

# **BID PROPOSAL INSTRUCTIONS**

**ABOUT IDOT PROPOSALS:** All proposals are potential bidding proposals. Each proposal contains all certifications and affidavits, a proposal signature sheet and a proposal bid bond.

## **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.

## **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.

## **REQUESTS FOR AUTHORIZATION TO BID**

Contractors 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 124) and the ORIGINAL "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.

## **WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?**

When a prospective prime bidder submits a "Request for Authorization to Bid/or Not For Bid Status"(BDE 124) 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 an **Authorization to Bid or Not for Bid Report**, approved by the Central Bureau of Construction and the Chief Procurement Officer that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Authorization to Bid or Not for Bid Report** will indicate the reason for denial.

## **ABOUT AUTHORIZATION TO BID**

Firms that have not received an Authorization to Bid or Not For Bid Report within a reasonable time of complete and correct original document submittal should contact the Department as to the status. 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 bidder'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 or revision will be included with the Electronic Plans and Proposals. 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 service emails are an added courtesy the Department provides. It is suggested that bidders check IDOT's website at <http://www.idot.illinois.gov/doing-business/procurements/construction-services/construction-bulletins/transportation-bulletin/index#TransportationBulletin> before submitting final bid information.

***IDOT IS NOT RESPONSIBLE FOR ANY E-MAIL FAILURES.***

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

Technical questions about downloading these files may be directed to Tim Garman at (217)524-1642 or [Timothy.Garman@illinois.gov](mailto:Timothy.Garman@illinois.gov).

## **STANDARD GUIDELINES FOR SUBMITTING BIDS**

- All pages should be single sided.
- Use the Cover Page that is provided in the Bid Proposal (posted on the IDOT Web Site) as the first page of your submitted bid. It has the item number in large bold type in the upper left-hand corner and lines provided for your company name and address in the upper right-hand corner.
- Do not use report covers, presentation folders or special bindings and do not staple multiple times on left side like a book. Use only 1 staple in the upper left hand corner. Make sure all elements of your bid are stapled together including the bid bond or guaranty check (if required).
- **Do not include any certificates of eligibility, your authorization to bid, Addendum Letters or affidavit of availability.**
- Do not include the Subcontractor Documentation with your bid (pages i – iii and pages a – g). This documentation is required only if you are awarded the project.
- Use the envelope cover sheet (provided with the proposal) as the cover for the proposal envelope.
- Do not rely on overnight services to deliver your proposal prior to 10 AM on letting day. It will not be read if it is delivered after 10 AM.
- Do not submit your Substance Abuse Prevention Program (SAPP) with your bid. If you are awarded the contract this form is to be submitted to the district engineer at the pre-construction conference.

## **BID SUBMITTAL CHECKLIST**

- Cover page** (the sheet that has the item number on it) – This should be the first page of your bid proposal, **followed by your bid (the Schedule of Prices/Pay Items)**. If you are using special software or CBID to generate your schedule of prices, do not include the blank pages of the schedule of prices that came with the proposal package.
- Page 4 (Item 9)** – Check “YES” if you will use a subcontractor(s) with an annual value over \$50,000. Include the subcontractor(s) name, address, general type of work to be performed and the dollar amount. If you will use subcontractor(s) but are uncertain who or the dollar amount; check “YES” but leave the lines blank.
- After page 4** – Insert the following documents: Cost Adjustments for Steel, Bituminous and Fuel (if applicable) and the Contractor Letter of Assent (if applicable). The general rule should be, if you don’t know where it goes, put it after page 4.
- Page 10 (Paragraph J)** – Check “YES” or “NO” whether your company has any business in Iran.
- Page 10 (Paragraph K)** – (Not applicable to federally funded projects) List the name of the apprenticeship and training program sponsor holding the certificate of registration from the US Department of Labor. If no applicable program exists, please indicate the work/job category. Do not include certificates with your bid. Keep the certificates in your office in case they are requested by IDOT.
- Page 11 (Paragraph L)** – A copy of your State Board of Elections certificate of registration is no longer required with your bid.
- Page 11 (Paragraph M)** – Indicate if your company has hired a lobbyist in connection with the job for which you are submitting the bid proposal.
- Page 12 (Paragraph C)** – This is a work sheet to determine if a completed Form A is required. It is not part of the form and you do not need to make copies for each completed Form A.
- Pages 14-17 (Form A)** – One Form A (4 pages) is required for each applicable person in your company. Copies of the forms can be used and only need to be changed when the information changes. The certification signature and date must be original for each letting. **Do not staple the forms together.** If you answered “NO” to all of the questions in Paragraph C (page 12), complete the first section (page 14) with your company information and then sign and date the Not Applicable statement on page 17.
- Page 18 (Form B)** - If you check “YES” to having other current or pending contracts it is acceptable to use the phrase, “See Affidavit of Availability on file”. **Ownership Certification** (at the bottom of the page) - Check N/A if the Form A(s) you submitted accounts for 100 percent of the company ownership. Check YES if any percentage of ownership falls outside of the parameters that require reporting on the Form A. Checking NO indicates that the Form A(s) you submitted is not correct and you will be required to submit a revised Form A.
- Page 20 (Workforce Projection)** – Be sure to include the Duration of the Project. It is acceptable to use the phrase “Per Contract Specifications”.

**Proposal Bid Bond** – (Insert after the proposal signature page) Submit your proposal Proposal Bid Bond (if applicable) using the current Proposal Bid Bond form provided in the proposal package. The Power of Attorney page should be stapled to the Proposal Bid Bond. If you are using an electronic bond, include your bid bond number on the Proposal Bid Bond and attach the Proof of Insurance printed from the Surety’s Web Site.

**Disadvantaged Business Utilization Plan and/or Good Faith Effort** – The last items in your bid should be the DBE Utilization Plan (SBE 2026), followed by the DBE Participation Statement (SBE 2025) and supporting paperwork. If you have documentation of a Good Faith Effort, it is to follow the SBE Forms.

**The Bid Letting is now available in streaming Audio/Video from the IDOT Web Site.** A link to the stream will be placed on the main page of the current letting on the day of the Letting. The stream will not begin until 10 AM. The actual reading of the bids does not begin until approximately 10:30 AM.

Following the Letting, the As-Read Tabulation of Bids will be posted by the end of the day. You will find the link on the main Web page for the current letting.

**QUESTIONS: pre-letting up to execution of the contract**

Contractor pre-qualification .....	217-782-3413
Small Business, Disadvantaged Business Enterprise (DBE) .....	217-785-4611
Contracts, Bids, Letting process or Internet downloads .....	217-782-7806
Estimates Unit.....	217-785-3483
Aeronautics.....	217-785-8515
IDNR (Land Reclamation, Water Resources, Natural Resources).....	217-782-6302

**QUESTIONS: following contract execution**

Subcontractor documentation, payments .....	217-782-3413
Railroad Insurance .....	217-785-0275

# 1X

Proposal Submitted By
Name
Address
City

## FOR REVIEW AND INSPECTION ONLY

### NOTICE TO PROSPECTIVE BIDDERS

This proposal is for Review and Inspection Only

This contract is intended to be let on the September 19, 2015 letting.

It is NOT available for bid on the July 31, 2015 letting.

# Notice to Bidders, Specifications, Proposal,



**Illinois Department  
of Transportation**

Springfield, Illinois 62764

**Contract No. 64G59  
CARROLL County  
Section 104 B-2  
Route FAP 17  
Project ACNHPP-0017(132)  
District 2 Construction Funds**

PLEASE MARK THE APPROPRIATE BOX BELOW:

- A Bid Bond is included.
- A Cashier's Check or a Certified Check is included
- An Annual Bid Bond is included or is on file with IDOT.

Prepared by

Checked by

F

(Printed by authority of the State of Illinois)



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RETURN WITH BID



PROPOSAL

TO THE DEPARTMENT OF TRANSPORTATION

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

\_\_\_\_\_

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

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

**Contract No. 64G59  
CARROLL County  
Section 104 B-2  
Project ACNHPP-0017(132)  
Route FAP 17  
District 2 Construction Funds**

**Bridge replacement and realignment of US 52/IL 64 over the Mississippi River, the Burlington Northern and Santa Fe Railway in Savanna (SN 008-0052).**

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 will govern performance and payments.

**RETURN WITH BID**

3. **ASSURANCE OF EXAMINATION AND INSPECTION/WAIVER.** The undersigned bidder further declares that he/she has carefully examined the proposal, plans, specifications, addenda 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 bid proposal he/she waives all right to plead any misunderstanding regarding the same.
  
4. **EXECUTION OF CONTRACT AND CONTRACT BOND.** The undersigned bidder 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, or as specified in the special provisions, 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 bid proposals will be made payable to the Treasurer, State of Illinois.

If a combination bid is submitted, the proposal guaranties which accompany the individual bid 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 will fail to execute a contract bond as required herein, it is hereby agreed that the amount of the proposal guaranty will 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 will become void or the proposal guaranty check will 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 bid proposals, the amount must be equal to the sum of the proposal guaranties which would be required for each individual bid proposal. If the guaranty check is placed in another bid proposal, state below where it may be found.

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

Item \_\_\_\_\_

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

County \_\_\_\_\_

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

**RETURN WITH BID**

6. **COMBINATION BIDS.** The undersigned bidder 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 contract 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 will 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. **AUTHORITY TO DO BUSINESS IN ILLINOIS.** Section 20-43 of the Illinois Procurement Code (the Code) (30 ILCS 500/20-43) provides that a person (other than an individual acting as a sole proprietor) must be a legal entity authorized to transact business or conduct affairs in the State of Illinois prior to submitting the bid.

9. **EXECUTION OF CONTRACT:** The Department of Transportation will, in accordance with the rules governing Department procurements, execute the contract and shall be the sole entity having the authority to accept performance and make payments under the contract. Execution of the contract by the Chief Procurement Officer (CPO) or the State Purchasing Officer (SPO) is for approval of the procurement process and execution of the contract by the Department. Neither the CPO nor the SPO shall be responsible for administration of the contract or determinations respecting performance or payment there under except as otherwise permitted in the Code.

10. **The services of a subcontractor will be used.**

Check box Yes   
 Check box No

For known subcontractors with subcontracts with an annual value of more than \$50,000, the contract shall include their name, address, general type of work to be performed, and the dollar allocation for each subcontractor. (30 ILCS 500/20-120)

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ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER -

64G59

State Job # - C-92-128-13

County Name - CARROLL - -

Code - 15 - -

District - 2 - -

Section Number - 104B-2

Project Number  
 ACNHPP-0017/132/

Route  
 FAP 17

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
A2C015G3	T-BETULA NIGRA CG 3G	EACH	166.000				
A2C040G3	T-PLAT OCCID CG 3G	EACH	166.000				
A2C050G3	T-QUERC BICOL CG 3G	EACH	166.000				
A2002314	T-BETULA NIGRA 1-3/4	EACH	27.000				
A2006514	T-QUERCUS BICOL 1-3/4	EACH	27.000				
A2006914	T-QUERCUS PALUS 1-3/4	EACH	27.000				
A2007814	T-TILIA AMER 1-3/4	EACH	26.000				
C2C01120	S-CEPHALAN OCCID 2' C	EACH	166.000				
C2C09624	S-SAMBUCUS CANAD 2'C	EACH	166.000				
X0300864	MAINT OF NAVIGATION	L SUM	1.000				
X0301847	WATER TRANSPORT- ENGR	CAL MO	30.000				
X0321809	PERMANENT GRND ANCHOR	EACH	268.000				
X0322024	TRENCH DRAIN	EACH	1.000				
X0322227	CCTV CAMERA SYSTEM	EACH	2.000				
X0324455	DRILL/SET SOLD P SOIL	CU FT	34,256.000				

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X0324456	DRILL/SET SOLD P ROCK	CU FT	24,003.000				
X0325366	STORM SEWER REPAIR	FOOT	3.000				
X0325634	HLMR BRNG FIXED 2500K	EACH	2.000				
X0325658	HLMR BRG GUID EX 2500	EACH	2.000				
X0326498	GFCI20A DX RECEPTACLE	EACH	26.000				
X0326805	FOUNDATION REMOVAL	SQ FT	4,644.000				
X0326935	CROSSHOLE SONIC LOG	EACH	32.000				
X0327357	CONSTRN VBRN MONITRNG	L SUM	1.000				
X0327778	HANGER ASSEMBLY ARCH	L SUM	1.000				
X0488100	REM EX SEPTIC TANK	EACH	2.000				
X0900015	COFFERCELL LOCATION 6	EACH	1.000				
X0900016	COFFERCELL LOCATION 7	EACH	1.000				
X0900017	COFFERCELL LOCATION 8	EACH	1.000				
X0900018	COFFERCELL LOCATION 9	EACH	1.000				
X0900019	COFFERCELL LOC 10	EACH	1.000				
X0900020	THML INTGRTY PROF TST	EACH	4.000				

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X1400094	LUM LED HM LOW WATT	EACH	14.000				
X1400113	LUM LED HM MED WATT	EACH	9.000				
X1400114	LED LIGHT DIM CON SYS	L SUM	1.000				
X1400115	TEMP WATWY OBS WL SYS	L SUM	1.000				
X2010505	CLEARING SPECIAL	L SUM	1.000				
X2300006	BICYCLE RAILING PR MT	FOOT	4,974.000				
X2501845	SEEDING CL 7 SPL	ACRE	2.500				
X4060310	HMA SC "C" N50 SPL	TON	101.000				
X4400110	TEMP PAVT REMOVAL	SQ YD	3,879.000				
X4823029	HMA SHOULDERS 8 SPL	SQ YD	2,226.000				
X5121800	PERM STEEL SHT PILING	SQ FT	7,114.000				
X5210110	HLMR BRG GUID EXP 200	EACH	6.000				
X5210120	HLMR BRG GUID EXP 250	EACH	6.000				
X5210160	HLMR BRG GUID EXP 450	EACH	24.000				
X5210345	HLMR BRNG FIXED 550K	EACH	6.000				

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X5210355	HLMR BRNG FIXED 650K	EACH	12.000				
X550A576	TEMP SS CL A 2 24	FOOT	124.000				
X5860110	GRANULAR BACKFILL STR	CU YD	265.000				
X6024240	INLETS SPL	EACH	4.000				
X6024248	INLETS SPL N4	EACH	1.000				
X6024250	INLETS SPL N5	EACH	24.000				
X6026050	SANITARY MANHOLE ADJ	EACH	2.000				
X6028050	TEMPORARY MANHOLE	EACH	1.000				
X6028404	TEMP INLETS TA T1F OL	EACH	1.000				
X6062400	CONC GUTTER SPL	FOOT	1,386.000				
X6100120	TE INLT BX 610001 SPL	EACH	4.000				
X6330725	SPBGR (SHORT RADIUS)	FOOT	100.000				
X6640525	CH LK FENCE 4 ATT STR	FOOT	1,565.000				
X7040125	PIN TEMP CONC BARRIER	EACH	486.000				
X7230203	INSTALL SIGN PANEL T3	SQ FT	32.000				



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X7330064	SIGN SUPPORT SPL	EACH	5.000				
X7830060	GRV RCSD PM LTR & SYM	SQ FT	117.000				
X7830070	GRV RCSD PVT MRKG 5	FOOT	25,910.000				
X7830076	GRV RCSD PVT MRKG 9	FOOT	251.000				
X7830078	GRV RCSD PVT MRKG 13	FOOT	677.000				
X7830090	GRV RCSD PVT MRKG 25	FOOT	129.000				
X8110456	CON AT ST 1.5 SS	FOOT	80.000				
Z0005300	BOX CUL TO BE CLEANED	EACH	1.000				
Z0007118	UNTREATED TIMBER LAG	SQ FT	18,611.000				
Z0007601	BLDG REMOV NO 1	L SUM	1.000				
Z0013300	CONC REM SPEC	SQ YD	178.000				
Z0013797	STAB CONSTR ENTRANCE	SQ YD	500.000				
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.000				
Z0015500	DEBRIS REMOVAL	L SUM	1.000				
Z0018002	DRAINAGE SCUPPR DS-11	EACH	32.000				

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Z0023201	SED CONT SILT CURTAIN	EACH	6.000				
Z0025505	PROPERTY MARKERS	EACH	19.000				
Z0026403	FUR SOLDIER PILES BU	FOOT	4,427.000				
Z0026404	FUR SOLDIER PILES WS	FOOT	3,275.000				
Z0027800	GEOTECH FABRIC	SQ YD	4,471.000				
Z0028415	GEOTECHNICAL REINF	SQ YD	9,560.000				
Z0034398	MODULAR EXPAN JT 15	FOOT	40.000				
Z0034500	MODULAR EXPAN JT 18	FOOT	40.000				
Z0046304	P UNDR FOR STRUCT 4	FOOT	1,723.000				
Z0048665	RR PROT LIABILITY INS	L SUM	1.000				
Z0049901	R&D NON-FR ASB BLD 1	L SUM	1.000				
Z0054400	ROCK FILL	CU YD	7,284.000				
Z0056610	STORM SEW WM REQ 15	FOOT	117.000				
Z0056628	STORM SEW WM REQ 54	FOOT	47.000				
Z0062456	TEMP PAVEMENT	SQ YD	3,879.000				

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Z0062458	TEMP PAVEMT VAR DEPTH	TON	245.000				
Z0073002	TEMP SOIL RETEN SYSTM	SQ FT	14,512.000				
Z0075496	CONC RETAIN WALL REM	FOOT	799.000				
Z0076600	TRAINEES	HOUR	4,000.000		0.800		3,200.000
Z0076604	TRAINEES TPG	HOUR	4,000.000		15.000		60,000.000
20100110	TREE REMOV 6-15	UNIT	474.000				
20100210	TREE REMOV OVER 15	UNIT	271.000				
20100500	TREE REMOV ACRES	ACRE	3.250				
20101100	TREE TRUNK PROTECTION	EACH	10.000				
20101350	TREE PRUN OVER 10	EACH	10.000				
20200100	EARTH EXCAVATION	CU YD	33,040.000				
20200200	ROCK EXCAVATION	CU YD	541.000				
20201200	REM & DISP UNS MATL	CU YD	12,980.000				
20400800	FURNISHED EXCAVATION	CU YD	6,372.000				
20600110	GRAN EMBANK SPEC	TON	1,806.000				

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Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
20800150	TRENCH BACKFILL	CU YD	1,365.000				
21101615	TOPSOIL F & P 4	SQ YD	23,025.000				
21301052	EXPLOR TRENCH 52	FOOT	500.000				
21400100	GRADING & SHAP DITCH	FOOT	95.000				
25000100	SEEDING CL 1	ACRE	1.750				
25000312	SEEDING CL 4A	ACRE	2.500				
25000400	NITROGEN FERT NUTR	POUND	413.000				
25000500	PHOSPHORUS FERT NUTR	POUND	413.000				
25000600	POTASSIUM FERT NUTR	POUND	413.000				
25000750	MOWING	ACRE	7.500				
25100125	MULCH METHOD 3	ACRE	8.000				
25100630	EROSION CONTR BLANKET	SQ YD	5,961.000				
25100900	TURF REINF MAT	SQ YD	11,653.000				
25200110	SODDING SALT TOLERANT	SQ YD	2,457.000				
25200200	SUPPLE WATERING	UNIT	22.100				

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28000250	TEMP EROS CONTR SEED	POUND	3,517.000				
28000305	TEMP DITCH CHECKS	FOOT	30.000				
28000400	PERIMETER EROS BAR	FOOT	4,843.000				
28000500	INLET & PIPE PROTECT	EACH	37.000				
28100107	STONE RIPRAP CL A4	SQ YD	681.000				
28100109	STONE RIPRAP CL A5	SQ YD	10,467.000				
28100201	STONE RIPRAP CL A1	TON	2,403.000				
28100209	STONE RIPRAP CL A5	TON	18,011.000				
28200200	FILTER FABRIC	SQ YD	14,668.000				
28500400	ARTICUL BLOCK REV MAT	SQ YD	444.000				
30300112	AGG SUBGRADE IMPR 12	SQ YD	23,371.000				
30300124	AGG SUBGRADE IMPR 24	SQ YD	1,244.000				
31101900	SUB GRAN MAT C	TON	367.000				
35102000	AGG BASE CSE B 8	SQ YD	166.000				
40200800	AGG SURF CSE B	TON	374.000				

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Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
40201000	AGGREGATE-TEMP ACCESS	TON	241.000				
40600275	BIT MATLS PR CT	POUND	106,523.000				
40603310	HMA SC "C" N50	TON	367.000				
40701871	HMA PAVT FD 9 1/2	SQ YD	4,275.000				
40701876	HMA PAVT FD 9 3/4	SQ YD	8,461.000				
40800050	INCIDENTAL HMA SURF	TON	19.000				
42001300	PROTECTIVE COAT	SQ YD	1,931.000				
42001430	BR APPR PVT CON (FLX)	SQ YD	777.000				
42300300	PCC DRIVEWAY PAVT 7	SQ YD	470.000				
42400200	PC CONC SIDEWALK 5	SQ FT	3,387.000				
42400800	DETECTABLE WARNINGS	SQ FT	57.000				
44000100	PAVEMENT REM	SQ YD	10,827.000				
44000200	DRIVE PAVEMENT REM	SQ YD	2,333.000				
44000500	COMB CURB GUTTER REM	FOOT	2,696.000				
44000600	SIDEWALK REM	SQ FT	3,078.000				

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Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
44004250	PAVED SHLD REMOVAL	SQ YD	3,131.000				
44201717	CL D PATCH T2 6	SQ YD	150.000				
44201721	CL D PATCH T3 6	SQ YD	150.000				
44201723	CL D PATCH T4 6	SQ YD	175.000				
48101600	AGGREGATE SHLDS B 8	SQ YD	1,379.000				
48203021	HMA SHOULDERS 6	SQ YD	3,395.000				
50100100	REM EXIST STRUCT	EACH	1.000				
50157300	PROTECTIVE SHIELD	SQ YD	1,792.000				
50200100	STRUCTURE EXCAVATION	CU YD	4,127.000				
50200300	COFFERDAM EXCAVATION	CU YD	2,023.000				
50200400	ROCK EXC STRUCT	CU YD	46.000				
50201121	COFFERDAM TYP 2 LOC 1	EACH	1.000				
50201122	COFFERDAM TYP 2 LOC 2	EACH	1.000				
50201123	COFFERDAM TYP 2 LOC 3	EACH	1.000				
50201124	COFFERDAM TYP 2 LOC 4	EACH	1.000				

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Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
50300225	CONC STRUCT	CU YD	8,759.900				
50300255	CONC SUP-STR	CU YD	3,717.000				
50300260	BR DECK GROOVING	SQ YD	10,807.000				
50300265	SEAL COAT CONC	CU YD	674.200				
50300280	CONCRETE ENCASEMENT	CU YD	8.000				
50300285	FORM LINER TEX SURF	SQ FT	25,352.000				
50300300	PROTECTIVE COAT	SQ YD	16,487.000				
50500105	F & E STRUCT STEEL	L SUM	1.000				
50500505	STUD SHEAR CONNECTORS	EACH	48,473.000				
50800105	REINFORCEMENT BARS	POUND	975,181.000				
50800205	REINF BARS, EPOXY CTD	POUND	2,105,460.000				
50800515	BAR SPLICERS	EACH	98.000				
50800530	MECHANICAL SPLICERS	EACH	1,696.000				
51200959	FUR M S PILE 14X0.312	FOOT	9,318.000				
51201600	FUR STL PILE HP12X53	FOOT	441.000				



