fence) shall be constructed at the toes of all temporary stockpiles.

Temporary measures to remain in place until permanent measures are taken and/or vegetation has been established.

**b. Storm Water Management**

Provided below is a description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.

(i) Such practices may include: storm water detention structures (including wet ponds); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff on site; and sequential systems (which combine several practices). **The practices selected for implementation were determined on the basis of the technical guidance in Section 10-300 (Design Considerations) in Chapter 10 (Erosion and Sedimentation Control) of the Illinois Department of Transportation Drainage Manual. If practices other than those discussed in Section 10-300 are selected for implementation or if practices are applied to situations different from those covered in Section 10-300, the technical basis for such decisions will be explained below.**

(ii) Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., maintenance of hydrologic conditions, such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of Storm Water Management Controls (use additional pages, as necessary):

Riprap will be placed at culvert inlets and outlets at the locations shown on the plans to dissipate velocity and provide channel and storm sewer stability. Riprap will be placed in ditches at the locations shown on the plans to provide channel stability.

Where feasible, infield areas of ramps will be used as vegetated swales and infiltration areas for storm water prior to being collected by subsurface drainage system.

The Engineer may add additional temporary measures to fit field conditions.

**c. Other Controls**

- (i) **Waste Disposal.** No solid materials, including building materials, shall be discharged into Waters of the State, except as authorized by a Section 404 permit.
- (ii) The provisions of this plan shall ensure and demonstrate compliance with applicable State and/or local waste disposal, sanitary sewer or septic system regulations.

**d. Approved State or Local Plans**

The management practices, controls and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Illinois Urban Manual, 1995. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans or site permits or storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI to be authorized to discharge under permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

Not Applicable.

### 3. Maintenance

The following is a description of procedures that will be used to maintain, in good and effective operating conditions, vegetation, erosion and sediment control measures and other protective measures identified in this plan (use additional pages, as necessary):

Maintenance of erosion control items will be as described in Section 280 of the Standard Specifications, including additional temporary seeding for erosion control when necessary and cleaning of silt as required due to field conditions and repairing damage as it occurs.

### 4. Inspections

Qualified personnel shall inspect disturbed areas of the construction site which have not been finally stabilized, structural control measures, and locations where vehicles enter or exit the site. Such inspections shall be conducted at least once every seven (7) calendar days and within 24 hours of the end of a storm that is 0.5 inches or greater or equivalent snowfall.

- a. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off site sediment tracking.
- b. Based on the results of the inspection, the description of potential pollutant sources identified in section 1 above and pollution prevention measures identified in section 2 above shall be revised as appropriate as soon as practicable after such inspection. Any changes to this plan resulting from the required inspections shall be implemented within 7 calendar days following the inspection.
- c. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of this storm water pollution prevention plan, and actions taken in accordance with section 4.b. shall be made and retained as part of the plan for at least three (3) years after the date of the inspection. The report shall be signed in accordance with Part VI. G of the general permit.
- d. If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer or Resident Technician shall complete and file an "Incidence of Noncompliance" (ION) report for the identified violation. The Resident Engineer or Resident Technician shall use forms provided by the Illinois Environmental Protection Agency and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of noncompliance shall be signed by a responsible authority in accordance with Part VI. G of the general permit.

The report of noncompliance shall be mailed to the following address:

Illinois Environmental Protection Agency  
Division of Water Pollution Control  
Attn: Compliance Assurance Section  
1021 North Grand East  
Post Office Box 19276  
Springfield, Illinois 62794-9276

## 5. Non-Storm Water Discharges

Except for flows from fire fighting activities, sources of non-storm water that is combined with storm water discharges associated with the industrial activity addressed in this plan must be described below. Appropriate pollution prevention measures, as described below, will be implemented for the non-storm water component(s) of the discharge. (Use additional pages as necessary to describe non-storm water discharges and applicable pollution control measures).

Non-storm water discharges shall be directed to erosion control facilities prior to discharging from the site. Erosion control facilities shall be perimeter erosion barrier, inlet and pipe protection, ditch checks or sediment basins. If existing erosion control facilities are not present at the proposed point of non-storm water discharge, then erosion facilities shall be constructed, as approved by the engineer, prior to the release of a non-storm water discharge.