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Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
51202305	DRIVING PILES	FOOT	9,759.000				
51203200	TEST PILE MET SHELLS	EACH	10.000				
51203600	TEST PILE ST HP12X53	EACH	2.000				
51204650	PILE SHOES	EACH	23.000				
51500100	NAME PLATES	EACH	2.000				
51602000	PERMANENT CASING	FOOT	2,191.000				
51603000	DRILLED SHAFT IN SOIL	CU YD	3,959.700				
51604000	DRILLED SHAFT IN ROCK	CU YD	690.300				
52000110	PREF JT STRIP SEAL	FOOT	99.500				
52100010	ELAST BEARING ASSY T1	EACH	96.000				
52100020	ELAST BEARING ASSY T2	EACH	14.000				
52100510	ANCHOR BOLTS 3/4	EACH	168.000				
52100530	ANCHOR BOLTS 1 1/4	EACH	52.000				
52100540	ANCHOR BOLTS 1 1/2	EACH	48.000				
52100560	ANCHOR BOLTS 2	EACH	20.000				

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Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
54002070	EXPAN BOLTS 3/4 X 15	EACH	4.000				
54213447	END SECTIONS 12	EACH	1.000				
54244405	FL INLT BX MED 542546	EACH	1.000				
54248510	CONCRETE COLLAR	CU YD	1.000				
54260311	TRAVERS PIPE GRATE	FOOT	62.000				
54261315	CONC ES 542001 15 1:3	EACH	1.000				
54261318	CONC ES 542001 18 1:3	EACH	1.000				
54261324	CONC ES 542001 24 1:3	EACH	1.000				
54261336	CONC ES 542001 36 1:3	EACH	2.000				
54261354	CONC ES 542001 54 1:3	EACH	1.000				
550A0050	STORM SEW CL A 1 12	FOOT	30.000				
550A0070	STORM SEW CL A 1 15	FOOT	95.000				
550A0120	STORM SEW CL A 1 24	FOOT	23.000				
550A0340	STORM SEW CL A 2 12	FOOT	165.000				
550A0360	STORM SEW CL A 2 15	FOOT	509.000				

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Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
550A0380	STORM SEW CL A 2 18	FOOT	883.000				
550A0410	STORM SEW CL A 2 24	FOOT	796.000				
550A0450	STORM SEW CL A 2 36	FOOT	58.000				
550A0490	STORM SEW CL A 2 54	FOOT	78.000				
55100500	STORM SEWER REM 12	FOOT	28.000				
55100900	STORM SEWER REM 18	FOOT	75.000				
55101900	STORM SEWER REM 48	FOOT	236.000				
56100600	WATER MAIN 6	FOOT	50.000				
56100700	WATER MAIN 8	FOOT	30.000				
56200200	WATER SERV LINE 3/4	FOOT	122.000				
56400500	FIRE HYDNITS TO BE REM	EACH	1.000				
56400600	FIRE HYDRANTS	EACH	1.000				
58700300	CONCRETE SEALER	SQ FT	20,218.000				
59100100	GEOCOMPOSITE WALL DR	SQ YD	1,564.000				
60100080	FRENCH DRAINS	CU YD	6.000				

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Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
60100945	PIPE DRAINS 12	FOOT	11.000				
60107600	PIPE UNDERDRAINS 4	FOOT	2,198.000				
60108100	PIPE UNDERDRAIN 4 SP	FOOT	174.000				
60218400	MAN TA 4 DIA T1F CL	EACH	13.000				
60221100	MAN TA 5 DIA T1F CL	EACH	1.000				
60224459	MAN TA 8 DIA T1F CL	EACH	1.000				
60224469	MAN TA 9 DIA T1F CL	EACH	2.000				
60266600	VALVE BOX ADJ	EACH	4.000				
60500060	REMOV INLETS	EACH	4.000				
60605000	COMB CC&G TB6.24	FOOT	1,206.500				
60608582	COMB CC&G TM4.24	FOOT	1,882.500				
60615400	PAVED DITCH TA-15	FOOT	47.000				
60622320	CONC MED TSM4.24	SQ FT	1,008.000				
60900515	CONC THRUST BLOCKS	EACH	12.000				
63000001	SPBGR TY A 6FT POSTS	FOOT	3,587.500				

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Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
63000009	SPBGR TY B 9FT POSTS	FOOT	250.000				
63000370	LSG OVER CUL 25' SPAN	FOOT	350.000				
63100045	TRAF BAR TERM T2	EACH	1.000				
63100085	TRAF BAR TERM T6	EACH	4.000				
63100167	TR BAR TRM T1 SPL TAN	EACH	2.000				
63200310	GUARDRAIL REMOV	FOOT	4,158.000				
66600105	FUR ERECT ROW MARKERS	EACH	2.000				
66700305	PERM SURV MKRS T2	EACH	2.000				
66900200	NON SPL WASTE DISPOSL	CU YD	7,400.000				
66900450	SPL WASTE PLNS/REPORT	L SUM	1.000				
66900530	SOIL DISPOSAL ANALY	EACH	6.000				
67000400	ENGR FIELD OFFICE A	CAL MO	30.000				
67000600	ENGR FIELD LAB	CAL MO	30.000				
67100100	MOBILIZATION	L SUM	1.000				
70100100	TRAF CONT-PROT 701316	EACH	5.000				

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Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
70100200	TRAF CONT-PROT 701331	EACH	5.000				
70100450	TRAF CONT-PROT 701201	L SUM	1.000				
70100500	TRAF CONT-PROT 701326	L SUM	1.000				
70102620	TR CONT & PROT 701501	L SUM	1.000				
70102635	TR CONT & PROT 701701	L SUM	1.000				
70102640	TR CONT & PROT 701801	L SUM	1.000				
70103815	TR CONT SURVEILLANCE	CAL DA	175.000				
70106500	TEMP BR TRAF SIGNALS	EACH	5.000				
70106700	TEMP RUMBLE STRIPS	EACH	12.000				
70106800	CHANGEABLE MESSAGE SN	CAL MO	9.000				
70300100	SHORT TERM PAVT MKING	FOOT	1,464.000				
70300220	TEMP PVT MK LINE 4	FOOT	52,208.000				
70300280	TEMP PVT MK LINE 24	FOOT	287.000				
70301000	WORK ZONE PAVT MK REM	SQ FT	17,781.000				
70400100	TEMP CONC BARRIER	FOOT	1,525.000				

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70400200	REL TEMP CONC BARRIER	FOOT	612.500				
70500100	TEMP SPBGR TY A	FOOT	337.000				
70500615	TEMP TR BAR TERM T1	EACH	3.000				
70500690	TEMP TR BAR TERM T11	EACH	3.000				
70600240	IMP ATTN TEMP NRD TL2	EACH	1.000				
70600255	IMP ATTN TEMP FRN TL2	EACH	3.000				
70600260	IMP ATTN TEMP FRN TL3	EACH	1.000				
70600322	IMP ATTN REL FRN TL2	EACH	4.000				
70600332	IMP ATTN REL FRN TL3	EACH	3.000				
70600340	IMP ATTN REL NRD TL2	EACH	1.000				
72000100	SIGN PANEL T1	SQ FT	506.000				
72000200	SIGN PANEL T2	SQ FT	148.000				
72400100	REMOV SIN PAN ASSY TA	EACH	45.000				
72400200	REMOV SIN PAN ASSY TB	EACH	17.000				
72800100	TELES STL SIN SUPPORT	FOOT	784.000				

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73000100	WOOD SIN SUPPORT	FOOT	210.000				
73100100	BASE TEL STL SIN SUPP	EACH	2.000				
78008200	POLYUREA PM T1 LTR-SY	SQ FT	117.000				
78008210	POLYUREA PM T1 LN 4	FOOT	25,910.000				
78008240	POLYUREA PM T1 LN 8	FOOT	251.000				
78008250	POLYUREA PM T1 LN 12	FOOT	677.000				
78008270	POLYUREA PM T1 LN 24	FOOT	129.000				
78100100	RAISED REFL PAVT MKR	EACH	85.000				
78200300	PRISMATIC CURB REFL	EACH	16.000				
78200420	GUARDRAIL MKR TYPE B	EACH	65.000				
78200520	BAR WALL MKR TYPE B	EACH	62.000				
78201000	TERMINAL MARKER - DA	EACH	5.000				
78300100	PAVT MARKING REMOVAL	SQ FT	3,412.000				
80400100	ELECT SERV INSTALL	EACH	1.000				
81028770	UNDRGRD C CNC 3	FOOT	240.000				



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81100500	CON AT ST 1 1/2 GALVS	FOOT	3,330.000				
81200230	CON EMB STR 2 PVC	FOOT	3,835.000				
81300520	JUN BX SS AS 12X8X6	EACH	26.000				
81300530	JUN BX SS AS 12X10X6	EACH	10.000				
81300555	JUN BX SS AS 12X12X8	EACH	9.000				
81300720	JUN BX SS AS 16X12X8	EACH	2.000				
81603000	UD 2#8 #8G XLP USE 3/4	FOOT	1,500.000				
81603040	UD 2#6 #8G XLP USE 1	FOOT	70.000				
81603080	UD 3#2#4G XLP USE 1 1/4	FOOT	250.000				
81702120	EC C XLP USE 1C 8	FOOT	7,580.000				
81702130	EC C XLP USE 1C 6	FOOT	7,720.000				
81702140	EC C XLP USE 1C 4	FOOT	5,820.000				
81702150	EC C XLP USE 1C 2	FOOT	3,060.000				
82200605	WATWY OBS WARN LM LED	EACH	6.000				
82500390	LT CONT BASM 240V100D	EACH	1.000				

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83001200	LT P A 35MH 6DA	EACH	14.000				
83003600	LT P A 45MH 15DA	EACH	9.000				
83600355	LP F M 15BC 8" X 6'	EACH	9.000				
83800650	BKWY DEV COU SS SCR N	EACH	8.000				
84200600	REM LT U NO SALV	EACH	13.000				
84200804	REM POLE FDN	EACH	1.000				
84301100	REM NAV OBS WL UNIT	EACH	6.000				
84500110	REMOV LIGHTING CONTR	EACH	1.000				
84500120	REMOV ELECT SERV INST	EACH	2.000				

**CONTRACT NUMBER**

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**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 Code establishes the duty of all State CPOs, SPOs, 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. Except as otherwise required in subsection III, paragraphs J-M, by execution of the Proposal Signature Sheet, the bidder indicates that each of the mandated assurances have 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 the CPO to void the contract, and may result in the suspension or debarment of the bidder or subcontractor. If a false certification is made by a subcontractor the contractor's submitted bid and the executed contract may not be declared void unless the contractor refuses to terminate the subcontract upon the State's request after a finding that the subcontractor's certification was false.

I acknowledge, understand and accept these terms and conditions.

#### **II. ASSURANCES**

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.

##### **A. Conflicts of Interest**

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 State 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 State 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 calendar days after the officer, member, or employee takes office or is employed. The current salary of the Governor is \$177,412.00. Sixty percent of the salary is \$106,447.20.

## RETURN WITH BID

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. Information concerning the exemption process is available from the Department upon request.

### **B. Negotiations**

Section 50-15. Negotiations.

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.

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.

### **C. Inducements**

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 provide a submission to a vendor portal or 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, not making a submission to a vendor portal, or who withholds a bid or submission to a vendor portal in consideration of the promise for the payment of money or other valuable thing is guilty of a Class 4 felony.

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.

### **D. Revolving Door Prohibition**

Section 50-30. Revolving door prohibition.

CPOs, SPOs, procurement compliance monitors, 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.

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.

### **E. Reporting Anticompetitive Practices**

Section 50-40. Reporting anticompetitive practices.

When, for any reason, any vendor, bidder, contractor, CPO, SPO, 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 CPO.

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 or submission to a vendor portal is submitted.

### **F. Confidentiality**

Section 50-45. Confidentiality.

Any CPO, SPO, 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.

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

### **G. Insider Information**

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.

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.

I acknowledge, understand and accept these terms and conditions for the above assurances.

### **III. CERTIFICATIONS**

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. Section 50-2 of the Code provides that every person that has entered into a multi-year contract and every subcontractor with a multi-year subcontract shall certify, by July 1 of each fiscal year covered by the contract after the initial fiscal year, to the responsible CPO whether it continues to satisfy the requirements of Article 50 pertaining to the eligibility for a contract award. If a contractor or subcontractor is not able to truthfully certify that it continues to meet all requirements, it shall provide with its certification a detailed explanation of the circumstances leading to the change in certification status. A contractor or subcontractor that makes a false statement material to any given certification required under Article 50 is, in addition to any other penalties or consequences prescribed by law, subject to liability under the Whistleblower Reward and Protection Act for submission of a false claim.

#### **A. Bribery**

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, or subcontracting under such a contract, 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, or which is signatory to the contract which the subcontract relates, 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 2012.

(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, and every subcontract subject to Section 20-120 of the Code shall contain a certification by the contractor or the subcontractor, respectively, that the contractor or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any certifications required by this Section are false. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

The contractor or subcontractor certifies that it is not barred from being awarded a contract under Section 50-5.

#### **B. Felons**

Section 50-10. Felons.

(a) Unless otherwise provided, no person or business convicted of a felony shall do business with the State of Illinois or any State agency, or enter into a subcontract, 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.

(b) Certification. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code and every vendor's submission to a vendor portal shall contain a certification by the bidder or contractor or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any of the certifications required by this Section are false.

## RETURN WITH BID

### **C. Debt Delinquency**

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

The contractor or bidder or subcontractor, respectively, certifies that it, or any affiliate, is not barred from being awarded a contract or subcontract under the Code. Section 50-11 prohibits a person from entering into a contract with a State agency, or entering into a subcontract, 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, or entering into a subcontract, 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 bidder or contractor or subcontractor, respectively, further acknowledges that the CPO may declare the related contract void if this certification is false or if the bidder, contractor, or subcontractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

### **D. Prohibited Bidders, Contractors and Subcontractors**

Section 50-10.5 and 50-60(c). Prohibited bidders, contractors and subcontractors.

The bidder or contractor or subcontractor, respectively, certifies in accordance with Section 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 or if in violation of Subsection (c) for a period of five years from the date of conviction. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code shall contain a certification by the bidder, contractor, or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO shall declare the related contract void if any of the certifications completed pursuant to this Section are false.

### **E. Section 42 of the Environmental Protection Act**

Section 50-14 Environmental Protection Act violations.

The bidder or contractor or subcontractor, respectively, certifies in accordance with Section 50-14 that the bidder, contractor, or subcontractor, is not barred from being awarded a contract or entering into a subcontract under this Section which prohibits the bidding on or entering into contracts with the State of Illinois or a State agency, or entering into any subcontract, that is subject to the Code 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 bidder or contractor or subcontractor, respectively, acknowledges that the CPO may declare the contract void if this certification is false.

### **F. Educational Loan**

Section 3 of the Educational Loan Default Act, 5 ILCS 385/3.

Pursuant to the Educational Loan Default Act no State agency shall contract with an individual for goods or services if that individual is in default on an educational loan.

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.

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

Section 33E-11 of the Criminal Code of 2012, 720 ILCS 5/3BE-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.

(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.

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.

## RETURN WITH BID

### H. International Anti-Boycott

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

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

### I. Drug Free Workplace

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.

The bidder certifies that if awarded a contract in excess of \$5,000 it will provide a drug free workplace in compliance with the provisions of the Act.

### J. Disclosure of Business Operations in Iran

Section 50-36 of the Code provides that each bid, offer, or proposal submitted for a State contract shall include a disclosure of whether or not the Company acting as the bidder, offeror, or proposing entity, or any of its corporate parents or subsidiaries, within the 24 months before submission of the bid, offer, or proposal had business operations that involved contracts with or provision of supplies or services to the Government of Iran, companies in which the Government of Iran has any direct or indirect equity share, consortiums or projects commissioned by the Government of Iran, or companies involved in consortiums or projects commissioned by the Government of Iran and either of the following conditions apply:

- (1) More than 10% of the Company's revenues produced in or assets located in Iran involve oil-related activities or mineral-extraction activities; less than 75% of the Company's revenues produced in or assets located in Iran involve contracts with or provision of oil-related or mineral-extraction products or services to the Government of Iran or a project or consortium created exclusively by that government; and the Company has failed to take substantial action.
- (2) The Company has, on or after August 5, 1996, made an investment of \$20 million or more, or any combination of investments of at least \$10 million each that in the aggregate equals or exceeds \$20 million in any 12-month period, which directly or significantly contributes to the enhancement of Iran's ability to develop petroleum resources of Iran.

The terms "Business operations", "Company", "Mineral-extraction activities", "Oil-related activities", "Petroleum resources", and "Substantial action" are all defined in the Code.

Failure to make the disclosure required by the Code may cause the bid, offer or proposal to be considered not responsive. The disclosure will be considered when evaluating the bid or awarding the contract. The name of each Company disclosed as doing business or having done business in Iran will be provided to the State Comptroller.

Check the appropriate statement:

Company has no business operations in Iran to disclose.

Company has business operations in Iran as disclosed on the attached document.



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

In accordance with the provisions of Section 30-22 (6) of the 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.**

Additionally, Section 30-22 of the Code requires that the bidder certify that an Illinois office be maintained as the primary place of employment for persons employed for this contract.

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The requirements of these certifications and disclosures are a material part of the contract, and the contractor shall require these certification provisions 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.

**RETURN WITH BID**

**L. Political Contributions and Registration with the State Board of Elections**

Sections 20-160 and 50-37 of the Code regulate political contributions from business entities and any affiliated entities or affiliated persons bidding on or contracting with the state. Generally under Section 50-37, any business entity, and any affiliated entity or affiliated person of the business entity, whose current year contracts with all state agencies exceed an awarded value of \$50,000, are prohibited from making any contributions to any political committees established to promote the candidacy of the officeholder responsible for the awarding of the contracts or any other declared candidate for that office for the duration of the term of office of the incumbent officeholder or a period 2 years after the termination of the contract, whichever is longer. Any business entity and affiliated entities or affiliated persons whose state contracts in the current year do not exceed an awarded value of \$50,000, but whose aggregate pending bids and proposals on state contracts exceed \$50,000, either alone or in combination with contracts not exceeding \$50,000, are prohibited from making any political contributions to any political committee established to promote the candidacy of the officeholder responsible for awarding the pending contract during the period beginning on the date the invitation for bids or request for proposals or any other procurement opportunity is issued and ending on the day after the date of award or selection if the entity was not awarded or selected. Section 20-160 requires certification of registration of affected business entities in accordance with procedures found in Section 9-35 of The Election Code.

By submission of a bid, the contractor business entity acknowledges and agrees that it has read and understands Sections 20-160 and 50-37 of the Code, and that it makes the following certification:

**The undersigned bidder certifies that it has registered as a business with the State Board of Elections and acknowledges a continuing duty to update the registration in accordance with the above referenced statutes. If the business entity is required to register, the CPO shall verify that it is in compliance on the date the bid or proposal is due. The CPO shall not accept a bid or proposal if the business entity is not in compliance with the registration requirements.**

These requirements and compliance with the above referenced statutory sections are a material part of the contract, and any breach thereof shall be cause to void the contract under Section 50-60 of the Code. This provision does not apply to Federal-aid contracts.

**M. Lobbyist Disclosure**

Section 50-38 of the Code requires that any bidder or offeror on a State contract that hires a person required to register under the Lobbyist Registration Act to assist in obtaining a contract shall:

- (i) Disclose all costs, fees, compensation, reimbursements, and other remunerations paid or to be paid to the lobbyist related to the contract,
- (ii) Not bill or otherwise cause the State of Illinois to pay for any of the lobbyist's costs, fees, compensation, reimbursements, or other remuneration, and
- (iii) Sign a verification certifying that none of the lobbyist's costs, fees, compensation, reimbursements, or other remuneration were billed to the State.

This information, along with all supporting documents, shall be filed with the agency awarding the contract and with the Secretary of State. The CPO shall post this information, together with the contract award notice, in the online Procurement Bulletin.

Pursuant to Subsection (c) of this Section, no person or entity shall retain a person or entity to attempt to influence the outcome of a procurement decision made under the Code for compensation contingent in whole or in part upon the decision or procurement. Any person who violates this subsection is guilty of a business offense and shall be fined not more than \$10,000.

Bidder acknowledges that it is required to disclose the hiring of any person required to register pursuant to the Illinois Lobbyist Registration Act (25 ILCS 170) in connection with this contract.

Bidder has not hired any person required to register pursuant to the Illinois Lobbyist Registration Act in connection with this contract.

Or

Bidder has hired the following persons required to register pursuant to the Illinois Lobbyist Registration Act in connection with the contract:

Name and address of person: \_\_\_\_\_  
All costs, fees, compensation, reimbursements and other remuneration paid to said person: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I acknowledge, understand and accept these terms and conditions for the above certifications.

## RETURN 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 bidder further certifies that the Department has received the disclosure forms for each bid.

The CPO may void the bid, or contract, respectively, if it is later determined that the bidder or subcontractor rendered a false or erroneous disclosure. A contractor or subcontractor may be suspended or debarred for violations of the Code. Furthermore, the CPO may void the contract 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 Code provides that all bids of more than \$50,000 and all submissions to a vendor portal 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, filed with the Procurement Policy Board, and shall be incorporated as a material term of the contract. Furthermore, pursuant to Section 5-5, the Procurement Policy Board may review a proposal, bid, or contract and issue a recommendation to void a contract or reject a proposal or bid based on any violation of the Code or the existence of a conflict of interest as provided in subsections (b) and (d) of Section 50-35.

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 100 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any individual 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 individual 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 individual making the disclosure having any of the relationships identified in Section 50-35 and on the disclosure form.

**The current annual salary of the Governor is \$177,412.00.**

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. A separate Disclosure Form A must be submitted with the bid for each individual meeting the above requirements. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies and a total ownership certification. **The forms must be included with each bid.**

### C. Disclosure Form Instructions

#### Form A Instructions for Financial Information & Potential Conflicts of Interest

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 100 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any individual 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 Form A must be signed and dated by an individual 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 60% of the annual salary of the Governor? YES \_\_\_ NO \_\_\_
3. Does anyone in your organization receive more than 60% of the annual salary of the Governor of the bidding entity's or parent entity's 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 60% of the annual salary of the Governor? YES \_\_\_ NO \_\_\_

(Note: Only one set of forms needs to be completed per individual 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 an individual that is authorized to execute contracts for your organization. The individual signing can be, but does not have to be, the individual 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 of Form A must be signed and dated by an individual that is authorized to execute contracts for your company.

## RETURN WITH BID

### **Form B: Instructions for Identifying Other Contracts & Procurement Related Information**

Disclosure Form B must be completed for each bid submitted by the bidding entity. *Note: Checking the NOT APPLICABLE STATEMENT on Form A does not allow the bidder to ignore Form B. Form B must be completed, checked, 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 check 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.

RETURN WITH BID

**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 Section 50-35 of the 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 \$50,000, 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.**

*The current annual salary of the Governor is \$177,412.00.*

**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 60% of the annual salary of the Governor. **(Make copies of this form as necessary and attach a separate Disclosure Form A for each individual meeting these requirements)**

<b>FOR INDIVIDUAL (type or print information)</b>	
<b>NAME:</b>	_____
<b>ADDRESS</b>	_____
<b>Type of ownership/distributable income share:</b>	
stock _____	sole proprietorship _____
Partnership _____	other: (explain on separate sheet): _____
% or \$ value of ownership/distributable income share: _____	

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

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

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

- Are you currently an officer or employee of either the Capitol Development Board or the Illinois State Toll Highway Authority? Yes \_\_\_ No \_\_\_
- Are you currently appointed to or employed by any agency of the State of Illinois? If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor provide the name the State agency for which you are employed and your annual salary. \_\_\_\_\_

**RETURN WITH BID**

3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, 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 100% of the annual 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 60% of the annual salary of the Governor, 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 two times the salary of the Governor? Yes \_\_\_ No \_\_\_

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

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

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

1. Is your spouse or any minor children currently an officer or employee of the Capitol Development Board or the Illinois State 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 60% of the annual salary of the Governor, 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 60% of the annual salary of the Governor, 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 100% of the annual 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 60% of the annual salary of the Governor, 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 two 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**

(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 \_\_\_

---

**3. Communication Disclosure.**

Disclose the name and address of each lobbyist and other agent of the bidder or offeror who is not identified in Section 2 of this form, who is has communicated, is communicating, or may communicate with any State officer or employee concerning the bid or offer. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the process and throughout the term of the contract. If no person is identified, enter "None" on the line below:

Name and address of person(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RETURN WITH BID**

**4. Debarment Disclosure.** For each of the persons identified under Sections 2 and 3 of this form, disclose whether any of the following has occurred within the previous 10 years: debarment from contracting with any governmental entity; professional licensure discipline; bankruptcies; adverse civil judgments and administrative findings; and criminal felony convictions. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the procurement process and term of the contract. If no person is identified, enter "None" on the line below:

Name of person(s): \_\_\_\_\_

Nature of disclosure: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**APPLICABLE STATEMENT**

**This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page. Under penalty of perjury, I certify the contents of this disclosure to be true and accurate to the best of my knowledge.**

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

**NOT APPLICABLE STATEMENT**

**Under penalty of perjury, 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.**

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

The bidder has a continuing obligation to supplement these disclosures under Sec. 50-35 of the Code.



RETURN WITH BID

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form B Other Contracts & Financial 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 Section 50-35 of the Code (30 ILCS 500). This information shall become part of the publicly available contract file. This Form B must be completed for all bids.

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 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 CHECKED

Signature of Authorized Representative, Date

OWNERSHIP CERTIFICATION

Please certify that the following statement is true if the individuals for all submitted Form A disclosures do not total 100% of ownership.

Any remaining ownership interest is held by individuals receiving less than \$106,447.20 of the bidding entity's or parent entity's distributive income or holding less than a 5% ownership interest.

Yes No N/A (Form A disclosure(s) established 100% ownership)

## **RETURN WITH BID**

### **SPECIAL NOTICE TO CONTRACTORS**

The following requirements of the Illinois Department of Human Rights Act 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 Title 44, Illinois Administrative Code, Section 750.120. 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. 64G59  
CARROLL County  
Section 104 B-2  
Project ACNHPP-0017(132)  
Route FAP 17  
District 2 Construction Funds**

**PART II. WORKFORCE PROJECTION - continued**

- B. Included in "Total Employees" under Table A is the total number of **new hires** that would be employed in the event the undersigned bidder is awarded this contract.

The undersigned bidder projects that: (number) \_\_\_\_\_ new hires would be recruited from the area in which the contract project is located; and/or (number) \_\_\_\_\_ new hires would be recruited from the area in which the bidder's principal office or base of operation is located.

- C. Included in "Total Employees" under Table A is a projection of numbers of persons to be employed directly by the undersigned bidder as well as a projection of numbers of persons to be employed by subcontractors.

The undersigned bidder estimates that (number) \_\_\_\_\_ persons will be directly employed by the prime contractor and that (number) \_\_\_\_\_ persons will be employed by subcontractors.

**PART III. AFFIRMATIVE ACTION PLAN**

- A. The undersigned bidder understands and agrees that in the event the foregoing minority and female employee utilization projection included under **PART II** is determined to be an underutilization of minority persons or women in any job category, and in the event that the undersigned bidder is awarded this contract, he/she will, prior to commencement of work, develop and submit a written Affirmative Action Plan including a specific timetable (geared to the completion stages of the contract) whereby deficiencies in minority and/or female employee utilization are corrected. Such Affirmative Action Plan will be subject to approval by the contracting agency and the **Illinois 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. 64G59  
CARROLL County  
Section 104 B-2  
Project ACNHPP-0017(132)  
Route FAP 17  
District 2 Construction Funds**

PROPOSAL SIGNATURE SHEET

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

(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.



This Annual Proposal Bid Bond shall become effective at 12:01 AM (CDST) on \_\_\_\_\_ and shall be valid until \_\_\_\_\_ 11:59 PM (CDST).

KNOW ALL PERSONS BY THESE PRESENTS, That We \_\_\_\_\_

as PRINCIPAL, and \_\_\_\_\_

as SURETY, 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 the bid proposal under "Proposal Guaranty" in effect on the date of the 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 may submit bid proposal(s) to the STATE OF ILLINOIS, acting through the Department of Transportation, for various improvements published in the Transportation Bulletin during the effective term indicated above.

NOW, THEREFORE, if the Department shall accept the bid proposal(s) of the PRINCIPAL; and if the PRINCIPAL shall, within the time and as specified in the bidding and contract documents; 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 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 has caused this instrument to be signed by its officer \_\_\_\_\_ day of \_\_\_\_\_ A.D., \_\_\_\_\_.

In TESTIMONY WHEREOF, the said SURETY has caused this instrument to be signed by its officer \_\_\_\_\_ day of \_\_\_\_\_ A.D., \_\_\_\_\_.

\_\_\_\_\_  
(Company Name)

\_\_\_\_\_  
(Company Name)

By \_\_\_\_\_  
(Signature and Title)

By \_\_\_\_\_  
(Signature of Attorney-in-Fact)

**Notary for PRINCIPAL**

**Notary for SURETY**

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

Signed and attested before me on \_\_\_\_\_ (date)

Signed and attested before me on \_\_\_\_\_ (date)

by \_\_\_\_\_  
(Name of Notary Public)

by \_\_\_\_\_  
(Name of Notary Public)

(Seal) \_\_\_\_\_  
(Signature of Notary Public)

(Seal) \_\_\_\_\_  
(Signature of Notary Public)

\_\_\_\_\_  
(Date Commission Expires)

\_\_\_\_\_  
(Date Commission Expires)

In lieu of completing the above section of the Annual Proposal Bid Bond form, the Principal may file an Electronic Bid Bond. By signing the proposal(s) 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.

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Electronic Bid Bond ID #	Company/Bidder Name	Signature and Title
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This bond may be terminated, at Surety's request, upon giving not less than thirty (30) days prior written notice of the cancellation/termination of the bond. Said written notice shall be issued to the Illinois Department of Transportation, Chief Contracts Official, 2300 South Dirksen Parkway, Springfield, Illinois, 62764, and shall be served in person, by receipted courier delivery or certified or registered mail, return receipt requested. Said notice period shall commence on the first calendar day following the Department's receipt of written cancellation/termination notice. Surety shall remain firmly bound to all obligations herein for proposals submitted prior to the cancellation/termination. Surety shall be released and discharged from any obligation(s) for proposals submitted for any letting or date after the effective date of cancellation/termination.





Item No. \_\_\_\_\_

Letting Date \_\_\_\_\_

KNOW ALL PERSONS BY THESE PRESENTS, That We \_\_\_\_\_

as PRINCIPAL, and \_\_\_\_\_

as SURETY, 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 the bid proposal under "Proposal Guaranty" in effect on the date of the 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; 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 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 has caused this instrument to be signed by its officer \_\_\_\_\_ day of \_\_\_\_\_ A.D., \_\_\_\_\_

In TESTIMONY WHEREOF, the said SURETY has caused this instrument to be signed by its officer \_\_\_\_\_ day of \_\_\_\_\_ A.D., \_\_\_\_\_

\_\_\_\_\_  
(Company Name)

\_\_\_\_\_  
(Company Name)

By \_\_\_\_\_  
(Signature and Title)

By \_\_\_\_\_  
(Signature of Attorney-in-Fact)

**Notary for PRINCIPAL**

**Notary for SURETY**

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

Signed and attested before me on \_\_\_\_\_ (date)  
by \_\_\_\_\_

Signed and attested before me on \_\_\_\_\_ (date)  
by \_\_\_\_\_

(Name of Notary Public)

(Name of Notary Public)

(Seal) \_\_\_\_\_  
(Signature of Notary Public)

(Seal) \_\_\_\_\_  
(Signature of Notary Public)

\_\_\_\_\_  
(Date Commission Expires)

\_\_\_\_\_  
(Date Commission Expires)

In lieu of completing the above section of the Proposal Bid Bond form, the Principal may file an Electronic Bid Bond. By signing the proposal 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 \_\_\_\_\_

**(1) Policy**

It is public policy that disadvantageded businesses as defined in 49 CFR Part 26 and the Special Provision shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal or State funds. Consequently the requirements of 49 CFR Part 26 apply to this contract.

**(2) Obligation**

The contractor agrees to ensure that disadvantageded businesses as defined in 49 CFR Part 26 and the Special Provision have the maximum opportunity to participate in the performance of contracts or subcontracts financed in whole or in part with Federal or State funds. The contractor shall take all necessary and reasonable steps in accordance with 49 CFR Part 26 and the Special Provision to ensure that said businesses have the maximum opportunity to compete for and perform under this contract. The contractor shall not discriminate on the basis of race, color, national origin or sex in the award and performance of contracts.

**(3) Project and Bid Identification**

Complete the following information concerning the project and bid:

Route _____	Total Bid _____
Section _____	Contract DBE Goal _____
Project _____	(Percent)                      (Dollar Amount)
County _____	
Letting Date _____	
Contract No. _____	
Letting Item No. _____	

**(4) Assurance**

I, acting in my capacity as an officer of the undersigned bidder (or bidders if a joint venture), hereby assure the Department that on this project my company : (check one)

Meets or exceeds contract award goals and has provided documented participation as follows:  
Disadvantaged Business Participation \_\_\_\_\_ percent

Attached are the signed participation statements, forms SBE 2025, required by the Special Provision evidencing availability and use of each business participating in this plan and assuring that each business will perform a commercially useful function in the work of the contract.

Failed to meet contract award goals and has included good faith effort documentation to meet the goals and that my company has provided participation as follows:  
Disadvantaged Business Participation \_\_\_\_\_ percent

The contract goals should be accordingly modified or waived. Attached is all information required by the Special Provision in support of this request including good faith effort. Also attached are the signed participation statements, forms SBE 2025, required by the Special Provision evidencing availability and use of each business participating in this plan and assuring that each business will perform a commercially useful function in the work of the contract.

\_\_\_\_\_  
Company

By \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

The "as read" Low Bidder is required to comply with the Special Provision.

Submit only one utilization plan for each project. The utilization plan shall be submitted in accordance with the special provision.

Bureau of Small Business Enterprises                      **Local Let Projects**  
2300 South Dirksen Parkway                                      Submit forms to the  
Springfield, Illinois 62764    Local Agency

The Department of Transportation is requesting disclosure of information that is necessary to accomplish the purpose as outlined under State and Federal law. Disclosure of this information is **REQUIRED**. Failure to provide any information will result in the contract not being awarded. This form has been approved by the State Forms Manager Center.



# PROPOSAL ENVELOPE



# PROPOSALS

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

Item No.	Item No.	Item No.

Submitted By:

Name:
Address:
Phone No.

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

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

## **NOTICE**

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

# CONTRACTOR OFFICE COPY OF CONTRACT SPECIFICATIONS

## NOTICE

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

**Contract No. 64G59  
CARROLL County  
Section 104 B-2  
Project ACNHPP-0017(132)  
Route FAP 17  
District 2 Construction Funds**



**Illinois Department of Transportation**

## **SUBCONTRACTOR DOCUMENTATION**

Public Acts 96-0795, 96-0920, and 97-0895 enacted substantial changes to the provisions of the Code (30 ILCS 500). Among the changes are provisions affecting subcontractors. The Contractor awarded this contract will be required as a material condition of the contract to implement and enforce the contract requirements applicable to subcontractors that entered into a contractual agreement with a total value of \$50,000 or more with a person or entity who has a contract subject to the Code and approved in accordance with article 108.01 of the Standard Specifications for Road and Bridge Construction.

If the Contractor seeks approval of subcontractors to perform a portion of the work, and approval is granted by the Department, the Contractor shall provide a copy of the subcontract to the Illinois Department of Transportation's CPO upon request within 15 calendar days after execution of the subcontract.

Financial disclosures required pursuant to Sec. 50-35 of the Code must be submitted for all applicable subcontractors. The subcontract shall contain the certifications required to be made by subcontractors pursuant to Article 50 of the Code. This Notice to Bidders includes a document incorporating all required subcontractor certifications and disclosures for use by the Contractor in compliance with this mandate. The document is entitled State Required Ethical Standards Governing Subcontractors.

## RETURN WITH SUBCONTRACT

### STATE ETHICAL STANDARDS GOVERNING SUBCONTRACTORS

Article 50 of the Code establishes the duty of all State CPOs, SPOs, 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.

The certifications hereinafter made by the subcontractor are each a material representation of fact upon which reliance is placed should the Department approve the subcontractor. The CPO may terminate or void the contract approval if it is later determined that the bidder or subcontractor rendered a false or erroneous certification. If a false certification is made by a subcontractor the contractor's submitted bid and the executed contract may not be declared void unless the contractor refuses to terminate the subcontract upon the State's request after a finding that the subcontractor's certification was false.

Section 50-2 of the Code provides that every person that has entered into a multi-year contract and every subcontractor with a multi-year subcontract shall certify, by July 1 of each fiscal year covered by the contract after the initial fiscal year, to the responsible CPO whether it continues to satisfy the requirements of Article 50 pertaining to the eligibility for a contract award. If a contractor or subcontractor is not able to truthfully certify that it continues to meet all requirements, it shall provide with its certification a detailed explanation of the circumstances leading to the change in certification status. A contractor or subcontractor that makes a false statement material to any given certification required under Article 50 is, in addition to any other penalties or consequences prescribed by law, subject to liability under the Whistleblower Reward and Protection Act for submission of a false claim.

#### **A. Bribery**

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, or subcontracting under such a contract, 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, or which is signatory to the contract to which the subcontract relates, 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 2012.

(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, and every subcontract subject to Section 20-120 of the Code shall contain a certification by the contractor or the subcontractor, respectively, that the contractor or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any certifications required by this Section are false. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

The contractor or subcontractor certifies that it is not barred from being awarded a contract under Section 50-5.

#### **B. Felons**

Section 50-10. Felons.

(a) Unless otherwise provided, no person or business convicted of a felony shall do business with the State of Illinois or any State agency, or enter into a subcontract, 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.

(b) Certification. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code shall contain a certification by the bidder or contractor or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any of the certifications required by this Section are false.

## RETURN WITH SUBCONTRACT

### **C. Debt Delinquency**

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

The contractor or bidder or subcontractor, respectively, certifies that it, or any affiliate, is not barred from being awarded a contract or subcontract under the Code. Section 50-11 prohibits a person from entering into a contract with a State agency, or entering into a subcontract, 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, or entering into a subcontract, 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 bidder or contractor or subcontractor, respectively, further acknowledges that the CPO may declare the related contract void if this certification is false or if the bidder, contractor, or subcontractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

### **D. Prohibited Bidders, Contractors and Subcontractors**

Section 50-10.5 and 50-60(c). Prohibited bidders, contractors and subcontractors.

The bidder or contractor or subcontractor, respectively, 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 or if in violation of Subsection (c) for a period of five years from the date of conviction. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code shall contain a certification by the bidder, contractor, or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO shall declare the related contract void if any of the certifications completed pursuant to this Section are false.

### **E. Section 42 of the Environmental Protection Act**

The bidder or contractor or subcontractor, respectively, certifies in accordance with 30 ILCS 500/50-14 that the bidder, contractor, or subcontractor, is not barred from being awarded a contract or entering into a subcontract under this Section which prohibits the bidding on or entering into contracts with the State of Illinois or a State agency, or entering into any subcontract, that is subject to the Code 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 bidder or contractor or subcontractor, respectively, acknowledges that the CPO may declare the contract void if this certification is false.

**The undersigned, on behalf of the subcontracting company, has read and understands the above certifications and makes the certifications as required by law.**

<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <p style="text-align: center;">Name of Subcontracting Company</p>		
<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <p style="text-align: center;">Authorized Officer</p>		<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <p style="text-align: center;">Date</p>



**RETURN WITH SUBCONTRACT**  
**SUBCONTRACTOR DISCLOSURES**

**I. DISCLOSURES**

**A.** The disclosures hereinafter made by the subcontractor are each a material representation of fact upon which reliance is placed. The subcontractor further certifies that the Department has received the disclosure forms for each subcontract.

The CPO may void the bid, contract, or subcontract, respectively, if it is later determined that the bidder or subcontractor rendered a false or erroneous disclosure. A contractor or subcontractor may be suspended or debarred for violations of the Code. Furthermore, the CPO may void the contract.

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

1. Section 50-35 of the Code provides that all subcontracts with a total value of \$50,000 or more, from subcontractors identified in Section 20-120 of the Code, shall be accompanied by disclosure of the financial interests of the subcontractor. This disclosed information for the subcontractor, will be maintained as public information subject to release by request pursuant to the Freedom of Information Act, filed with the Procurement Policy Board, and shall be incorporated as a material term of the Prime Contractor's contract. Furthermore, pursuant to this Section, the Procurement Policy Board may recommend to allow or void a contract or subcontract based on a potential conflict of interest.

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 subcontracting entity or its parent entity, whichever is less, unless the subcontractor 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 subcontractor is a privately held entity that is exempt from Federal 10K reporting, but has more than 100 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any individual 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 individual 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 individual making the disclosure having any of the relationships identified in Section 50-35 and on the disclosure form.

**The current annual salary of the Governor is \$177,412.00.**

In addition, all disclosures shall indicate any other current or pending contracts, subcontracts, proposals, leases, or other ongoing procurement relationships the subcontracting entity has with any other unit of state government and shall clearly identify the unit and the contract, subcontract, 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. A separate Disclosure Form A must be submitted with the bid for each individual meeting the above requirements. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies and a total ownership certification. **The forms must be included with each bid.**

**C. Disclosure Form Instructions**

**Form A Instructions for Financial Information & Potential Conflicts of Interest**

If the subcontractor 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 subcontractor is a privately held entity that is exempt from Federal 10K reporting, but has more than 100 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any individual or entity holding any ownership share that is in excess of 5%. If a subcontractor is not subject to Federal 10K reporting, the subcontractor must determine if any individuals are required by law to complete a financial disclosure form. To do this, the subcontractor 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 an individual that is authorized to execute contracts for the subcontracting 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 60% of the annual salary of the Governor? YES \_\_\_ NO \_\_\_
3. Does anyone in your organization receive more than 60% of the annual salary of the Governor of the subcontracting entity's or parent entity's distributive income? YES \_\_\_ NO \_\_\_

(Note: Distributive income is, for these purposes, any type of distribution of profits. An annual salary is not distributive income.)

4. Does anyone in your organization receive greater than 5% of the subcontracting entity's or parent entity's total distributive income, but which is less than 60% of the annual salary of the Governor? YES \_\_\_ NO \_\_\_

(Note: Only one set of forms needs to be completed per individual per subcontract 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 subcontractor must determine each individual in the subcontracting entity or the subcontracting entity's parent company that would cause the questions to be answered "Yes". Each form must be signed and dated by an individual that is authorized to execute contracts for your organization. The individual signing can be, but does not have to be, the individual for which the form is being completed. The subcontractor 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 an individual that is authorized to execute contracts for your company.

## RETURN WITH SUBCONTRACT

### **Form B: Instructions for Identifying Other Contracts & Procurement Related Information**

Disclosure Form B must be completed for each subcontract submitted by the subcontracting entity. *Note: Checking the NOT APPLICABLE STATEMENT on Form A does not allow the subcontractor to ignore Form B. Form B must be completed, checked, and dated or the subcontract will not be approved.*

The Subcontractor shall identify, by checking Yes or No on Form B, whether it has any pending contracts, subcontracts, leases, bids, proposals, or other ongoing procurement relationship with any other (non-IDOT) State of Illinois agency. If "No" is checked, the subcontractor only needs to complete the check box on the bottom of Form B. If "Yes" is checked, the subcontractor must list all non-IDOT State of Illinois agency pending contracts, subcontracts, leases, bids, proposals, and other ongoing procurement relationships. These items may be listed on Form B or on an attached sheet(s). Contracts with cities, counties, villages, etc. are not considered State of Illinois agency contracts and are not to be included. Contracts or subcontracts with other State of Illinois agencies such as the Department of Natural Resources or the Capital Development Board must be included.

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

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

Subcontractor 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 Section 50-35 of the Code (30 ILCS 500). Subcontractors desiring to enter into a subcontract of a State of Illinois contract 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 subcontracts with a total value of \$50,000 or more, from subcontractors identified in Section 20-120 of the Code, 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.**

*The current annual salary of the Governor is \$177,412.00.*

**DISCLOSURE OF FINANCIAL INFORMATION**

**1. Disclosure of Financial Information.** The individual named below has an interest in the SUBCONTRACTOR (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 60% of the annual salary of the Governor. **(Make copies of this form as necessary and attach a separate Disclosure Form A for each individual meeting these requirements)**

<b>FOR INDIVIDUAL (type or print information)</b>	
<b>NAME:</b>	_____
<b>ADDRESS</b>	_____
<b>Type of ownership/distributable income share:</b>	
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 State 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 60% of the annual salary of the Governor, provide the name the State agency for which you are employed and your annual salary. \_\_\_\_\_

**RETURN WITH SUBCONTRACT**

3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, 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 100% of the annual 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 60% of the annual salary of the Governor, are you and your spouse or minor children entitled to receive (i) more than 15 % in the aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of two times the salary of the Governor?  
Yes \_\_\_ No \_\_\_

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(b) State employment of spouse, father, mother, son, or daughter, including contractual employment 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 State 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 60% of the annual salary of the Governor, provide the name of your 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 60% of the annual salary of the Governor, 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 100% of the annual 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 60% of the annual salary of the Governor, are you and your spouse or minor children entitled to receive (i) more than 15 % in the aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of two 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 States 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 SUBCONTRACT**

(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 \_\_\_

**3 Communication Disclosure.**

Disclose the name and address of each lobbyist and other agent of the bidder or offeror who is not identified in Section 2 of this form, who is has communicated, is communicating, or may communicate with any State officer or employee concerning the bid or offer. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the process and throughout the term of the contract. If no person is identified, enter "None" on the line below:

Name and address of person(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**RETURN WITH SUBCONTRACT**

**4. Debarment Disclosure.** For each of the persons identified under Sections 2 and 3 of this form, disclose whether any of the following has occurred within the previous 10 years: debarment from contracting with any governmental entity; professional licensure discipline; bankruptcies; adverse civil judgments and administrative findings; and criminal felony convictions. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the procurement process and term of the contract. If no person is identified, enter "None" on the line below:

Name of person(s): \_\_\_\_\_

Nature of disclosure: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**APPLICABLE STATEMENT**

**This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page. Under penalty of perjury, I certify the contents of this disclosure to be true and accurate to the best of my knowledge.**

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

**NOT APPLICABLE STATEMENT**

**Under penalty of perjury, 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 SUBCONTRACTOR listed on the previous page.**

\_\_\_\_\_ Date \_\_\_\_\_  
Signature of Authorized Officer

RETURN WITH SUBCONTRACT

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form B
Subcontractor: Other Contracts & Financial Related Information Disclosure

Form with fields: Subcontractor 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 Section 50-35 of the Code (30 ILCS 500). This information shall become part of the publicly available contract file.