Erosion control facilities are required for the following non-storm water discharges:

- Vehicle Wash Down Water
- Pavement Cleaning
- Water for Dust Control
- Water for Seeding and Landscaping Purposes



### Contractor Certification Statement

This certification statement is a part of the Storm Water Pollution Prevention Plan for the project described below, in accordance with NPDES Permit No. ILR10, issued by the Illinois Environmental Protection Agency on May 14, 1998.

**Project Information:**

Route FAI Route 74 Marked I-74  
Section (72-7)R-3 Project No. D-94-009-02  
County Peoria

I certify under penalty of law that I understand the terms of the general National Pollutant Discharge Elimination System (NPDES) permit (ILR 10) that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

_____ Signature	_____ Date
_____ Title	
_____ Name of Firm	
_____ Street Address	
_____ City	_____ State
_____ Zip Code	
_____ Telephone Number	



**REQUIRED CONTRACT PROVISIONS  
FEDERAL-AID CONSTRUCTION CONTRACTS**

	Page
I. General .....	1
II. Nondiscrimination .....	1
III. Nonsegregated Facilities .....	3
IV. Payment of Predetermined Minimum Wage.....	3
V. Statements and Payrolls .....	6
VI. Record of Materials, Supplies, and Labor.....	7
VIII. Safety: Accident Prevention .....	7
IX. False Statements Concerning Highway Projects.....	7
X. Implementation of Clean Air Act and Federal Water Pollution Control Act .....	8
XI. Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion .....	8
XII. Certification Regarding Use of Contract Funds for Lobbying .....	9

**ATTACHMENTS**

- A. Employment Preference for Appalachian Contracts  
(included in Appalachian contracts only)

**I. GENERAL**

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

- Section I, paragraph 2;
- Section IV, paragraphs 1, 2, 3, 4 and 7;
- Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6 and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. Selection of Labor: During the performance of this contract, the contractor shall not:

- a. Discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or
- b. Employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

**II. NONDISCRIMINATION**

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60 (and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job-training."

2. EEO Officer: The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for an must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above

agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employees referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish which such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any

evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to

the SHA and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or quailifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.

### III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

### IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

#### 1. General:

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the

contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

## 2. Classification:

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or

disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the question, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

## 3. Payment of Fringe Benefits:

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any cost reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

## 4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

### a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not

be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits

Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which cases such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV. 2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. Apprentices and Trainees (Programs of the U.S. DOT):

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. Withholding:

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainee's and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. Overtime Requirements:

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violation:

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. Withholding for Unpaid Wages and Liquidated Damages:

The SHA shall; upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

**V. STATEMENTS AND PAYROLLS**

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. Compliance with Copeland Regulations (29 CFR 3):

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. Payrolls and Payroll Records:

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan

or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period).

The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V.

This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U/S. C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for

inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

## **VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR**

1. On all federal-aid contracts on the national highway system, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than \$1,000,000 (23 CFR 635) the contractor shall:

- a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.
- b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.
- c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

## **VII. SUBLETTING OR ASSIGNING THE CONTRACT**

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

- a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.
- b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a

whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract.

Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

## **VIII. SAFETY: ACCIDENT PREVENTION**

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S. C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

## **IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS**

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification,

distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

**NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS**

18 U.S.C. 1020 reads as follows:

*"Whoever, being an officer, agent or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or*

*Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or*

*Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;*

*Shall be fined not more than \$10,000 or imprisoned not more than 5 years or both."*

**X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT**

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more).

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of

any communication from the Director, Office of Federal Activities, EPA indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

**XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

1. Instructions for Certification - Primary Covered Transactions:

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled



"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.

\*\*\*\*\*

### **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Primary Covered Transactions**

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and
- d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

### **2. Instructions for Certification - Lower Tier Covered Transactions:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions of \$25,000 or more - 49 CFR 29)

- a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealing.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

\*\*\*\*\*

**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.

\*\*\*\*\*

**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.