DISCLOSURE OF OTHER CONTRACTS, SUBCONTRACTS, AND PROCUREMENT RELATED INFORMATION

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

If "No" is checked, the subcontractor only needs to complete the signature box on 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 CHECKED

Signature box with fields for Signature of Authorized Officer and Date

OWNERSHIP CERTIFICATION

Please certify that the following statement is true if the individuals for all submitted Form A disclosures do not total 100% of ownership

Any remaining ownership interest is held by individuals receiving less than \$106,447.20 of the bidding entity's or parent entity's distributive income or holding less than a 5% ownership interest.

Yes No N/A (Form A disclosure(s) established 100% ownership)



## 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. Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). Paper-based bids are to be submitted to the Chief Procurement Officer for the Department of Transportation in care of the Chief Contracts Official at the Harry R. Hanley Building, 2300 South Dirksen Parkway, in Springfield, Illinois until 10:00 a.m. July 31, 2015. 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 10:00 a.m.
- 2. DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 64G59  
CARROLL County  
Section 104 B-2  
Project ACNHPP-0017(132)  
Route FAP 17  
District 2 Construction Funds**

**Bridge replacement and realignment of US 52/IL 64 over the Mississippi River, the Burlington Northern and Santa Fe Railway in Savanna (SN 008-0052).**

- 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

Randall S. Blankenhorn,  
Acting Secretary



INDEX  
 FOR  
 SUPPLEMENTAL SPECIFICATIONS  
 AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2015

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

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 1-1-12) (Revised 1-1-15)

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## **STATE OF ILLINOIS**

### **SPECIAL PROVISIONS**

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction", adopted January 1, 2012, 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 FAP Route 17 (US 52/IL 64), Project ACNHPP-0017(132), Section 104B-2, in Carroll County, IL and Jackson County, IA, Contract No. 64G59, 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 F.A.P. 17 (US 52/IL 64), north of Savanna, IL, east of Sabula, IA, in Carroll County, IL and Jackson County, IA.

#### **DESCRIPTION OF PROJECT**

The project consists of the removal of S.N. 008-6000 and construction of S.N. 008-0052, which carries US 52/IL 64 over the Mississippi River. The contract includes reconstruction of 1,400 feet of US 52 causeway in Iowa. Reconstruction of the causeway will include placing new embankment, riprap, and removing and replacing guardrail. Also included in this project is the reconstruction of 2,400 feet of IL 84 roadway in Illinois, as well as 1,565 feet of retaining wall (S.N. 008-7001). IL 84 reconstruction will include removing and replacing guardrail, curb and gutter, sidewalk, and driveway entrances.

#### **MAINTENANCE OF ROADWAYS**

Effective: June 26, 2003

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

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

**COMPLETION DATE PLUS WORKING DAYS**

Effective: December 29, 2006      Revised: April 10, 2014

Revise Article 108.05(b) of the Standard Specifications to read:

“(b) Completion Date Plus Working Days. When a completion date plus working days is specified, the Contractor shall complete the project by 11:59 p.m. on or prior to May 31st, 2018 except as specified herein. The PROJECT shall have all work completed, except the landscape items, punch list items, and clean up for the PROJECT to be considered complete.

The Contractor will be allowed 15 working days after the completion date to complete landscaping items, punch list items, and clean up.”

The following are the interim completion dates applicable to this contract:

- The proposed Retaining Wall (SN 008-7001) shall be completed by November 18<sup>th</sup>, 2016.
- The proposed US 52 / IL 64 Bridge over the Mississippi River (SN 008-0052) shall be completed and fully open to traffic by October 31<sup>st</sup>, 2017.
- The proposed IL 84 roadway work shall be completed and open to traffic by November 21<sup>st</sup>, 2017.

All work performed after the listed interim completion dates shall be subjected to liquidated damages as specified in article 108.09 per calendar day until work is complete.

**WORK RESTRICTIONS**

Night Work:

The Contractor will not be allowed to work between the hours of 10:00pm and 6:00am unless approved by the engineer.

Winter Shut Down:

The winter shut down shall be effective from the Tuesday before Thanksgiving to March 15<sup>th</sup>. During this time period, lane closures utilizing temporary traffic control signals or bi-directional traffic will not be allowed. One lane of traffic shall be open in each direction at all times, short duration lane closures shall be allowed during daylight hours only, and at the approval of the engineer.

**POTENTIAL CONSTRUCTION DELAYS DUE TO HIGH WATER**

The project completion date will be extended one calendar day for each calendar day the Contractor is unable to progress critical path items of the work when the Mississippi River stage as measured on the Mississippi River at Lock and Dam 13 MET Station is at or above the elevation noted in the table below for any days that critical path items of the work cannot be performed due to a navigation closure of the river by the U.S. Coast Guard.

<b>Datum</b>	<b>Elevation</b>
Gage Reading	18.98 FT
MSL 1912	587.68 FT
NAVD 88	586.98 FT

These river delays will be noncompensable. The Contractor's progress schedule, current at the time of the high water event will be used for the purpose of identifying critical path activities and the total number of calendar days the contract will be extended.

Gage readings and historical information for Mississippi River at Lock and Dam 13 MET Station can be found at:

<http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=FLT12&fid=FLT12&dt=S>.

No time extension or financial compensation will be granted by the Department for any and all delays or costs associated with water elevations below normal pool elevation of 582.30 FT.

**COOPERATION WITH UTILITIES**

Add to Article 105.07

The City of Savanna plans to abandon water main north of approximately station 711+00 along IL 84 and relocate fire hydrants at approximately stations 709+00 LT and 711+00 LT. It will be necessary for the Contractor to accommodate up to 14 consecutive calendar days within their schedule for this work to be completed by others. These tasks shall be completed prior to the completion of temporary pavement and permanent subgrade improvements. No additional payment shall be made to the Contractor for this scheduling requirement. The Contractor shall contact the City of Savanna at (815) 273-2251 (Mr. John Lindeman) to determine when the City will be prepared to complete this work.

**TRAFFIC CONTROL PLAN**

Effective: January 14, 1999

Revised: April 10, 2014

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

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

Standards:

701001	701006	701011	701106	701201	701301
701311	701316	701326	701331	701501	701801
701901	704001				

Details:

- a) Staging and Maintenance of Traffic Plans
- b) Temporary Traffic Signal Details
- c) District 2 Details
  - a. INFORMATIONAL WARNING SIGN (FOR NARROW TRAVEL LANES) (39.2)
  - b. ENTRANCE SIGN FOR USE WITH TEMPORARY SIGNALS (75.2)
  - c. TRAFFIC CONTROL FOR ROAD CLOSURE (40.1)
  - d. STOP LINE SIGN FOR TEMPORARY SIGNALS (99.4)

General:

Where construction activities involve sidewalks on both sides of the street, the work shall be staged so that both sidewalks are not out of service at the same time.

Signs:

No bracing shall be allowed on post-mounted signs.

Post-mounted signs shall be installed using standard 720011, 728001, 729001, on 4"x4" wood posts, or on any other "break away" connection if accepted by the FHWA and corresponding letter is provided to the Engineer.

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

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

“UNEVEN LANES” W8-11(O)48 signs shall be installed at 1 mile intervals or as directed by the Engineer.

“LOW SHOULDER” W8-9(O)48 signs shall be installed at 1 mile intervals or as directed by the Engineer.

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

Install a "TO ACTIVATE SIGNAL" sign below the “STOP HERE ON RED” sign. The detail of this sign is included in the plans.

All regulatory signs shall be maintained at a 5 foot minimum height from the bottom of the sign(rural), 7 foot minimum (urban).

Plate altering signs shall have the same sheeting as the base sign.

No more than one plate shall be used to alter a sign.

Any post stubs without a sign in place and visible shall have a reflector placed on each post.

Devices:

Cones or reflectorized cones shall not be used during hours of darkness.

A minimum of 3 drums spaced at 4 feet shall be placed at each return when the sideroad is open.

On all standards, and the devices listed in Section 701 of the Standard Specifications, the device spacing shall be revised to the following dimensions:

Where the spacing shown on the standard is 25 feet, the devices shall be placed at 20 feet.

Where the spacing shown on the standard is 50 feet, the devices shall be placed at 40 feet.

Where the spacing shown on the standard is 100 feet, the devices shall be placed at 80 feet.

Cleaning of Traffic Control Devices:

All traffic control devices shall be kept clean as stated in Article 701 of the Standard Specifications. In addition, the contractor shall make sure the traffic control devices are cleaned after snowfalls or snow plowing if needed or as directed by the Engineer. This work will not be measured for payment or paid for separately and shall be included in the cost of Traffic Control and Protection items.

Lights:

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

Flaggers:

Flagger at Sideroads and Commercial Entrances:

Effective: August 1, 2011

Flaggers shall comply with all requirements contained in the Department's "Flagger Handbook" dated September 2011. The flagger equipment listed for flaggers employed by the Illinois Department of Transportation shall apply to all flaggers.

All workers and flaggers shall wear ANSI Class E pants and an ANSI Class 2 vest that in combination meet the requirements of ANSI/ISEA 107-2004 for Conspicuity Class 3 garments during hours of darkness.

In addition to the flaggers shown on applicable standards, on major sideroads flaggers shall be required on all legs of the intersection. Major sideroads for this project shall be US 52.

When the mainline flagger is within 200 feet of an intersection, the sideroad flagger shall be required.

When the road is closed to through traffic and it is necessary to provide access for local traffic, all flaggers as shown on the applicable standards will be required. No reduction in the number of flaggers shall be allowed.

Revise the first and second paragraph of Article 701.20(i) of the Standard Specifications to read:

"Signs, barricades, or other traffic control devices required by the Engineer, over and above those shown on the standard or detailed in the plans and provisions, will be paid for according to Article 109.04. All flaggers required at sideroads and commercial entrances remaining open to traffic not shown on the Highway Standards, required by article 701.13(a) or listed above, shall be paid for according to Article 109.04."

Temporary Pavement Marking:

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

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

Highway Standards Application:

Treatment of "T" Crossing Near Standard 701316: The signal indications and detection of the intersecting street or driveway near the standard 701316 traffic control installation shall be as followed:

Two signal heads shall be provided for each mainline approach and for each sideroad within the designated work area. Each signal shall consist of one red section, one yellow section, one green left arrow section, and one green right arrow section with back plates.

Detection for sideroads shall consist of one microwave detector or 5 foot x 5 foot loop detector except the detection method for the existing and proposed Mississippi River Bridge shall not be loop detectors. Microwave detectors shall be required at the existing and proposed bridge locations. The microwave detector shall be mounted 14 feet to 18 feet high on the near right post for the sideroad. The detector loop shall be installed at the stop bar. The side road shall be a phase separate from the cross traffic.

All signing and pavement marking on the sideroad shall be as shown on standard 701316.

"NO TURN ON RED" (R10-11B24) signs shall be installed on sideroads in which a right turn would turn traffic into the one lane section.

All cost involved in conforming with this provision shall be considered a part of TRAFFIC CONTROL AND PROTECTION STANDARD 701316, except the traffic signals will be paid for as one Each for TEMPORARY BRIDGE TRAFFIC SIGNALS, which shall include all signals within the designated work area. In addition, the relocation of one side of a set of signals is included in the cost of the Temporary Bridge Signals.

Traffic Control and Protection, Standard 701326: This work shall be done according to Section 701 of the Standard Specifications and the Typical Applications of Traffic Control Devices for Highway Construction, Standard 701326, and as specified herein.

Additional barricades, flagger signs, Yield or Stop signs and flaggers shall be required at the intersections. Barricade spacing shall be at 15 foot centers within these intersections and Yield or Stop signs shall be used to control traffic.

When work is within 200 feet of an intersection, flagger signs and flaggers shall be required on the sideroad at the discretion of the Engineer.

These additional devices shall be paid for as part of Traffic Control and Protection 701326 and not as an addition to the contract.

Temporary Rumble Strips: When temporary rumble strips are specified and rumble strips such as self-adhesive rumble strips manufactured by Advance Traffic Markings are used that do not meet the thickness requirement shown on standard 701901, multiple layers of the product shall be used to meet standard 701901.

This work shall be included in the contract unit price per each for TEMPORARY RUMBLE STRIPS.

TEMPORARY SIGNALS: The Contractor will be required to have someone available at all times to receive phone calls during non-work hours and who is able to reach the job site within one hour of being called. This person will be able to repair the temporary signals or will be able to have flaggers on site within another hour to flag traffic until the signals are again in operation. Failure to have a person on site within an hour after the initial call out will result in the Contractor being charged liquidated damages by the Department of One Thousand Dollars (\$1,000). Failure to have traffic restored either with repaired signals or with flaggers within two hours after the initial call out will result in the Contractor being charged liquidated damages by the Department of One Thousand Dollars (\$1,000) per hour until traffic is restored. The Contractor may use a traffic control subcontractor for the first call, however this does not relieve the prime Contractor from having a person on call.

Traffic Signal Work: No traffic signal work shall begin until all of the traffic signal hardware is on the job site. The existing traffic signal system shall remain in operation during the modernization work. The work shall be scheduled so that a minimum of two signal indications for each phase remains in operation. No signal indication shall be absent for more than seven calendar days.

The Contractor will be allowed to shut down the existing signal system not to exceed 8 hours to replace the existing controller and cabinet. During this shutdown, the intersection will operate as a 4-way "Stop".

Traffic Control for Narrow Travel Lanes: The Contractor shall provide informational warning signs regarding narrow travel lanes in construction areas. MAX WIDTH XX'-XX" X MILES AHEAD (W12-1103-48) signs with a width restriction of 10'-0", or 8'-6" at locations noted below, shall be installed at the following locations and the distance from the crossroads as noted:

- IL 84 at IL 64 south junction (1 MILE AHEAD)
- US 20 and IL 84 (south junction) (18 MILES AHEAD)
- US 52 at IL 78 (11 MILES AHEAD) with a NORTH plate (M3-1(2412)) and an IL 84 shield (M1-1100(24)) mounted below this sign
- US 52 prior to the causeway bridge in Sabula, Iowa (2 MILES AHEAD) (8'-6" restriction)
- US 52/US 67 (3 MILES AHEAD) (8'-6" restriction)
- IL 84 at C.H. 17, south side of Hanover (12 MILES AHEAD)
- IL 84 and Mississippi Palisades Main Entrance (3 MILES AHEAD)
- After each Road Construction Ahead Sign in the sign series

The material of these signs shall be 0.125 inch thick aluminum, Type AP White and fluorescent orange reflective sheeting, and 6 inch D Series font Black vinyl lettering meeting the requirements of Sections 1090 and 1091 of the Standard Specifications for Road and Bridge Construction.



The Contractor shall notify the Traffic Operations Section of the Bureau of Operations by fax (815/284-5489) and the Bureau of Project Implementation (815/284-5348) in writing by means of fax (to the numbers provided) and also by letter to the District Office. **This request shall be submitted between three and four weeks (21 to 28 days) prior to the anticipated lane restriction to allow the State adequate time to permit wide loads.**

The contractor shall be responsible for providing, erecting, maintaining, and removing these signs. All cost involved in conforming with this provision shall be considered a part of TRAFFIC CONTROL AND PROTECTION STANDARD 701316.

Maintenance of Traffic:

When the roadway is not closed and/or Standard 701316 are not in effect, the mainline shall be kept open to one-way traffic at all times during working hours and two-way traffic during non-working hours. Full closures utilizing flaggers in combination with 701316 or 701312 shall meet the approval of the engineer and shall be used only when absolutely necessary.

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

The Contractor shall be required to notify the City of Savanna, the Carroll County Highway Department and/or corresponding Township Commissioner for any sideroad closure or opening.

Placing and removing pavement marking shall be completed using Traffic Control and Protection Standard 701311 or 701701.

**TRAFFIC CONTROL SURVEILLANCE**

Effective: January 1, 2011

Revise the first sentence of the first paragraph of Article 701.10 of the Standard Specifications to read:

“When open holes, broken pavement, trenches over 3 in. deep and 4 in. wide or other hazards are present within 8 ft. of the edge of an open lane, the Contractor shall furnish traffic control surveillance at all times, whether or not the Contractor is engaged in construction operations.”

**WORK ZONE PAVEMENT MARKING AND REMOVAL**

Effective: December 29, 2008

This work shall consist of installing and removing temporary pavement marking according to Section 703 of the Standard Specifications and the following:

Paint pavement marking shall be used on the final wearing surface when the temporary pavement marking will conflict with the permanent pavement marking such as on tapers, crossovers and lane shifts.

All temporary paint on the final wearing surface shall be removed according to Article 1101.12 Water Blaster with Vacuum Recovery and the applicable portions of Section 703 of the Standard Specifications and as described herein.

Add the following paragraph to Article 1101.12 of the Standard Specifications.

For the high pressure water spray, the pressure at the nozzle shall be approximately 25,000 psi with maximum flow rate of 15 gal/min. The nozzle shall be in close proximity to the pavement surface.

**IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE)**

Effective: June 1, 2006      Revised: February 3, 2010

This work shall consist of installing Temporary Impact Attenuators according to the Special Provision. Temporary sand module systems that are not located on pavement or a hot-mix asphalt shoulder shall be placed on a 6" base. The base can be either hot-mix asphalt or concrete.

The hot-mix asphalt base shall be constructed with incidental hot-mix asphalt surfacing according to Section 408 of the specifications book. The concrete base shall be constructed using class SI concrete.

The temporary impact attenuator and base shall be removed after the completion of work. The area under the base shall be restored to the original condition.

The cost of the base will be included in the contract unit price per Each for IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE) of the test level specified.

### **PCC AUTOMATIC BATCHING EQUIPMENT**

Effective: January 1, 2015

Portland cement concrete provided shall be produced from batch plants that conform to the requirements of Article 1103.03 (a) and (b) of the Standard Specifications for Road and Bridge Construction. Semi-automatic batching will not be allowed.

Plants shall have computerized batching interfaced with a printer. Batch weights, aggregate mixtures, water added, amount of each admixture or additive, and percent variance from design shall be printed for each batch. Tickets shall state the actual water-cement ratio as batched, and the amount of water that can be added to the batch without exceeding the maximum water-cement ratio. Truck delivery tickets are still required as per Article 1020.11(a)(7) of the Standard Specifications.

### **PCC QC/QA ELECTRONIC REPORTS SUBMITTAL**

Effective: January 1, 2015

The Contractor's QC personnel shall be responsible for electronically submitting BMPR MI654 "Concrete Air, Slump, and Quantity," BMPR MI655 "P.C. Concrete Strength," and BMPR MI504 "Aggregate Gradation" reports to the Department. The format for the electronic submittals shall be the QC/QA package reporting program, which will be provided by the Department. Microsoft Excel 2007 or newer and Microsoft Outlook is required for this program which shall be provided by the Contractor.

### **CRITICAL PATH SCHEDULE**

Effective: February 10, 1995

The construction of this project will be planned and recorded with a conventional Critical Path Method (CPM) as specified in Article 108.02 of the Standard Specifications and the following:

The Contractor is responsible for preparing the initial schedule in the form of an activity on arrow diagram which shall include activity description and duration, two copies shall be submitted to the Engineer at the preconstruction meeting. The construction time, as determined by the schedule shall not exceed the specified contract time. The schedule shall be updated the first of each month, when there is a delay in completion of any critical activity, or when the contract is modified causing additions, deletion or revision of activities required.

As determined by CPM analysis, only delays in activities which affect milestone dates or contract completion dates will be considered for a time extension.

If the Contractor does seek a time extension of any milestone or contract completion date, he/she shall furnish documentation as required by the Engineer to enable him to determine whether a time extension is appropriate under the terms of the contract.

## **RAILROAD COORDINATION WITH THE BURLINGTON NORTHERN SANTA FE R.R.**

There will be some work within the Burlington Northern Santa Fe Railroad (BNSF) right of way on this project, namely construction of the bridge over the tracks. In order to prosecute this work, the following items MUST be coordinated with the Burlington Northern Santa Fe Railroad prior to commencement of the work. The Contractor shall contact the BNSF prior to commencement of work to coordinate the following items:

### **RIGHT OF ENTRY PERMIT**

The Contractor must enter into a Right of Entry Permit Agreement with the Burlington Northern Santa Fe Railroad (BNSF) prior to any work commencing. This permit may take from 30 to 45 days to obtain from the BNSF. Contact Vicki Norman (Jones Lang LaSalle Brokerage, Inc. consultant to BNSF) at 817-230-2628.

### **TRAINING**

Computer based training for all employees and subcontractors shall be obtained and certificates of completion must be kept on site for each worker. The computer based training may be obtained through the National Ready Mixed Concrete Association at their website at NRMCA.ORG.

### **UTILITY LOCATES**

**Call Before You Dig!** Call 1-800-533-2891 to arrange for a BNSF underground cable locate. BNSF form "Underground Cable Location & Acknowledge" will be completed by a BNSF representative and copy provided to the contractor. The contractor must have this completed form in possession at the job site at all times.

### **WORKING HOURS**

The no general working hours restrictions are required by the BNSF. Working hours may be limited based on flagger availability. If weekend work is required, it must be approved with the Local Maintenance Supervisor.

### **MINIMUM SAFETY REQUIREMENTS**

Safety of personnel, property, rail operations and the public is of paramount importance in the prosecution of the work pursuant to this agreement. As reinforcement and in furtherance of overall safety measures to be observed by the contractor (and not by way of limitation), the following special safety rules shall be followed:

- (a) The contractor shall keep the job site free from safety and health hazards and ensure that its employees are competent and adequately trained in all safety and health aspects of the job. The contractor shall have proper first aid supplies available on the job site so that prompt first aid services can be provided to any person that may be injured on the job site. The contractor shall promptly notify the railroad of any U.S. Occupational Safety and Health Administration reportable injuries occurring to any person that may arise during the work performed on the job site. The contractor shall have a nondelegable duty to control its employees, while they are on the job site or any other property of the railroad, to be certain they do not use, be under the influence of, or have in their possession any alcoholic beverage or illegally obtained drug, narcotic or other substance.

- (b) The employee of the contractor shall be suitably dressed to perform their duties safety and in a manner that will not interfere with their vision, hearing, or free use of their hands or feet. Only waist length shirts with sleeves and trousers that cover the entire leg are to be worn. If flarelegged trousers are worn, the trouser bottoms must be tied to prevent catching. The employees should wear sturdy and protective footwear. Employees shall not wear boots (other than work boots), sandals, canvas type shoes, or other shoes that have thin soles or heels that are higher than normal. In addition, the contractor shall require its employees to wear personal protective equipment as specified by railroad rules, regulations, or railroad officials overlooking the work at the job site. In particular, the protective equipment to be worn shall be:
- (1) Protective head gear that meets American National Standard Z89. 1 - latest revision. It is suggested that all hard hats be affixed with contractor's or subcontractor's company logo or name.
  - (2) Eye protection that meets American National Standard for occupational and educational eye and face protection, Z87. 1 - Latest revision. Additional eye protection must be provided to meet specific job situations such as welding, grinding, burning, etc.
  - (3) Hearing protection which affords enough attenuation to give protection from noise levels that will be occurring on the job site.
- (c) All heavy equipment provided or leased by the contractor shall be equipped with audible backup warning devices.
- (d) If in the opinion of the railroad representative any of contractor's or any of its subcontractor's equipment is unsafe for use on the railroad's right of way, the contractor, at the request of the railroad representative, shall remove such equipment from the railroad's right of way.
- (e) If the railroad representative has given the contractor permission to use certain equipment on any trackage at the job site, contractor shall ensure that each and all of its employees responsible for operating any motive power including, without limitation, any tryrail equipment (such equipment hereafter being referred to as "motive power") on any trackage of railroad will be trained to know and understand, and will comply with railroad's operating rules applicable to the operation and use of such motive power. In the event contractor's employees use any such motive power to move any rail cars or other railbound equipment equipped with air brakes, contractor shall further ensure that the employees are trained to know and understand and will comply with railroad's rules for handling such motive power, cars and equipment, and that contractor's employees perform all required tests of the operating systems of any motive power, cars and other equipment before and after movement. Contractor acknowledges receipt of railroad's applicable rules governing:
- (1) Operation and use of motive power, cars and other equipment, and the movement of such motive power, cars and equipment by rail.

- (f) In live track operations, a distance of 20 feet from track must be maintained unless the contract necessitates working in close proximity to the track. When doing so, your employees and equipment must first have authorization of Burlington Northern Santa Fe Railroad. When so authorized where work is in close proximity to tracks, a Burlington Northern Santa Fe Railroad flagman must be present.
- (g) Your employees must be familiar with procedures to clear men and equipment from track area for approaching trains. In addition, the following safety procedures shall be adhered to by all of your employees:
  - (1) Always be on the alert for moving equipment while working near any railroad tracks or facilities.
  - (2) Do not step or walk on the top of the rail, frog, switches, guard rails or other track components.
  - (3) In passing around ends of standing cars, engines, railroad machinery, and other on track equipment, leave at least one rail car length (50 feet) between yourself and the end of the equipment.
  - (4) Avoid walking or standing on track at any time.
  - (5) When it is necessary to walk or work on track, always keep a sharp lookout in both directions for approaching trains.
  - (6) Before stepping or crossing tracks, look in both directions first. The same is true when walking around machinery and equipment on and about the tracks.
  - (7) Do not sit on, lie under, or cross between cars except as required in performance of your duty, and only when track and equipment are under proper protection.
  - (8) In multiple track territory, do not stand on one track while a train is passing on another.

## **MAINTENANCE OF NAVIGATION**

This work shall consist of setting up work procedures, methods of protection, and scheduling work so as to maintain navigation through the bridge site to the satisfaction of the United States Coast Guard (USCG).

Materials: All lights, signs, and day markers shall conform to the applicable USCG regulations.

Construction Methods: The Contractor shall submit within four (4) weeks of award, a PLAN OF OPERATIONS that will be forwarded to the USCG by the Engineer. The PLAN OF OPERATIONS shall include a schedule of construction site activities.

The PLAN OF OPERATIONS which shall outline all of the operations affecting the waterway, including but not limited to, contractor activities to facilitate bridge construction and removal, which may include cofferdam installation, maintenance and removal, temporary causeway installation maintenance and removal (if applicable), steel erection, use of falsework, other obstructions or other temporary construction activities, demolition of the existing superstructure, demolition of the existing substructure elements, salvaging existing items, navigation light work, painting, concrete placement, or which will encroach upon navigation clearances that must be approved by the USCG.

The contractor shall so conduct his work that the free navigation of the waterway shall not be unreasonably interfered with; that the present navigation depths shall not be impaired; and that the channel through the structure shall be promptly cleared of all falsework, piling or other obstructions placed therein or caused by the bridge, to the satisfaction of the USCG.

The Contractor shall indemnify and save harmless the State from any liability arising from unplanned channel closures that result from the Contractor's negligence and cause river traffic delays in excess of time permitted including reimbursing said State for any fines levied by the U.S. Coast Guard or any other regulatory authority.

The plan shall also include details of all floating equipment and/or vessels that will be utilized, including size (dimensions), location and length of time, including calendar dates that such equipment will be on the waterway. Location shall be interpreted to mean the positioning of any and all vessels or temporary aggregate causeway in the waterway with respect to the bridge and the navigable channel. Method of anchorage or stabilization of all floating equipment, and location of mooring sites if applicable, shall be specified in the PLAN OF OPERATIONS.

The USCG will review the plan and provide comment to the Engineer within 45 days of receipt of said plan.

All correspondence with the USCG shall be coordinated through the Engineer who will forward the material to the following Coast Guard office:

District Commander  
Attention: Eric Washburn, Bridge Administrator  
United States Coast Guard  
Eighth U.S. Coast Guard District  
1222 Spruce Street  
St. Louis, MO 63103-2832  
Phone: (314) 539-3900

All correspondence should reference the construction site as "Proposed US 52/IL 64 Bridge Replacement, Mile 537.8, Mississippi Waterway."

Activities in the Navigation Channel: A reasonable time limit will be allowed by the USCG for the Contractor's operations in the navigation channel for activities including but not limited to clearing the navigation channel of demolition debris and restoring the navigation channel to full navigation capability. The amount of time allowed for work in, or closure of, the navigation channel for the Contractor's activities in the river and navigation channel will be determined by the USCG after the USCG review of the PLAN OF OPERATIONS. River traffic cannot be detoured to another span. If the USCG requires revisions or additional information, the Engineer will direct the Contractor to furnish the additional information for resubmittal (by the Engineer) to the USCG.

Notification of Commencement of Work: The Contractor shall notify the Coast Guard two weeks prior to commencing any work that includes any of the activities in the PLAN OF OPERATIONS approved by the USCG.

The Contractor shall notify the USCG when construction work has reached a point where contractor construction activities in the PLAN OF OPERATIONS are complete, but in no case, later than 90 days after the bridge has been opened to highway traffic.

The purpose of this clause is to provide advance warning to commercial and other vessels utilizing the Mississippi Waterway. Upon notification of schedule of work, the USCG will issue a NAVIGATIONAL ALERT for the Mississippi Waterway. The USCG and the Engineer must be notified immediately of any change in anticipated work schedules. The USCG and the Engineer shall be promptly notified when work is completed and all floating equipment has been withdrawn from the waterway.

Execution of Work over a Navigable Waterway – United States Coast Guard Requirements:

- (a) Work shall be conducted in a manner that does not interfere with the free flow of navigation.
- (b) The navigational clearances meeting the approval of the USCG shall be maintained at all times. As a minimum, the existing navigational clearances shall be maintained at all times, unless otherwise approved by the USCG.
- (c) Navigable depths shall not be impaired at any time. The channel through the structure shall be promptly cleared of all falsework, piling, or all other obstructions placed therein or caused by the construction or demolition of the bridge. The Contractor shall continually work in a diligent manner to meet these requirements until obstructions are cleared. The Contractor shall cooperate with the USCG and other agencies including the U.S. Army Corps of Engineers in meeting the requirements to sweep the channel clean of construction and demolition debris. No temporary construction will be permitted within the clear navigation channel without USCG approval.
- (d) Safety measures shall be implemented and exercised at all times to prevent accidental dropping of spark producing and/or flame producing particles or objects onto barges and vessels. All welding, flame cutting, and any other tasks having spark-producing potential shall cease when vessels are passing beneath the bridge.



- (e) A contingency plan in the event of personnel absences or failure of equipment, and provisions for back up equipment and qualified personnel to operate the equipment shall be included when requested by the USCG.
- (f) Radio communication shall be provided to assure coordination and adjustment of work activities with the approach and passing of commercial vessels, and any other maritime vessels utilizing radio communication to coordinate passage through the site.
- (g) The contractor shall furnish and display such lights and danger signals upon all of his floating plant, buoys, and temporary and permanent construction as may be required for guiding and warning boats. The contractor shall in addition, comply with all applicable regulations of the USCG. While the existing or new navigation lights on the bridge are inoperative, the contractor shall display suitable temporary navigation lights in accordance with the PLAN OF OPERATIONS. The contractor is responsible for supplying any electrical power necessary for temporary lights and signals during construction. The contractor shall verify that all navigational lights are functional and unobstructed at the completion of each work day.
- (h) Floating equipment must yield the right of way to commercial vessels.
- (i) Floating equipment shall display lights and signals as specified by INLAND NAVIGATIONAL RULES of 1980, copies of which are available from the United States Coast Guard.
- (j) A PROJECT INFORMATION RECORD document shall be executed by the Contractor at the Preconstruction Meeting and a copy thereof shall be immediately submitted to the USCG office listed above. The USCG and the Engineer shall be promptly notified of any subsequent changes in the information provided thereon. A copy of the PROJECT INFORMATION RECORD document is included in these special provisions.

Basis of Payment: This item will be paid for at the contract lump sum price for MAINTENANCE OF NAVIGATION, which price shall be considered as full payment for all costs incurred by the Contractor in connection with the work as described herein.

PROMPTLY COMPLETE AND RETURN TO:

District Commander  
Attn: Director - Western Rivers Operations  
Eighth Coast Guard District  
1222 Spruce Street  
St. Louis, MO 63103-2823

Phone: (314) 539-3900  
Fax: (314) 539-3755

**PROJECT INFORMATION RECORD**

NAME OF BRIDGE: US 52/IL 64, Savanna, IL

RIVER/MILE: Upper Mississippi/ 537.8

PROJECT: Construct new US 52/IL 64 Bridge on offset alignment; then remove existing bridge

PERMITEE: Illinois Department of Transportation

RESIDENT ENGINEER OR INSPECTOR: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: \_\_\_\_\_ (Office) \_\_\_\_\_ (Cell)

CONTRACTOR'S PERSON-IN-CHARGE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: \_\_\_\_\_ (Office) \_\_\_\_\_ (Cell)

SUBCONTRACTOR: \_\_\_\_\_

SUBCONTRACTOR'S PERSON-IN-CHARGE: \_\_\_\_\_

ALTERNATES: \_\_\_\_\_

START DATE: \_\_\_\_\_

EXPECTED COMPLETION DATE: \_\_\_\_\_

NAME OF WORK BOAT ON JOB: \_\_\_\_\_

RADIO CALL SIGN AND FREQUENCIES: \_\_\_\_\_

HOURS/DAYS OF OPERATION: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

## **WATER TRANSPORTATION FOR ENGINEER**

Description: The Contractor will provide a safe, serviceable, 40 HP minimum motor powered boat and an adequate dock for the exclusive use of the Engineer, representatives of the Department of Transportation or representatives of the Federal Highway Administration in the control of work. The boat will be operated by the Department of Transportation personnel and shall be available for use during all periods when work is in process. The boat shall be a minimum 18' in length. The boat shall be equipped with six life jackets, running lights for nighttime operation, two paddles, and an anchor capable of preventing drift in the case of motor failure and shall be provided with bumpers to protect the side while landing at barges or docks. The dock provided shall be within the project right-of-way (or other approved location) accessible to the Engineer and his designated personnel. The Contractor shall be responsible for securing all required permits for boat docks. The Contractor shall remove the boat docks upon completion of the contract. Additional items associated with the boat and/or maintenance of the boat such as gas, oil, filters, and lubrication shall be the responsibility of the contractor. The boat shall be licensed to operate on the Mississippi River and shall meet the approval of the Engineer.

Insurance shall be provided by the contractor meeting the requirements of Article 107.27 of the Standard Specifications for Road and Bridge Construction. IDOT shall be named as an additional insured on the policy. A copy of the required boat insurance shall be submitted to the IDOT prior to the performance of any work.

Basis of Payment: The cost of furnishing a boat and dock with proper equipment, including all operating expenses including insurance and maintenance will be paid for at the contract unit price per calendar month, or fraction thereof, for WATER TRANSPORTATION FOR ENGINEER.

## **ENGINEER'S FIELD OFFICE TYPE A**

Effective: January 1, 2012

Engineer's Field Office Type A shall be in accordance with Article 670.02 of the Standard Specifications:

Add (s) to the end of 670.02

(s) Cellular phone with a minimum of 500 anytime minutes per month for use by the site resident engineer/technician.

## **STABILIZED CONSTRUCTION ENTRANCE**

Description: This work consists of constructing a stabilized pad of coarse aggregate underlain with geotechnical fabric at the locations where construction traffic will be entering or leaving the work zone. Cellular confinement grids shall be used to contain the aggregate at the pad boundaries. Also included is the removal and satisfactory disposal of the stabilized construction entrance when no longer required. This work shall be performed in accordance with the applicable portions of Sections 202, 210, 1004 and 1080 of the Standard Specifications, the details in the plans or as directed by the Engineer.

Materials: Aggregate shall consist of coarse aggregate gradations CA-1, CA-2, CA-3, or CA-4 meeting the requirements of Article 1004.04. Aggregate thickness shall be as detailed on the plans

Geotechnical fabric shall meet the requirements of Article 1080.02.

### General:

Excess or unsuitable excavated materials shall be disposed of in accordance with Article 202.03.

The coarse aggregate surface coarse shall be compacted to the satisfaction of the Engineer.

Restoration shall be paid for separately as TEMPORARY EROSION CONTROL SEEDING and EROSION CONTROL BLANKET.

Method of Measurement: The stabilized construction entrance will be measured in place and the area computed in square yards.

Basis of Payment: This work will be paid for at the contract unit price per square yard for STABILIZED CONSTRUCTION ENTRANCE, which price shall be payment in full for all excavation, except excavation in rock; removal and disposal of excavated materials; geotechnical fabric; Cellular confinement grids; furnishing, placing, compacting, and disposing of coarse aggregate; and for all labor, tools and equipment necessary to construct the work as specified.

## **SEDIMENT CONTROL, SILT CURTAIN**

Description: This work shall consist of the furnishing, installing, maintaining, replacing, relocating, and removal of a flotation silt curtain assembly, designed to collect sediment/debris from in-stream work areas at locations determined by the Contractor based on anticipated construction operations and as directed by the Engineer to preserve the water quality of the creek.

**Equipment:** The silt curtain should be of appropriate size to perform the required function of isolating the work area from the rest of the stream, with length of the curtain extending at least 1 ft greater than the elevation of water at all locations. The silt curtain assembly shall consist of the silt barrier with flotation segments and weighing devices and all required anchorage devices. The curtain shall be in good working condition and shall meet the approval of the Engineer. A typical detail drawing is included in the plans depicting a typical curtain assembly. The silt curtain shall meet the specifications of the silt curtain manufacturer and the following physical and performance properties:

	<u>Testing Method</u>	<u>Requirement</u>
Grab Tensile Warp Strength	ASTM D-4632	>=240 lbs
Elongation @ Break	ASTM D-4632	>=60%
Trapezoidal Tear	ASTM D-4533	>=90 lbs.
Puncture Strength	ASTM D-4833	>=65 lbs.
UV Stability @ 500 hrs	ASTM D-4355	>=70%
Permittivity	ASTM D-4491	>=0.1 sec-1
Water Flow Rate	ASTM D-4491	>=11 gpm/ft <sup>2</sup>
AOS (US sieve #)	ASTM D-4751	>=140 sieve
Material Construction		Nonwoven

All values are minimum average roll values.

**Installation:** The silt curtains shall be installed according to the manufacturer specifications, and in a manner approved by the Engineer prior to the start of construction within the body of water. Additional anchorage may be required based on the stream characteristics and manufactures specifications. Additional anchorage may consist of steel or timber driven piles to insure proper installation & anchoring.

**Requirements:** The Contractor shall inspect the work site to review the stream characteristics where the work is to occur. The silt curtain assembly shall be installed in the stream in a configuration that prevents silt from traveling beyond the work area, but does not cause flooding upstream of the work area. The silt curtain shall be installed in a manner sufficient to withstand ten-year flood water level frequency. The silt curtain shall not be installed across the entire width of the stream.

A maximum of 1/3 of the width of the stream may be isolated at any one time. The width of stream shall be defined as the linear measurement of the stream width at normal-level flow as shown on the plans or from bank to bank. Silt curtains shall not be installed at an angle greater than 45° from parallel with the direction of flow. Routine maintenance includes continually maintaining a properly working silt curtain. Also included is the regular removal and disposal of excess sediment in contact with either side of the curtain, as directed by the Engineer. Excess sediment shall be removed between 48 and 72 hours prior to the removal of the silt curtain. Excess sediment is a sediment depth of four inches or greater. The Contractor shall remove the silt curtain in a manner that will prevent turbidity within the waterway.

Pumping of water contained within the silt curtain or any other structure shall be done in a manner approved by the Engineer. Direct pumping of water back into the stream shall not be permitted. All water pumping operations/procedures must be approved by the Engineer. The silt curtain assembly shall remain in place until the Engineer directs the Contractor for removal. The silt curtain assembly shall remain the property of the Contractor.

Method of Measurement: The item of work will be measured as each for furnishing, installing, maintaining, replacing, relocating, and removing the floatation silt curtain assembly(ies) as required based on stream characteristics and manufactures specifications and all other related appurtenances. Only properly working silt curtains will be measured for payment.

Basis of Payment: This work will be paid for as each for SEDIMENT CONTROL, SILT CURTAIN. This price shall be payment in full for all labor, materials, transportation, handling, and related work necessary to furnish, install, maintain, replace, relocate, and remove floatation silt curtain assembly(ies) as required to complete all the contractual work.

## **WETLAND MITIGATION**

The following Special Provisions: Seed Bed Preparation, Seeding, Class 7 (Special), and RPM Tree Planting pertain to the Temporary Easement Wetland Mitigation Area located on the west side (Iowa side) of the Mississippi River. This site will be completed after construction, as directed by the District 2 Roadside Management Specialist.

## **SEED BED PREPARATION**

After construction, the ground shall be reshaped to match its original contours. The seed bed shall be prepared according to Section 250 of the Standard Specifications and designated on the plans and specifications as the Temporary Easement Wetland Mitigation Area.

Note: This area is on an island. The prime contractor shall be responsible for providing access for the landscape contractor for planting and caring for the trees, and the District 2 Roadside Manager for inspection.

## **SEEDING, CLASS 7 (SPECIAL)**

Effective November 3, 2014

This work shall be done in accordance with applicable portions of Section 250 of the Standard Specifications and shall be applied to all Temporary Easement Wetland Mitigation Areas, designated on the plans or specifications, of the Temporary Easement Wetland Mitigation Area for the Savanna/Sabula Bridge.

All exposed surfaces will be seeded with Seeding Class 7 (Special).

Seeding Class 7 (Special) shall consist of the following:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Quantity/Acre</u>
Virginia Wild Rye	Elymus virginicus var. Virginiana	5 lbs.
Canada Wild Rye	Elymus canadensis	5 lbs.
Annual Rye	Lolium multiflorum	5 lbs.
Oats	Avena sativa	6 lbs.

251.03 Mulching Seeded Areas. Delete this section.

250.04 Fertilizer and Agriculture Ground Limestone Application. Fertilizer shall be applied to the Forested Wetland Areas. When fertilizer is specified, 300 kg (270 lb.) of fertilizer nutrients per hectare (acre) shall be applied at 1:1:1 ratio as follows:

Nitrogen Fertilizer Nutrients	100 kg/ha (90 lb/acre)
Phosphorus Fertilizer Nutrients	100 kg/ha (90 lb/acre)
Potassium Fertilizer Nutrients	100 kg/ha (90 lb/acre)

Seeding Time: The RPM trees shall be planted within seven (7) days after seed bed preparation is completed. Seeding Class 7 (Special) shall be sown after the trees are installed and as soon as weather permits.

Method of Measurement: Seeding Class 7 (Special) shall be measured as specified in Article 250.08 of the Standard Specifications, in acres of surface area seeded.

Basis of Payment: Seeding Class 7 (Special), measured as provided above, will be paid for at the contract unit price per acre of SEEDING CLASS 7 (SPECIAL) as specified.

## **TREES**

This work shall be in accordance with Section 253 of the Standard Specifications except as except as noted herein and as detailed in the plans.

253.01 Description. This work shall consist of digging and preparing plant holes, and furnishing, transporting, and planting the Root Production Method (RPM) size of trees, and other materials in accordance with applicable portions of Section 253 of the Standard Specifications. These trees will be planted in the Temporary Easement Wetland Mitigation Area as shown on the plans and directed by the District 2 Roadside Management Specialist.

253.03 Planting Time. Add the following: "The RPM Trees can be planted during the Spring or Fall planting seasons as listed in Article 253.03.

253.11 Mulch Cover. Delete this section.

253.12 Wrapping. Wrapping is not required on this project.

253.14 Period of Establishment. Delete this section.

253.15 Plant Care. Delete this section.

1081.01 Materials for Planting. Add the following to (a) Quality of Plant Material part (1): ROOT PRODUCTION METHOD (RPM) Trees: The RPM trees shall have been grown in a media consisting of 80% organic materials of which 40-50% consist of pine bark. The growing flats must be a bottomless (meshed bottom) and placed on raised bottomless benches for the initial root pruning. The finished container must be 10 inches in diameter and 8 inches deep. The root mass must hold a minimum of 90% of the media and remain intact when removed from the container. The minimum caliper base must be 1/2 inch with a minimum height of 3 to 5 feet.

1081.06 Mulch Material. Delete this section.

253.16 Method of Measurement. Revise the second paragraph to read: "The excavation and disposal of excavated materials and care of the plants are included in the cost of each tree as specified."

This work shall be included in the contract unit price per each for TREES of the species, root type and plant size specified.

## **MOWING**

This work consists of mowing all Seeding Class 1 and Class 2A at the completion of the project or before winter shut down. The vegetation must be at least 6" long before mowing. The vegetation shall be mowed to obtain a height of not more than 3 inches. All debris must be cleared from the right-of-way immediately after the mowing.

This work will be paid for at the contract unit price per Acre for MOWING.



## **ROCK EMBANKMENT**

Effective: October 1, 1997

This work shall be done according to Section 205 of the Standard Specifications and as follows. Rock excavation used to construct embankments shall be placed in layers that extend full width to the foreslopes. Layering rock and soil will be allowed; however, compaction of the rock and/or broken pavement fill will be required. When a soil layer has been placed on top of rock fill and/or broken pavement, the layer shall not exceed 8 inches and will conform to embankment placement where passing density and moisture content will be required prior to any further embankment lifts being placed. Mixing wet soil and rock will not be allowed.

This work shall not be paid for separately, but shall be considered as included in the various items of excavation.

## **STONE RIPRAP**

Description: This work shall be in accordance with Section 281 of the Standard Specifications except as noted herein and as detailed in the plans.

281.04(a) The Stone Riprap required along the Iowa Causeway as bedding material for Stone Riprap, Class A5 from 1' above the Normal Water Level (N.W.L.) to the toe of the slope shall NOT be Class A1, but shall be Class A2. The Class A2 Material shall be placed on top of the ROCK FILL material below the N.W.L. A minimum thickness of 8" shall be required as bedding material for the Stone Riprap Class A5.

Method of Measurement: STONE RIPRAP, CLASS A5 placed from 1' above the N.W.L. to the toe of slope below the water will be measured for payment of required material delivered to the site meeting the approval of the engineer, in tons.

Basis of Payment: This work will be paid for at the contract unit price per ton for STONE RIPRAP, CLASS A5 utilized as embankment. A Class A2 thickness of 8" across the limits of bedding material required shall be included in the cost of Stone Riprap, Class A5. Stone Riprap, Class A5 placed above the 1' above N.W.L., required for the bridge abutments, or placed in Illinois shall be paid for by the Square Yard, unless otherwise noted.

## **ROCK FILL**

This work shall consist of supplying and placing quarry run shot rock and capping stone at the location shown in the plans.

Quarry run rock shall have a topsize of not more than 24 inches in any direction. The rock shall be sufficiently uniformly graded from coarse to fine to produce a layer with minimum voids. The rock shall be secured from a quarry ledge capable of producing Class "D" quality aggregate and shall contain no more than 10% visible seams of soil or clay.

The rock fill shall be dumped and spread into position in approximately horizontal layers not to exceed three (3) feet in thickness. It shall be placed in a manner to produce a reasonably homogeneous stable fill that contains no segregated pockets of large or small fragments or large unfilled spaces caused by bridging of the larger rock fragments.

The manner of compaction shall be approved by the Engineer.

Method of Measurement: Rock fill will be measured in its final position by taking cross sections before the work is started and again after it has been completed. The volume of material will be computed in Cubic Yards by the method of average end areas.

Basis of Payment: This work will be paid for at the contract unit price per Cubic Yard for ROCK FILL.

### **ARTICULATED BLOCK REVETMENT MAT**

Description: This work consists of furnishing and placing Articulated Block Revetment Mat, as a permanent erosion countermeasure in accordance with the grades, details, and design dimensions as shown in the plans.

This work shall be completed according to Section 285.07 of the Standard Specifications for Road and Bridge Construction, the Supplemental Specifications, and as specified herein.

General: The manufacturer shall be required to submit a design for the block mat, based on existing field conditions and hydraulics for the various plan locations, to the Resident Engineer four weeks prior to delivery of the block to the jobsite.

The minimum requirements for the block mat are as follows: Block height = 8.5" (minimum) Block width = 15.5" (minimum) Block length = 15.5" (minimum). The blocks shall be the open cell type allowing for grass to grow in the cells.

The block used shall have topsoil applied and shall be seeded with Class 4A Seeding and applicable fertilizer nutrients following the completion of its installation.

The cable, anchors and fittings (such as clamps, sleeves, stops, etc.) shall be corrosion resistant, as specified by the manufacturer.

Anchors, cables and fittings shall be used and spaced as specified by the manufacturer.

Ties between mats shall be used and spaced as specified by the manufacturer.

The block mat shall be capable of withstanding the hydraulic conditions at the proposed installation locations.

Materials: Materials shall be according to the following:

	Article/Section
(a) Portland Cement Concrete (Note 1)	1020
(b) Precast Concrete Block (Note 2)	1042
(c) Cable, Anchors and Fittings (Note 3)	1042
a. Mat Restraining Connector	
(d) Stone Riprap, Class A1 (Note 4)	1005
(e) Geotextile Fabric (Note 5)	1080
(f) Topsoil Furnish and Place, Special	1081.05(a)
(g) Seeding (Class 4A)	1081.04
(h) Mulch, Method 3	1081.06(a)

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

Note 2. The block should consist of a design as specified under "General" as noted above.

Note 3. Cable, anchors, and fittings, such as sleeves, clamps, and stops, shall be utilized according to the manufacturer's specifications and shall be corrosion resistant. The Mat Restraining Connector shall be used to tie the mat to the the Guardrail Post. This connector cable shall be of the same diameter and type of cable used that holds the articulated block mats together and shall be corrosion resistant. This cable shall then be clamped with two cable clamps for the size cable used and shall be corrosion resistant.

Note 4. Stone Riprap, Class A1 shall be utilized to fill voids in the Rockfill and to provide a level working platform for the installation of the Geotextile Fabric and Articulated Block Revetment Mat.

Note 5. Geotextile Fabric shall either be installed according Section 282 of the Standard Specifications for Road and Bridge Construction prior to placing the Articulated Block Revetment Mat or it may be secured to the bottom of the mat according to the manufacturer's specifications and installed concurrently.

All design calculations and block specifications for the proposed block, shall be supplied to the Resident Engineer for review and approval prior to ordering and furnishing any material. Materials submitted for review by the Resident Engineer shall include design charts with applicable plots of allowable shear stress vs. bed slope, as well as plots of side slope reduction factors vs. channel slope.

Equipment: The Articulated Block Revetment mats shall be attached to a spreader bar or other approved lifting device to aid in lifting and placing the mats in their proper position by use of a crane or other approved equipment by the Resident Engineer. The equipment used should be of adequate capacity to place the mats without bumping, dragging, tearing or otherwise damaging the underlying geo-textile filter fabric.

Construction Requirements:

Geotextile Fabric shall be installed beneath the articulated block revetment mat. Fabric may be installed on the face of the rock fill slope according to Section 282 of the Standard Specifications prior to placing the Articulated Block Revetment Mat, or it may be secured to the bottom of the articulated mat according to the manufacturer's specifications prior to mat installation.

A manufacturer's representative shall be available for on premise oversight during initial installation for a duration to be determined by the Resident Engineer.

Throughout the installation process the mats or blocks shall be installed in a manner so that they will maintain full contact with the geotechnical fabric and so that the geotechnical fabric will maintain full contact with the prepared bedding as shown in the plans. No individual block within the plane of placed articulating concrete mats shall protrude more than one-half inch or as otherwise specified by the Engineer.

At the side slopes, placement shall begin at the toe and proceed up the slope.

The configuration of the mat at the top and bottom of the slopes must conform to the detail drawings in the plans, unless otherwise directed by the Resident Engineer.

The mats shall be anchored or attached to adjacent mats according to the manufacturer's specifications and shall be corrosion resistant. Openings between adjacent mats shall be a maximum of 2" in width. Any space greater than 2" between the block mats shall require the installation of a Class SI Concrete seam. The placement of the Concrete seam shall be as directed by the Manufacturer's suggestions or as directed by the Resident Engineer. No additional compensation shall be provided if installations of such seams are necessary.

Following installation of the articulated block revetment mats, any voids in and around the blocks shall be filled with Topsoil meeting the approval of the Resident Engineer.

Any applied topsoil must be covered with Class 4A seeding and Mulch, Method 3 at the conclusion of each day's operations. No Topsoil shall be left uncovered at the end of any day in which Construction activities occur. The Contractor shall plan his topsoil placement operations such that these erosion control requirements are met.

The Topsoil/ Class 4A Seeding/ Mulch Method 3 shall be applied for application on the 1:1.5 slope.

Method of Measurement: Topsoil Furnish and Place, 4" - will be material obtained from outside the right-of-way conforming to Section 211 of the Standard Specifications and will be measured in square yards. This work will be paid for at the contract unit price per Square Yard for TOPSOIL FURNISH AND PLACE, 4".

Class 4A Seeding - will be measured for payment in acres of surface area seeded. This work will be paid for at the contract unit price per Acre for CLASS 4A SEEDING.

MULCH, METHOD 3- will be measured for payment over the entire area of Articulated Block Revetment Mat. This work will be paid for at the contract unit price per Acre for MULCH, METHOD 3.

ARTICULATED BLOCK REVETMENT MAT will be measured for payment in place and the area computed in Square Yards. The area for measurement will include the top of slope area, sloped surface of the mat (1:1.5 slope), and the toe of slope (keyway) as shown in the plans. No allowance will be made for overlaps.

Unless specified herein, all work and materials required to furnish and install the Articulated Block Revetment Mat shall be considered as included in the contract unit price per Square Yard for ARTICULATED BLOCK REVETMENT MAT. The Geotextile Fabric and Stone Riprap, Class A1 shall be included in the cost of the ARTICULATED BLOCK REVETMENT MAT and no additional compensation will be allowed for these items.

Basis of Payment: This work shall be paid for at the contract unit price per Square Yard for ARTICULATED BLOCK REVETMENT MAT.

## **GEOTECHNICAL FABRIC**

Description: This work shall consist of furnishing and installing GEOTECHNICAL FABRIC on a subgrade on the plans in accordance with Section 210 of the Standard Specifications.

This work will be measured in place and paid for at the contract unit price per square yard for GEOTECHNICAL FABRIC.

## **GEOTECHNICAL REINFORCEMENT**

Effective: November 30, 2010

Revised: December 16, 2014

### Description:

This work consists of furnishing and installing an integrally-formed polypropylene geotechnical grid reinforcement material. The geogrid shall have an aperture, rib and junction cross section sufficient to permit significant mechanical interlock with the material being reinforced. There shall be a high continuity of tensile strength through all ribs and junctions of the grid material to reinforce the subbase or subgrade as shown on the plans and specifications.

Submittals

The contractor shall submit the following:

- (a) Representative geogrid product sample
- (b) Geogrid product data sheet and certification from the manufacturer that the geogrid product supplied meets the requirements of this specifications.
- (c) Manufacturer's installation instructions and general recommendations.

Materials

- A. The geogrid shall be integrally formed through punching and drawing of extruded sheets of polypropylene. The geogrid shall be oriented in three substantially equilateral directions so the resulting ribs have a high degree of molecular orientation which continues at least in part through the mass of the integral node.
- B. The resulting geogrid structure shall have apertures that are triangular in shape, and shall have ribs with depth-to-width ratios greater than 1.0.
- C. The geogrid shall have typical characteristics shown in the table below, and shall be certified in writing by the manufacturer to meet these characteristics.

MATERIAL CHARACTERISTICS	TEST METHOD	DATA
polymer type		polypropylene
carbon black content	ASTM D 4218	0.50% (min.)

DIMENSIONAL CHARACTERISTICS	TEST METHOD	UNIT	DATA
open area	CW 02215	%	75 (max.)
unit weight	ASTM D 5261	oz/yd <sup>2</sup>	5.0 (min.)

PROPERTIES	Longitudinal	Diagonal	General
Rib Pitch, Nominal, mm (in)	40 (1.60)	40 (1.60)	
Rib Shape			Rectangular
Aperture Shape			Triangular
Resistance to chemical degradation <sup>(1)</sup>			100%
Resistance to ultra-violet light and weathering <sup>(2)</sup>			70%

- (1) Resistance to loss of load capacity or structural integrity when subjected to chemically aggressive environments in accordance with EPA 9090 immersion testing.
- (2) Resistance to loss of load capacity or structural integrity when subjected to 500 hours of ultraviolet light and aggressive weathering in accordance with ASTM D4355-05.

TECHNICAL CHARACTERISTICS	TEST METHOD	UNIT	DATA
junction efficiency	GRI-GG2	%	90 (min.)

The geotechnical reinforcement shall be placed as described herein or as shown on the cross sections.

Delivery, Storage and Handling:

Geogrid shall be delivered to the jobsite in such a manner as to facilitate handling and incorporation into the work without damage. Material shall be stored at temperatures above -20 degrees F and in such a manner as to prevent exposure to direct sunlight and damage by other construction activities.

Prior to the installation of the geogrid, the application surface shall be cleared of debris, sharp objects and trees. Tree stumps shall be cut to the level of the ground surface. If the stumps cannot be cut to the ground level, they shall be completely removed. In the case of subgrades, all wheel tracks or ruts in excess of 3 inches in depth shall be graded smooth or otherwise filled with soil to provide a reasonably smooth surface.

The geotechnical reinforcement shall be placed with the "roll length" parallel to the pavement. Fabric of insufficient width or length to fully cover the specified area shall be lapped a minimum of 24 inches. The geogrid should be secured in place with ties, staples, pins, sand bags or backfill as directed by the Engineer.

Installation:

The granular blanket shall be constructed to the width and depth required on the plans. Unless otherwise specified, the material shall be back-dumped on the Geogrid in a sequence of operations beginning at the outer edges of the treatment area with subsequent placement towards the middle.

Placement of material on the Geogrid shall be accomplished by spreading dumped material off of previously placed material with a bulldozer blade or endloader, in such a manner as to prevent tearing or shoving of the Geogrid. Dumping of material directly on the Geogrid will only be permitted to establish an initial working platform. No construction equipment shall be allowed on the Geogrid prior to placement of the granular blanket. If the geogrid develops wrinkles or moves significantly, an alternative method of securing it shall be used.

Unless otherwise specified in the plans or Special Provisions, the granular material, shall be placed to the full required thickness and compacted to the satisfaction of the Engineer.

Geogrid which is damaged during installation or subsequent placement of granular material, due to failure of the Contractor to comply with these provisions, shall be repaired or replaced at his expense, including costs of removal and replacement of the granular material.

Torn Geogrid may be patched in-place by cutting and placing a piece of the same Geogrid over the tear. The dimensions of the patch shall be at least 2 feet larger than the largest dimension of the tear and it shall be weighted or otherwise secured to prevent the granular material from causing lap separation.

Method of Measurement: Geotechnical Reinforcement will be measured in square yards for the surface area placed. The excavation, replacement and compaction of the granular layer shall be paid for separately.

Basis of Payment: This work will be measured in place and the area computed in square yards. The work will be paid for at the contract unit price per Square Yard for GEOTECHNICAL REINFORCEMENT.

## **TEMPORARY PAVEMENT**

This work shall consist of placing a Hot-Mix Asphalt or Portland Cement Concrete Base Course and aggregate base to serve as a temporary widening or a runaround at the locations shown on the plans. The choice of material to be used for this item is left to the Contractor to choose from the following options:

### **HOT-MIX ASPHALT OPTION**

This work shall consist of placing and compacting 12 inches of Sub-base Granular Material, Type A and constructing 2.00 inches of Hot-Mix Asphalt Surface Course and 3.25 inches of Hot-Mix Asphalt Binder Course to serve as a temporary runaround at the location shown on the plans.

### **PORTLAND CEMENT CONCRETE OPTION**

This work shall consist of placing and compacting 4 inches of Sub-base Granular Material, Type A and constructing 8 inches of Portland Cement Concrete Pavement to serve as a temporary runaround at the location shown on the plans.

Description: This work shall consist of designing, producing and constructing a HMA Surface Course on a prepared base, according to Sections 311, 406, 1030 and 1102 of the 2012 Standard Specifications, except as follows.

Materials: Surface Mixture 9.5 or 9.5 FG, Mix C, N50 shall be used.

Required Field Tests: Density Acceptance at 95% - 102% of growth curve at the frequency indicated in Article 1030.05(d)(3).

All work and materials required to complete the work listed above shall be included in the contract unit cost per Square Yard for TEMPORARY PAVEMENT.

The hot-mix asphalt and subbase shall be removed after the final stage is completed. Removal shall be paid for separately at the contract unit price per Square Yard for TEMPORARY PAVEMENT REMOVAL.



### **TEMPORARY PAVEMENT (VARIABLE DEPTH)**

Description: This work shall consist of constructing, maintaining and removing temporary pavement at a variable depth to provide a smooth transition between existing or proposed pavements as required for maintenance of traffic at the locations shown on the plans or as directed by the Engineer. This work shall be in accordance with the applicable portions of Sections 406 and 440 of the Standard Specifications and the following: The Contractor shall be required to partially remove the existing pavement as directed by the Engineer. This work shall be in accordance with Article 440.04 of the Standard Specifications for HMA pavements and Article 440.05 of the Standard Specifications for PCC pavements. The Contractor shall be required to maintain and repair the temporary pavement for the duration of the construction as directed by the Engineer.

Method of Measurement: This work will be measured for payment in tons in accordance with the applicable portions of Article 406.13 of the Standard Specifications.

Basis of Payment: This work will be paid for at the contract unit price per ton for TEMPORARY PAVEMENT (VARIABLE DEPTH). The partial removal of the existing pavement and the maintenance, repairs and removal of the variable depth temporary pavement will not be paid for separately, but shall be included in the bid price and no additional compensation will be allowed.

### **HOT MIX ASPHALT QUALITY CONTROL FOR PERFORMANCE (BMPR)**

Effective: January 1, 2012

Revised: January 16, 2015

Description. This special provision describes the procedures for production, placement and payment of hot-mix asphalt (HMA). This special provision shall apply to all pay items as specified in the plans. This work shall be according to the Standard Specifications except as modified herein.

Exceptions may be approved for small tonnage less than 800 (725 metric) tons and miscellaneous mixture applications as defined by the Engineer.

Delete Articles:	406.06(b)(1), 2 <sup>nd</sup> Paragraph	(Temperature requirements)
	406.06 (e), 3 <sup>rd</sup> Paragraph	(Pavers speed requirements)
	406.07(b)	(Rolling)
	406.07(c)	(Density)
	1030.05(a)(4, 5, 9,)	(QC/QA Documents)
	1030.05(d)(2)a.	(Plant Tests)
	1030.05(d)(2)b.	(Dust-to-Asphalt and Moisture Content)
	1030.05(d)(2)d.	(Small Tonnage)
	1030.05(d)(2)f.	(HMA Sampling)
	1030.05(d)(3)	(Required Field Tests)
	1030.05(d)(4)	(Control Limits)
	1030.05(d)(5)	(Control Charts)
	1030.05(d)(7)	(Corrective Action for Field Tests (Density))
	1030.05(e)	(Quality Assurance by the Engineer)
	1030.05(f)	(Acceptance by the Engineer)
	1030.06(a), 3 <sup>rd</sup> paragraph	(Before start-up...)
	1030.06(a), 7 <sup>th</sup> paragraph	(After an acceptable...)
	1030.06(a), 8 <sup>th</sup> paragraph	(If a mixture...)
	1030.06(a), 9 <sup>th</sup> paragraph	(A nuclear/core...)

Definitions:

- (a) Quality Control (QC): All production and construction activities by the Contractor required to achieve the required level of quality.
- (b) Quality Assurance (QA): All monitoring and testing activities by the Engineer required to assess product quality, level of payment, and acceptability of the product.
- (c) Pay Parameters: Pay Parameters shall be field Voids in the Mineral Aggregate (VMA), voids, and density. Field VMA will be calculated using the combined aggregates bulk specific gravity ( $G_{sb}$ ) from the mix design.
- (d) Mixture Lot. A lot shall begin once an acceptable test strip has been completed and the AJMF has been determined. If the test strip is waived, a subplot shall begin with the start of production. A mixture lot shall consist of four sublots unless it is the last or only lot, in which case it may consist of as few as one subplot
- (e) Mixture Sublot. A mixture subplot for field VMA, voids, and Dust/AC will be a maximum of 1000 tons (910 metric tons).

If the remaining quantity is greater than 200 but less than 1000 tons, a subplot will consist of that amount.

If the remaining quantity is less than or equal to 200 tons, the quantity shall be combined with the previous subplot.

- (f) Density Interval. Density Intervals shall be every 0.2 mile (320 m) for lift thickness equal to or less than 3 in. (75 mm) and 0.1 mile (160 m) for lift thickness greater than 3 in. (75 mm).
- (g) Density Sublot. A sublot for density shall be the average of five consecutive Density Intervals. If a Density Interval is less than 200 ft (60 m), it will be combined with the previous Density Intervals.

If one or two Density Intervals remain outside a sublot, they shall be included in the previous sublot.

If three or more Density Intervals remain, they shall be considered a sublot.

- (h) Density Test: A density test consists of a core taken at a random longitudinal and random transverse offset within each Density Interval. The HMA maximum theoretical gravity (Gmm) will be based on the running average of four Department test results. Initial Gmm will be based on the average of the first four test results. If less than four Gmm results are available, use an average of all available Department Gmm test results.

The random transverse offset excludes a distance from each outer edge equal to the lift thickness or a minimum of 4 in. (100 mm). If a core is located within one foot of an unconfined edge, 2.0 percent density will be added to the density of that core.

Quality Control (QC) by the Contractor:

The Contractor's QC plan shall include the schedule of testing for both pay parameters and non-pay parameters required to control the product such as asphalt binder content and mixture gradation. The minimum test frequency shall be according to the following table.

Minimum Quality Control Sampling and Testing Requirements

Quality Characteristic		Minimum Test Frequency
Mixture Gradation		1 per sublot
Asphalt Binder Content		
Dust/AC Ratio		
Field VMA		
Voids	G <sub>mb</sub>	
	G <sub>mm</sub>	

The Contractor's splits in conjunction with other quality control tests shall be used to control production.

The Contractor shall submit split jobsite mix sample test results to the Engineer within 48 hours of the time of sampling. All QC testing shall be performed in a qualified laboratory by personnel who have successfully completed the Department's HMA Level I training.

Quality Assurance (QA) by the Engineer:

Voids, field VMA and Dust/AC ratio: The Engineer will determine the random tonnage and the Contractor shall be responsible for obtaining the sample according to the “PFP Hot-Mix Asphalt Random Jobsite Sampling” procedure.

Density: The Engineer will identify the random locations for each density testing interval. The Contractor shall be responsible for obtaining the four inch cores within the same day and prior to opening to traffic unless otherwise approved by the Engineer according to the “PFP and QCP Random Density Procedure”. The locations will be identified after final rolling and cores shall be obtained under the supervision of the Engineer. All core holes shall be filled immediately upon completion of coring. All water shall be removed from the core holes prior to filling. All core holes shall be filled with a rapid hardening mortar or concrete which shall be mixed in a separate container prior to placement in the hole. Any depressions in the surface of the filled core holes greater than 1/4 inch at the time of final inspection will require removal of the fill material to the depth of the lift thickness and replacement.

The Engineer will witness and secure all mixture and density samples. The Contractor shall transport the secured sample to a location designated by the Engineer.

The Engineer will test one or all of the randomly selected split samples from each lot for voids, field VMA and dust/AC ratio. The Engineer will test a minimum of one sample per project. The Engineer will test all of the pavement cores for density. All QA testing will be performed in a qualified laboratory by personnel who have successfully completed the Department’s HMA Level I training. QA test results will be available to the Contractor within 10 working days from receipt of secured cores and split mixture samples.

The Engineer will maintain a complete record of all Department test results and copies will be provided to the Contractor with each set of subplot results. The records will contain, as a minimum, the originals of all Department test results and raw data, random numbers used and resulting calculations for sampling locations, and quality level analysis calculations.

If the QA results do not meet the 100% subplot pay factor limits or do not compare to QC results within the precision limits listed below, the Engineer will test all split mix samples for the lot.

<b>Test Parameter</b>	<b>Limits of Precision</b>
$G_{mb}$	0.030
$G_{mm}$	0.026
Field VMA	1.0 %

Acceptance by the Engineer: All of the Department's tests shall be within the acceptable limits listed below:

Parameter		Acceptable Limits
Field VMA		-1.0 – +3.0% <sup>1/</sup>
Voids		2.0 – 6.0%
Density:	IL-9.5, IL-19.0, IL-4.75, IL-9.5FG <sup>3/</sup>	90.0 – 98.0%
	SMA	92.0 – 98.0%
Dust / AC Ratio		0.4 – 1.6 <sup>2/</sup>

1/ Based on minimum required VMA from mix design

2/ Does not apply to SMA.

3/ Acceptable density limits for IL-9.5FG placed less than 1.25 in. shall be 89.0% - 98.0%

In addition, no visible pavement distresses shall be present such as, but not limited to, segregation, excessive coarse aggregate fracturing or flushing.

Basis of Payment: Payment will be based on the calculation of the Composite Pay Factor using QA results for each mix according to the "QCP Payment Calculation" document.

Dust / AC Ratio. A monetary deduction will be made using the pay adjustment table below for dust/AC ratios that deviate from the 0.6 to 1.2 range. If the tested subplot is outside of this range, the Department will test the remaining sublots for Dust / AC pay adjustment.

Dust / AC Pay Adjustment Table<sup>1/</sup>

Range	Deduct / subplot
$0.6 \leq X \leq 1.2$	\$0
$0.5 \leq X < 0.6$ or $1.2 < X \leq 1.4$	\$1000
$0.4 \leq X < 0.5$ or $1.4 < X \leq 1.6$	\$3000
$X < 0.4$ or $X > 1.6$	Shall be removed and replaced

1/ Does not apply to SMA.

**HOT-MIX ASPHALT MIXTURE IL-9.5FG (BMPR)**

Effective: July 1, 2005

Revised: December 28, 2010

Description. This work shall consist of constructing fine graded hot-mix asphalt (HMA) surface course or leveling binder with an IL-9.5FG mixture. Work shall be according to Sections 406, 407 and 1030 of the Standard Specifications, except as modified herein.

Materials. Revise Article 1003.03(c) of the Standard Specifications to read:

“(c) Gradation. The fine aggregate gradation for all HMA shall be FA 1, FA 2, FA 20, or FA 21. For mixture IL-9.5FG, the fine aggregate fraction shall consist of at least 67 percent manufactured sand meeting FA 20 gradation. The manufactured sand shall be stone sand, slag sand, steel slag sand, or combinations thereof.”

Mixture Design. Add the following to the table in Article 1030.04(a)(1):

“High ESAL, MIXTURE COMPOSITION (% PASSING) <sup>1/</sup>		
Sieve Size	IL-9.5FG	
	min	max
1 1/2 in (37.5 mm)		
1 in. (25 mm)		
3/4 in. (19 mm)		
1/2 in. (12.5 mm)		100
3/8 in. (9.5 mm)	90	100
#4 (4.75 mm)	60 <sup>4/</sup>	75 <sup>4/</sup>
#8 (2.36 mm)	45 <sup>4/</sup>	60 <sup>4/</sup>
#16 (1.18 mm)	25	40
#30 (600 μm)	15	30
#50 (300 μm)	8	15
#100 (150 μm)	6	10
#200 (75 μm)	4	6.5
Ratio Dust/Asphalt Binder		1.0

4/ When used as level binder placed less than 1 in. (25 mm) thick, the min and max percent passing shall each be increased 5%.

Revise the table in Article 1030.04(b)(1) of the Standard Specifications to read:

"VOLUMETRIC REQUIREMENTS					
High ESAL					
	Voids in the Mineral Aggregate (VMA), % minimum				Voids Filled with Asphalt Binder (VFA), %
N <sub>design</sub>	IL-25.0	IL-19.0	IL-12.5	IL-9.5	
50	12.0	13.0	14.0	15 <sup>1/</sup>	65 - 78
70					65 - 75 <sup>2/</sup>
90					
105					

1/ The VMA for IL-9.5FG shall be a minimum of 15.0 percent.

2/ The VFA range for IL-9.5FG shall be 65 - 78 percent."

Quality Control/Quality Assurance (QC/QA). Revise the second table in Article 1030.05(d)(4) to read:

DENSITY CONTROL LIMITS			
Mixture Composition		Parameter	Individual Test <sup>3/</sup>
IL-9.5FG	Lifts < 1.25 in. (32 mm)	N <sub>design</sub> 50 - 105	91.0 – 97.0% <sup>2/</sup>
	Lifts ≥ 1.25 in. (32 mm)	N <sub>design</sub> 50 - 105	93.0 – 97.0%
IL-9.5, IL-12.5		N <sub>design</sub> ≥ 90	92.0 – 96.0 %
IL-9.5, IL-9.5L, IL-12.5		N <sub>design</sub> < 90	92.5 – 97.4 %
IL-19.0, IL-25.0		N <sub>design</sub> ≥ 90	93.0 – 96.0 %
IL-19.0, IL-19.0L, IL-25.0		N <sub>design</sub> < 90	93.0 – 97.4 %
All Other		N <sub>design</sub> = 30	93.0 <sup>1/</sup> - 97.4 %

1/ 92.0 % when placed as first lift on an unimproved subgrade.

2/ Density shall be determined by cores or by correlated, approved thin lift nuclear gauge.

3/ Bulk Specific Gravity and Density that are determined using coated samples must be in accordance with ASTM 1188-96.

CONSTRUCTION REQUIREMENTS

Leveling Binder. Revise the table and second paragraph of Article 406.05(c) of the Standard Specifications to read:

"Leveling Binder	
Nominal, Compacted, Leveling Binder Thickness, in. (mm)	Mixture Composition
≤ 1 1/4 (32)	IL-9.5, IL-9.5 FG, or IL-9.5L
> 1 1/4 to 2 (32 to 50)	IL-9.5, IL-9.5FG, IL-9.5L, or IL-12.5

The density requirements of Article 1030.05(d)(4) shall apply for leveling binder, machine method, when the nominal, compacted thickness is: 3/4 in. (19 mm) or greater for IL-9.5FG mixtures, 1 1/4 in. (32 mm) or greater for IL-9.5 and IL-9.5L mixtures, and 1 1/2 in. (38 mm) or greater for IL-12.5 mixtures."



Compaction. Revise Table 1 in Article 406.07(a) of the Standard Specifications to read:

"TABLE 1 - MINIMUM ROLLER REQUIREMENTS FOR HMA				
	Breakdown Roller (one of the following)	Intermediate Roller	Final Roller (one or more of the following)	Density Requirement
Level Binder: (When the density requirements of Article 406.05(c) do not apply.)	P 3/	--	VS, P 3/, TB, TF, 3W	To the satisfaction of the Engineer.
Level Binder: (When placed at $\leq 1 \frac{1}{4}$ (32 mm) and density requirements apply.)	TB, 3W	P 3/	VS, TB, TF	As specified in Articles: 1030.05(d)(3), (d)(4), and (d)(7).
Binder and Surface 1/ (When the density requirements of Article 406.05(c) apply.)	P 3/, TB, 3W	P 3/	VS, TB, TF	As specified in Articles: 1030.05(d)(3), (d)(4), and (d)(7).
Bridge Decks 2/	TB	--	TF	As specified in Articles: 582.05 and 582.06.

- 1/ If the average delivery at the job site is 85 ton/hr (75 metric ton/hr) or less, any roller combination may be used provided it includes a steel wheeled roller and the required density and smoothness is obtained.
- 2/ One TB may be used for both breakdown and final rolling on bridge decks 300 ft (90 m) or less in length, except when the air temperature is less than 60 °F (15 °C).
- 3/ A vibratory roller (VD) may be used in lieu of the pneumatic-tired roller on mixtures containing polymer modified asphalt binder.

Basis of Payment. Add the following two paragraphs after the third paragraph of Article 406.14 of the Standard Specifications:

"Mixture IL-9.5FG will be paid for at the contract unit price per ton (metric ton) for LEVELING BINDER (HAND METHOD), IL-9.5FG, of the Ndesign specified; LEVELING BINDER (MACHINE METHOD), IL-9.5FG, of the Ndesign specified; or HOT-MIX ASPHALT SURFACE COURSE, IL-9.5FG, of the Ndesign specified.

Mixture IL-9.5FG in which polymer modified asphalt binders are required will be paid for at the contract unit price per ton (metric ton) for POLYMERIZED LEVELING BINDER (HAND METHOD), IL-9.5FG, of the Ndesign specified; POLYMERIZED LEVELING BINDER (MACHINE METHOD), IL-9.5FG, of the Ndesign specified; or POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, IL-9.5FG, of the Ndesign specified."

**HOT-MIX ASPHALT MIXTURE IL-19.0FG (BMPR)**

Effective: December 1, 2009

Revised: December 6, 2010

Description. This work shall consist of constructing fine graded hot-mix asphalt (HMA) binder course with an IL-19.0FG mixture. Work shall be according to Sections 406, 407 and 1030 of the Standard Specifications, except as modified herein.

Materials. Revise Article 1003.03(c) of the Standard Specifications to read:

“(c) Gradation. The fine aggregate gradation for all HMA shall be FA 1, FA 2, FA 20, or FA 21. For mixture IL-19.0FG, the fine aggregate fraction shall consist of at least 67 percent manufactured sand meeting FA 20 gradation. The manufactured sand shall be stone sand, slag sand, steel slag sand, or combinations thereof.”

Mixture Design. Add the following to the table in Article 1030.04(a)(1) of the Standard Specifications:

“High ESAL, MIXTURE COMPOSITION (% PASSING) <sup>1/</sup>		
Sieve Size	IL-19.0FG	
	min	max
1 1/2 in (37.5 mm)		
1 in. (25 mm)		100
3/4 in. (19 mm)	90	100
1/2 in. (12.5 mm)	69	89
3/8 in. (9.5 mm)		
#4 (4.75 mm)	45	60
#8 (2.36 mm)	30	45
#16 (1.18 mm)	20	35
#30 (600 μm)		
#50 (300 μm)	8	15
#100 (150 μm)	6	9
#200 (75 μm)	3.5	5.5
Ratio Dust/Asphalt Binder		1.0

Revise the table in Article 1030.04(b)(1) of the Standard Specifications to read:

"VOLUMETRIC REQUIREMENTS High ESAL						
Ndesign	Voids in the Mineral Aggregate (VMA), % minimum					Voids Filled with Asphalt Binder (VFA), %
	IL-25.0	IL-19.0	IL-19.0FG	IL-12.5	IL-9.5	
50	12.0	13.0	13.5	14.0	15	65 - 78
70						65 - 75
90						
105						

Quality Control/Quality Assurance (QC/QA). Revise the second table in Article 1030.05(d)(4) of the Standard Specifications to read:

"DENSITY CONTROL LIMITS		
Mixture Composition	Parameter	Individual Test
IL-9.5, IL-12.5	$N_{design} \geq 90$	92.0 – 96.0 %
IL-9.5, IL-9.5L, IL-12.5	$N_{design} < 90$	92.5 – 97.4 %
IL-19.0, IL-19.0FG, IL-25.0	$N_{design} \geq 90$	93.0 – 96.0 %
IL-19.0, IL-19.0FG, IL-19.0L, IL-25.0	$N_{design} < 90$	93.0 – 97.4 %
All Other	$N_{design} = 30$	93.0 <sup>1/</sup> - 97.4 %

1/ 92.0 % when placed as first lift on an unimproved subgrade."

Basis of Payment. Add the following two paragraphs after the third paragraph of Article 406.14 of the Standard Specifications:

"Mixture IL-19.0FG will be paid for at the contract unit price per ton (metric ton) for HOT-MIX ASPHALT BINDER COURSE, IL-19.0FG, of the Ndesign specified.

Mixture IL-19.0FG in which polymer modified asphalt binders are required will be paid for at the contract unit price per ton (metric ton) for POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, IL-19.0FG, of the Ndesign specified."

**HOT-MIX ASPHALT SURFACE COURSE, MIX C, N50, SPECIAL**  
 Effective: October 17, 2007

Description: This work shall consist of designing, producing and constructing a HMA Surface Course on a prepared base, according to Sections 406, 1030 and 1102 of the 2012 Standard Specifications, except as follows.

Materials: Surface Mixture 9.5 or 9.5 FG, Mix C, N50 shall be placed on frontage roads, detours, Good Neighbor Policy roads, city streets, and county or township roads. All others shall match the Mixture and N number of the adjacent mainline.

Required Field Tests: Density Acceptance at 95% - 102% of growth curve at the frequency indicated in Article 1030.05(d)(3).

This work will be paid for at the contract unit price per Ton for HOT-MIX ASPHALT SURFACE COURSE, MIX C, N50, SPECIAL.

### **HOT-MIX ASPHALT SURFACE COURSE, CUT OFF DATE**

Effective: December 8, 1998 Revised: October 17, 2007

Placement of Hot-Mix Asphalt Surface Course will not be permitted after October 15 unless approved, in writing, by the Resident Engineer.

### **HOT-MIX ASPHALT SHOULDERS, 8", SPECIAL**

This work shall be done in accordance with Section 482 of the Standard Specifications. This item shall only be used along the US 52 Causeway within Iowa.

Basis of Payment: The work will be paid for at the contract unit price per square yard for HOT-MIX ASPHALT SHOULDERS, 8" (SPECIAL).

### **CLEARING, SPECIAL**

Description: This work shall consist of extensive removal and disposal of shrubs, brush, debris (including fences, rocks, bottles, etc.) and selected trees up to six (6) inches (150 mm) in diameter. All trees and shrubs to be saved shall be carefully protected as provided by Article 201.05 of the Standard Specifications. Locations for Selective Clearing and vegetation to be cleared or saved shall be designated by the Engineer. The undesirable trees and brush shall be cut flush with the ground and all stubs or stumps shall be treated with a re-sprout herbicide approved by the Engineer to prevent re-growth from the stumps. Branches on remaining trees shall be pruned off up to 6 feet (2 meters) from the ground.

All cleared areas shall be graded, trimmed, smoothed, and finished uniformly to the satisfaction of the Engineer with equipment approved by the Engineer. Disposal of material shall be done in accordance with Article 202.03.

Method of Measurement: Clearing, Special will be measured in units of 1,000 square feet (90 square meters). Areas not meeting the satisfaction of the Engineer shall not be measured for payment. Plan quantities are estimates only. Actual quantities will be measured in place. Agreement to plan quantities will not be allowed. Basis of Payment: This work will be paid for at the contract unit price per lump sum for CLEARING, SPECIAL.

## **DEBRIS REMOVAL**

Description: The contractor will be required to remove the following items (but not limited to): piles of broken concrete, miscellaneous building debris, abandoned structures, railings, rubber tires, patio furniture and all other miscellaneous items above ground to the satisfaction and approval of the engineer. This work shall be within the State Right-of-Way and State owned property adjacent to the project construction limits. The applicable portions of Section 202 of the Standard Specifications shall apply.

General: All debris to be removed shall be disposed of in a licensed landfill, recycled or otherwise disposed of as allowed by State and Federal solid waste disposal laws and regulation and solid waste determinations of the IEPA.

Basis of Payment: This work shall be paid for at the contract unit price per lump sum for DEBRIS REMOVAL, which shall include all labor, material, permits and equipment needed to perform the work and as specified herein.

## **GUARDRAIL REMOVAL**

Effective: August 20, 1990    Revised: April 10, 2014

This work shall be done according to Section 632 of the Standard Specifications except that all removed guardrail will become the property of the Contractor.

This work will be paid for at the contract unit price per Foot for GUARDRAIL REMOVAL, measured from center-to-center of end posts.

## **CONCRETE REMOVAL (SPECIAL)**

This work shall be done according to Section 440 and 501 of the Standard Specifications and this Special Provision. This work shall consist of the removal and satisfactory disposal of a concrete per area measurement at the locations and basis of payments as noted in the contract plans.

The Contractor shall remove the concrete foundation and/ or concrete structure. All associated structural elements, shortwalls or foundations attached to the concrete foundation and/ or concrete structure both above ground and below grade shall be removed down to a plane a minimum of 1 ft below the bottom of the concrete foundation and/ or concrete structure, unless otherwise specified on the contract plans for minimum removal elevation or full removal. It shall be the responsibility of the Contractor to determine the thickness and volume of the concrete to be removed and the extent to which it is reinforced. No additional compensation will be allowed because of variations from the assumed thickness or from the thickness shown on the plans, or variations in the amount of reinforcement. Any reinforcement encountered shall be removed and disposed of properly without any additional compensation.

The Contractor shall remove any existing floor drains, sewers or drainage structures associated with the concrete foundation and/or concrete structure at no additional cost to the contract.

Holes or voids created in the earth due to concrete removal shall be filled with FURNISHED EXCAVATION such that the location can be site graded and seeded and present a neat and clean appearance on completion of the project. The Contractor shall notify the Engineer upon completion of each individual removal activity which will require backfill, prior to any backfill activity. The method of backfill and compaction must be approved by the Engineer.

Unless specifically called out in the plans, existing utilities which are still located in the ground, including (but not limited to) power poles, light poles, utility structures, fire hydrants, water main, and sewers, shall be removed per other provisions in this contract, or BY OTHERS, and shall not be included in CONCRETE REMOVAL (SPECIAL). The Contractor shall note any such existing utilities which conflict with the concrete to be removed, and request direction from the Engineer prior to removal activities at these locations. Any damage to existing utilities by the Contractor shall be repaired by the Contractor at his own expense to the satisfaction of the Engineer.

The Contractor shall use caution when removing items which will cause displacement of underlying and adjacent soils. For CONCRETE REMOVAL (SPECIAL), the Contractor shall use a method approved by the Engineer in order to minimize disturbance of the soil beneath and adjacent to the concrete.

Method of Measurement: CONCRETE REMOVAL (SPECIAL) for concrete foundations and/ or concrete slabs will be measured for payment in place, and the area computed in square yards of the horizontal surface of the concrete removal item.

Basis Of Payment: This work will be paid for at the contract unit price per square yard for CONCRETE REMOVAL (SPECIAL). FURNISHED EXCAVATION for backfill shall be included in the cost of the CONCRETE REMOVAL (SPECIAL).

### **CONCRETE RETAINING WALL REMOVAL**

This work shall consist of the removal and disposal of existing concrete retaining wall, and foundation if required, in accordance with applicable portions of Articles 501.04 and 501.05, and also all incidental and collateral work necessary to complete the removal of the concrete retaining wall in a manner approved by the Engineer. This work shall include any incidental site grading required to provide a stable 2:1 slope for remaining earth at locations of retaining wall removal.

The concrete retaining walls, including foundations if required, shall be removed down to a plane 1 ft. below the existing grade, unless otherwise specified on the contract plans for deeper or full removal.

It shall be the responsibility of the Contractor to determine the thickness of the retaining wall to be removed and the extent to which it is reinforced. No additional compensation will be allowed because of variations from the assumed thickness or from the thickness shown on the plans, or variations in the amount of reinforcement. Projecting reinforcement bars shall be cut off flush with the surface to which the old concrete has been removed.

Holes or voids created in the earth due to removal of concrete retaining walls shall be filled back to grade with suitable material as specified in the Standard Specifications, Article 1003.01. Steel slag sand shall not be used for this backfill. This cost is included in the cost of CONCRETE RETAINING WALL REMOVAL.

The Contractor shall notify the Engineer upon completion of each individual removal activity which will require backfill, prior to any backfill activity. The method of backfill and compaction must be approved by the Engineer.

The Contractor shall note any existing utilities which conflict with the retaining wall to be removed, and request direction from the Engineer prior to removal activities at these locations. Any damage to existing utilities by the Contractor shall be repaired by the Contractor at his own expense to the satisfaction of the Engineer.

The Contractor shall use caution when removing items which will cause displacement of underlying and adjacent soils. For CONCRETE RETAINING WALL REMOVAL, the Contractor shall use a method approved by the Engineer in order to minimize disturbance of the soil beneath and adjacent to the concrete.

Method of Measurement:

This work shall be measured for payment in feet along the horizontal length of CONCRETE RETAINING WALL removal.

Basis of Payment.

This work shall be paid for at the contract unit price per foot for CONCRETE RETAINING WALL REMOVAL.

## **FOUNDATION REMOVAL**

Description: The work consists of the removal and disposal of building foundations below the ground line at the locations as shown on the Plans and in accordance with the details shown on the Plans and as directed by the Engineer. This work shall be completed in accordance with the applicable portions of Section 202 of the Standard Specifications.

Method of Measurement: The work will be measured for payment in square feet.

Basis of Payment: This work will be paid for at the contract unit price per square foot for FOUNDATION REMOVAL which price shall include all required labor, materials, equipment, and all necessary incidental work.

## REMOVAL OF EXISTING STRUCTURES

Description: In addition to the requirements of Article 501, the following shall apply.

After construction of the proposed US 52/IL 64 Bridge over the Mississippi River and after the US 52/IL 64 traffic is shifted on to the new bridge, the entire existing US 52/IL 64 Bridge over the Mississippi River shall be removed in accordance with Section 501 of the Standard Specifications, in compliance with the plans, all project permits, as noted below and as directed by the Engineer. The scope of this item shall also include removal and disposal of miscellaneous items appurtenant to the structure, including but not limited to bridge expansion joint materials and anchorages, reinforcing steel, railings, drainage system components, bearings, toll plaza equipment/utilities and weigh-in-motion equipment etc. The weigh-in-motion (WIM) equipment shall be salvaged as noted in the plans. Structure excavation, including in-stream and out-of-stream work, required for the removal of structures and the necessary backfilling shall be included in this item. Coordination with the removal and/or re-grading of adjacent existing approach roadways shall also be included in this item.

Removal of the existing bridge is prohibited by the US Fish & Wildlife Service from April 1 to September 30 so as not to disturb the nesting of the brown bat.

The existing structure is to be removed within 90 days of opening the new bridge to traffic per the US Coast Guard and any deviation shall be coordinated with the US Coast Guard.

The method of removal shall be at the contractor's option within the limits of what is allowed. Explosives may be allowed for dropping the truss span into the river if approved by all stakeholders. If the truss span is dropped into the river all material must be removed from the river. Dropping the truss spans into the river via explosive demolition shall only be performed during the non-navigation season, which is approximately the months of December through February.

Demolition debris in the river may cause changes in the river currents and drainage patterns. The Contractor shall not leave demolition debris in the river for more than 7 days. The navigation channel shall be cleared per the Coast Guard permit.

The proposed method and schedule for removal shall be submitted to the US Coast Guard District Commander for approval prior to commencing such removal. Following removal, the waterway shall be cleared to the satisfaction of the District Commander.

Land piers must be removed to two feet below existing ground.

River piers must be removed down to one foot below the river bottom.

The truss span over the railroad will not be allowed to be dropped on the railroad tracks. Railroad operations shall be maintained at all times during demolition unless otherwise coordinated with the railroad.



A Protective Shield shall be provided over the full length and width of the river navigation span and full width of the span over the BNSF Railroad from the river edge to adjacent pier during removal operations.

The existing West abutment embankment shall remain in place.

Complete removal of the approach slabs of the existing bridge including HMA overlays, reinforcing bars, and sleeper slabs shall be included in the cost of Removal of Existing Structures. The Contractor shall remove the existing approach slabs in a manner so as not to damage the adjacent structures that are to remain.

The existing navigational lighting shall be salvaged and returned to the Illinois Department of Transportation – District Two.

Traffic on the adjacent new US 52 Bridge shall be maintained and protected during removal of the existing structure.

Existing Plans: Available plans for the existing structure will be made available to the Contractor by the Department upon his/her request to the Regional Engineer, Illinois Department of Transportation – District Two, 819 Depot Avenue, Dixon, Illinois 61021. The completeness of these plans is not guaranteed and no responsibility is assumed by the Department for their accuracy. Information is furnished for whatever value may be derived by the Contractor, and is to be used solely at the Contractor's risk.

Submittals: Demolition plans, procedures and timelines shall be prepared and sealed by an Illinois Licensed Structural Engineer and submitted to the Engineer for review and approval. Such plans, procedures and timelines shall also be subject to review and approval of the IDOT Bureau of Bridges and Structures. Structural plans and procedures for any proposed temporary structures used to facilitate access shall be prepared and sealed by an Illinois Licensed Structural Engineer.

Basis of Payment: This work shall not be paid for separately but shall be included in the applicable pay items according to Article 501.07 of the Standard Specifications.

## **COFFERCELL**

**Description:** A Coffercell shall be defined as a permanent structure, consisting of engineered components, designed to isolate the work area from water to enable construction of the permanent footing under dry conditions based on the top of coffercell as specified below. The top of coffercell elevation shall be 1 foot below the top of footing elevation as detailed in the plans.

The Contractor shall submit a coffercell plan for each coffercell to the Engineer for review and approval a minimum of 60 days prior to the start of construction. Coffercells shall not be installed without the Engineer's approval. Work shall not be performed in flowing water except for the installation of the coffercell. The coffercell shall be primarily composed of concrete elements that may be precast as a whole and floated into place or precast in modules and assembled in place. All structural material for the coffercell shall conform to IDOT Standard Specifications. Minimum reinforcing steel clearances shall be in accordance with the latest AASHTO LRFD Bridge Design Specifications. The coffercell shall be supported on the drilled shafts and designed to carry the weight of the wet concrete footing pour until the footing is hardened. The coffercell plan shall address the following:

- (a) The Contractor shall submit a coffercell plan which addresses the proposed methods of construction; proposed materials for construction; the construction sequence including staging; installation methods; methods for adjustments in the field, dewatering methods; a quality control plan; effluent water control measures; and the best management practices to prevent introduction of foreign material into the aquatic environment. For coffercells, it is anticipated the design will be based on the top of coffercell as specified above. The Contractor shall assume all liability, financial or otherwise for a coffercell designed for an elevation lower than the top of coffercell as specified above. The Contractor's submittal shall include detailed drawings and design calculations, prepared and sealed by an Illinois Licensed Structural Engineer.
- (b) The Coffercell plan shall detail the methods of casting, transporting, lifting, picking and placing of coffercell components in the field as well as designate any staging and precasting locations.
- (c) The Coffercell plan shall detail the methods of sealing around the drilled shaft casings to ensure a sealed dry coffercell for installation and placement of the footing reinforcement and concrete in the dry.
- (d) The Coffercell plan shall detail positive connectivity of the permanent coffercell to the proposed footing through reinforcing and/or multiple shear keys with appropriate calculations to justify connectivity such that the coffercell will remain a permanent part of the footing for the life of the structure. No component of the coffercell other than epoxy coated steel reinforcing bars shall extend into the substructure concrete without written approval of the Engineer. Reinforcing steel extending into the substructure shall not interfere with the footing reinforcement detailed in the plans.

- (e) The Coffercell plan shall detail the limits of the coffercell. The coffercell is limited to a maximum width of 2 feet on any side of the footing. The exposed exterior faces of the coffercell shall be concrete. The exterior face of the coffercell on all sides shall be smooth and not vary in width. The thickness and surface of the bottom of the coffercell may vary and shall be within justifiable limits subject to approval by the Engineer.

Basis of Payment: All work associated with furnishing and installing a coffercell when specified will be paid for at the contract unit price per each for COFFERCELL, at the locations specified.

## **DRILLED SHAFTS**

Description: In addition to the requirements of Article 516, the following shall apply.

The following requirements shall be added to Article 516.04 Submittals, (b) Installation Procedure, (6) Reinforcement Placement: “Details of how the cages will be spliced and details of any temporary internal stiffeners.”

The following requirements shall be added to Article 516.04 Submittals, (b) Installation Procedure, (7) Concrete Placement: “Details on an over pour to remove contaminated concrete and/or laitance.”

The following requirements shall be added to Article 516.04 Submittals, (b) Installation Procedure, (8) Mix Design: “The mix design shall have sufficient flowability, workability, and workability retention for tremie placement in shafts of the size shown on the drawings. The mix shall not be subject to excessive bleed or segregation.”

The requirements of Article 516.07 Slurry shall be replaced by the following: “If the Contractor proposes to use a method of slurry construction, it shall be submitted with the installation plan. Measures for preventing anomalies from sand and silt fallout shall be included in the plan. During construction, the level of the slurry shall be maintained at a height sufficient to prevent caving of the hole and shall exceed the water elevation outside the excavation at all times until the concrete has achieved initial set. 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. Mineral slurry shall not be allowed in the rock socket.”

The following requirements shall be added to Article 516.08 Excavation Cleaning and Inspection: “Methods for shaft cleanliness inspection shall include mini-SID on a minimum of one shaft per pier foundation in addition to weighted tape.”

The second paragraph of Article 516.11 shall be replaced by the following: "The shaft excavation shall be cleaned and inspected prior to placing the reinforcement cage. The reinforcement cage shall be completely assembled prior to drilling or as accepted in the installation procedure for assembly and splicing of reinforcement 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 requirements of Article 516.14 Obstructions shall be replaced by the following: "Obstructions within the Drilled Shaft in Soil shall be defined as any object 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.

Basis of Payment: This work shall not be paid for separately but shall be included in the applicable pay items according to Article 516.16 of the Standard Specifications.

### **CROSSHOLE SONIC LOGGING**

Effective: August 18, 2011

Revised: December 12, 2014

Description. This item shall consist of conducting Crosshole Sonic Logging (CSL) testing on selected drilled shafts to verify concrete quality, providing a report containing the test results and analysis. To facilitate testing, all shafts shall be equipped with access tubes. The Engineer will determine which drilled shaft(s) will have CSL testing and may expand the number of drilled shafts tested, beyond the number indicated in the summary of quantities.

The CSL test shall follow ASTM D6760, and measure the strength and time for an ultrasonic pulse to travel from a signal source in one access tube to a receiver in another access tube.

Prequalification Requirements. The CSL testing consultant shall have a minimum of two years of acceptable experience in CSL drilled shaft testing. No later than thirty (30) days prior to beginning drilled shaft construction, the Contractor shall submit to the Engineer for approval the following information:

- (a) Name, address, and phone number of the CSL testing consultant selected to perform the testing.
- (b) Names and experience of field staff conducting testing and engineer responsible for analyzing the results.
- (c) List of at least two (2) projects on which this consultant has successfully completed CSL testing. The list shall include a brief description of the project, the client or owner name and phone number, and number of shafts tested.

Submittals. No later than thirty (30) days prior to beginning drilled shaft construction, the Contractor shall submit to the Engineer for approval the following information:

- (a) Description of testing equipment and testing sequence on a typical shaft. Any modification or deviation to the testing procedures required by this special provision shall be so indicated.
- (b) The CSL tube size, materials compliance, end and top cap details, couplings, any coupling joints details, and the proposed method of attaching the tubes to the cage.
- (c) An example CSL report showing both sound and defective concrete.

Materials. The materials required for this item shall consist of the following:

- (a) The test equipment access tubes shall be either 1.5 inch (38 mm) or 2 inch (50 mm) inside diameter Schedule 80 or 40 steel pipe conforming to ASTM A53, Grade A or B, Type E, F, or S.
- (b) The grout used to fill the access tubes shall be a non-shrink 5000 psi (34.4 MPa) compressive strength grout according to Section 1024.

Equipment. The minimum requirements of the CSL testing equipment shall be as follows unless otherwise approved as part of the contractor's submittal:

- (a) A microprocessor based CSL system for display of individual CSL records, analog-digital conversion and recording of CSL data, analysis of receiver responses and printing of report quality CSL logs.
- (b) Ultrasonic source and receiver probes must be small enough to travel through 1.5 inch (38 mm) or 2 inch (50 mm) I.D. steel pipe access tubes and extend the full depth of the tube.
- (c) The probes shall be capable of producing records at a minimum frequency of 40,000Hz with good signal amplitude and energy in typical concrete.
- (d) An ultrasonic voltage pulser to excite the source with a synchronized triggering system to start the recording system.
- (e) A depth measurement device to electronically measure and record the source and receiver depths associated with each CSL signal.
- (f) Appropriate filter/amplification and cable systems for CSL testing.
- (g) An acquisition system that stores each log in digital format, with drilled shaft identification, date, time and test details, including the source and receiver gain. Arrival time data shall be displayed graphically during data acquisition.
- (h) 3D tomographic imaging software, or source for completing the work

The equipment shall be capable of providing the test results on thermal or graphical printouts with the vertical scale representing the vertical position along the shaft, and the horizontal scale representing the propagation time.

### Construction Requirements

Access tubes. The contractor shall place access tubes in all drilled shafts on the project unless otherwise indicated on the plans or approved by the Engineer. The CSL Consultant shall contact the drilled shaft contractor and provide the technical instruction and guidance on obtaining and installing the access tubes so they will provide adequate bond to the concrete and yield the necessary data.

The tubes shall have a round, regular internal diameter, free of defects or obstructions to permit the free passage of the source and receiver probes. Four access tubes shall be installed in all drilled shafts with a diameter of 4.5 feet (1.4 m) or less, five access tubes are required in shafts between 5 feet (1.5 m) and 6 feet (1.8 m) in diameter, six access tubes shall be used in 6.5 feet (2.0 m) and 7.0 feet (2.1 m) diameter shafts while eight tubes are required on larger shafts.

The Contractor shall install the tubes in each drilled shaft in a regular, symmetric pattern such that each tube is equally spaced from the others around the perimeter of the cage. Tube placement shall be such that large vertical reinforcing bars do not block the direct line between adjacent tubes. The Contractor shall securely attach the tubes to the interior of the reinforcement cage at vertical intervals not to exceed 3 feet (1 m) or otherwise secured such that the tubes remain in position during placement of the rebar cage and the concrete. The tubes shall be vertical and parallel.

The Contractor shall extend the tubes from 6 inches (150 mm) above the shaft tip to at least 3 feet (1 m) above the top of the shaft. If the shaft top elevation is below ground elevation, the Contractor shall extend tubes at least 2 feet (610 mm) above ground surface. If the drilled shaft tip elevation is extended more than 1 foot (305 mm) below the tip elevation shown in the contract plans, the Contractor shall extend the tubes using proper threaded mechanical couplings to within 6 inches (150 mm) of the final tip elevation. Any joints used to construct the full tube length shall be threaded mechanical couplings that produce a smooth interior surface, occur at the same elevation in each tube within the shaft and be watertight. Threaded water tight end caps shall be used at the bottom of each tube and a removable threaded end cap shall be provided on the top of the tubes. Duct tape, other wrapping materials, or butt welding to seal joints will not be allowed. Under no circumstance will the tubes be allowed to rest on the bottom of the shaft excavation.

The Contractor shall take care to not damage the tubes during the placement of reinforcing cage and the concrete. Before placement of the reinforcement cage into the shaft excavation, the Contractor shall record the tube lengths and tube positions along the length of the cage. After placement of concrete, measure the stickup of the tubes above the top of the drilled shaft and verify tube spacing. After placement of the reinforcement cage and within 2 hours after concrete placement, the Contractor shall fill the CSL tubes with clean, potable water, and cap them to keep out debris. The Engineer will reject tubes not filled and capped within 2 hours.

CSL Testing Procedure. The testing shall be conducted between 3 and 40 days after the drilled shaft has been placed and after concrete has attained 2/3 of the specified strength. The contractor shall provide suitable access to the top of the shafts and any electricity, grout, water or other equipment support necessary to satisfy the CSL testing requirements. When removing the access tube caps, the Contractor shall exercise care not to apply excess torque, force or stress, which could break the bond between the tubes and the concrete. The Contractor shall provide the CSL consultant with the as-constructed tube positions in each shaft including each tube length, top of tube elevation, top of shaft elevation, bottom of shaft elevation, and construction dates prior to beginning CSL testing.

The CSL consultant shall conduct CSL tests between each unique pairing of access tubes (i.e. 4 tubes have 6 different combinations, 5 have 10 combinations, 6 have 15, etc.). The CSL consultant shall perform the CSL testing with the source and receiver probes in the same horizontal plane unless test results indicate anomalies or poor concrete zones, in which case the anomaly zones shall be further evaluated with angle tests (source and receiver vertically offset in the tubes).

The CSL consultant shall report any anomalies indicated by decreased signal velocity and lower amplitude/energy signals to the Engineer at the time of testing, and conduct angle tests in the zones of the anomalies as defined by the Concrete Condition Rating Criteria (CCRC). The CSL consultant shall make CSL measurements at depth intervals of 3 inches (75 mm) or less from the bottom of the tubes to the top of each shaft. The CSL consultant shall pull the probes simultaneously, starting from the bottom of the tubes, using a depth-measuring device to electronically measure and record the depths associated with each CSL signal. The speed of ascent shall be less than 12 inches per second (300 mm/second). The CSL consultant shall remove any slack from the cables before pulling to provide for accurate depth measurements of the CSL records. In the event anomalies are detected, the CSL consultant shall conduct additional logs, as needed, to fully identify the extent of the anomaly.

If steel tube debonding occurs, a 2 inch (50 mm) diameter hole shall be drilled to below the depth of debonding for each debonded tube in order to perform the CSL testing.

**CSL Report:** The test results shall be submitted to the Engineer in the form of a report within 7 working days of completion of CSL testing. The CSL report should include but is not limited to the following:

- (a) Project identification.
- (b) Dates of testing.
- (c) Table and a plan view of each shaft tested with accurate identification of tube coordinates and tubes referenced to the site.
- (d) Tube collar elevation.
- (e) Names of personnel that performed the tests/interpretation and their affiliation.
- (f) Equipment used.
- (g) Data Logs, interpretation, analysis, and results.

The Data logs for each tube pair tested shall be included along with an analysis of the initial pulse arrival time, velocity, relative pulse energy/amplitude, and stacked waveform plotted versus depth. The Report shall list all zones defined by the Concrete Condition Rating Criteria (CCRC) in a tabular format including the percent velocity reduction and the velocity values used from the nearby zone of good quality concrete. The Report shall discuss each zone defined by the CCRC as appropriate. The Report shall base the results on the percent reduction in velocity value from a nearby zone of good quality concrete with good signal amplitude and energy as correlated to the following:

<b>Concrete Condition Rating Criteria (CCRC)</b>		
<b>CCRC (Rating Symbol)</b>	<b>Velocity Reduction</b>	<b>Indicative Results</b>
Good (G)	□ 10 %	Good quality concrete
Questionable (Q)	10 % to < 20 %	Minor concrete contamination or intrusion. Questionable quality concrete.
Poor/Anomaly (P/A)	≥ 20 %	Anomalies exist, possible water/slurry contamination, soil intrusion, and/or poor quality concrete.
Water (W)	V = 4750 fps (1450 mps) to 5000 fps (1525 mps)	Water intrusion or water filled gravel intrusion with few or no fines present.
No Signal (NS)	No Signal Received	Soil intrusion or other severe defect absorbed the signal (assumes good bond of the tube-concrete interface).



The Contractor shall not grout the CSL tubes or perform any further work on the CSL tested drilled shaft until the Engineer determines whether the drilled shaft is acceptable. Perform tomography in order to further investigate and delineate the boundaries of any zones with 20 percent or more reduction in velocity value as correlated to the CCRC. The Contractor shall process CSL data to construct easy to understand 2D/3D (2D cross-sections between tubes and 3D volumetric images for the entire shaft) color-coded tomographic images indicating velocity variations along the shaft. Location and geometry of anomaly zones shall be identified in 3D color images with detailed discussion in the CSL report.

Correction of drilled shaft. When the field testing results or report determine that an anomaly is present, the Engineer will determine if a defect exists and may direct the Contractor to submit remedial measures for approval. No compensation will be made for remedial work or losses or damage due to remedial work of drilled shafts found defective or not in accordance with the drilled shaft specifications or the construction plans. Modifications to the drilled shaft design or any load transfer mechanisms required by the remedial action must be designed, plans submitted sealed by an Illinois Licensed Structural Engineer, along with the design computations.

Access tube grouting: After CSL test results have been reviewed and the Engineer has accepted the drilled shaft or approves grouting of the tubes, the tubes and any core holes shall be dewatered and then filled with a nonshrink grout according to Section 1024. Shafts which are not initially selected for CSL testing shall not be grouted until the results of the tested CSL test shafts have been reviewed and accepted.

Method of Measurement. This work will be measured per each shaft CSL tested.

The furnishing and installing of all access tubes, and their subsequent grouting, will not be measured for payment.

Basis of Payment: This work will be paid at the contract unit price per EACH for CROSSHOLE SONIC LOGGING. This payment will constitute full compensation for furnishing all equipment, testing, analysis, and reporting for cross-hole sonic logging.

The cost for furnishing, installing, and subsequent grouting of all access tubes shall not be included in this item but shall be included in the cost of the applicable drilled shaft pay items involved.

## HANGER ASSEMBLIES FOR TIED ARCH SPAN

Description: This item shall include all furnishing, fabricating, testing and installing of the hanger assemblies in accordance with the details shown in the plans and these specifications. The hanger assemblies shall include the structural strand, anchor sockets, pin, cotter pin, anchor rods, nuts, washers, and shim plates.

### Materials:

#### A. Structural Strand.

Structural strand shall be ASTM A 586 class A coating inner wires; class C coating outer wires. All strands shall be prestretched to 55% of the breaking strength in accordance with ASTM A 586.

A test for modulus of elasticity and breaking strength shall be performed for each manufactured length of strand in accordance with ASTM A 586 Sections 7.5 and 9. The gauge length of the specimen shall be 100 inches. The strand shall have the anchor sockets attached to each end and shall be loaded through the sockets. The socketing procedures used for the test specimen and assemblies shipped to site shall be identical. If the test specimen fails to meet the minimum breaking strength requirement, another test sample shall be cut from the same manufactured length and tested. Should it also fail, the manufactured length of strand may be rejected. The test results shall be submitted to the Engineer for approval.

#### B. Anchor Sockets.

Anchor sockets labeled in the plans as open stand socket and casting anchor socket (modified) shall conform to the requirements of ASTM A 148 and federal specification RR-S-550D. They shall be galvanized in accordance with ASTM A 123.

All anchor sockets and the socketed zinc connection shall meet or exceed the minimum breaking strength of the designated structural strand attached but shall at least be grade 105/85. Each socket shall be proof loaded to 55% of the breaking strength of the attached structural strand following attachment of the structural strand.

Each socket type shall be subjected to radiographic inspection in accordance with the following frequency: 1<sup>st</sup>, 10<sup>th</sup>, 25<sup>th</sup>, and 40<sup>th</sup> socket. Radiographic shot schedule of castings shall be submitted by the Contractor to the Engineer for approval for each socket type. Radiographic inspection shall be performed by the Contractor and witnessed by the Engineer in accordance with the following ASTM Specifications, as applicable:

ASTM E 94 - Standard Recommended Practice for Radiographic Inspection

ASTM E 142 - Controlling Quality of Radiographic Testing

ASTM E 446 - Standard Reference Radiographs for Steel Castings up to 2 inches in Thickness

The Contractor shall perform and provide certification for radiographic inspections to the Engineer for approval. Inspections shall be performed by approved ASNT-TC-1A examiners.

All sockets shall be fully inspected by the magnetic particle method conforming to the requirements of ASTM E 709 and acceptance standard ASTM E 125.

The anchor sockets shall be Charpy V-notch impact tested in accordance with ASTM A 781, Supplemental Requirement S9. The testing frequency shall be the same as for the radiographic testing. The samples shall withstand an impact of 25 ft-lbf at 40 degrees Fahrenheit.

Large sand spots, inclusions and blow holes, as determined by the Engineer, shall be cause for rejection of the casting.

Defects exceeding the degree shown in the following table shall be cause for rejection of a socket.

<b>Category</b>	<b>Defect</b>	<b>Degree Permitted</b>
A	Gas Porosity	3
B	Sand Slag Inclusions	3
C	Shrinkage:	
	Type 1	3
	Type 2	3
	Type 3	3
	Type 4	3
D	Crack	Not Permitted
E	Hot Tear	Not Permitted
F	Insert	Not Permitted
G	Mottling	Not Permitted

If a socket is rejected, all other sockets from the same heat shall be radiographically inspected at the Contractor's expense.

Rejected castings shall be repaired if approved by the Engineer at the Contractor's expense. Minor defects may be removed by grinding or chipping without welding repair, provided the following requirements are complied with:

- The depth of the defect does not exceed 3 percent of the specified dimension.
- The removal of metal does not appreciably affect the strength of the casting, as determined by the Engineer.
- The remaining wall thickness is equal to or greater than the required minimum wall thickness.
- The surrounding metal is ground to a smooth contour with the elimination of apparent stress risers.

Defects exceeding those defined above may be repaired by welding if approved by the Engineer.

All proposed repair procedures shall be submitted in writing to the Engineer for approval and shall include a description of the defect, the size and the shape of the excavation, the welding specification, preheat and post heat.

Pin holes for open strand sockets shall be line bored to the tolerances and finish in accordance with Article 505.04 of the Standard Specifications.

#### C. Pins.

The pins connecting the open strand sockets to the hanger plate shall conform to the requirements of ASTM A 668 Class H. Supplemental Requirements S6 and S7 shall apply. Ultrasonic testing frequency shall be the same as for the radiographic testing of the anchor sockets.

All pins shall be fully inspected by the magnetic particle method conforming to the requirements of ASTM E 709 and acceptance standard ASTM E 125.

The pins shall be Charpy V-notch impact tested in accordance with ASTM A 673, P frequency. The samples shall withstand an impact of 25 ft-lbf at 40 degrees Fahrenheit.

Pin diameter tolerance and finish in accordance with Article 505.04 of the Standard Specifications.

The pins shall be galvanized in accordance with ASTM A 123.

#### D. Cotter Pins.

The cotter pins shall be stainless steel Type 316.

#### E. Anchor Rods, Nuts, Washers.

The anchor rods shall be galvanized and conform to the requirements of ASTM F 1554, Grade 105. The nuts and washers shall be galvanized and comply with ASTM F 1554.

Sample the rods in accordance with ASTM F1554 and conduct tests on full size specimens for proof load determination in accordance with ASTM A 370, Method 2, Yield Strength, of Annex 3.

Inspect all surfaces of all rods, nuts and washers by magnetic particle inspection that complies with ASTM E 709. Perform inspection prior to galvanizing. Any piece showing a crack, seam, or other flaw which, in the opinion of the Engineer would constitute a stress riser shall be removed from the work and replaced.

Perform a longitudinal Charpy V-notch impact test for each lot of furnished rods prior to galvanizing in accordance with ASTM F1554.S4.

Safeguard against hydrogen embrittlement that may result from the pickling and hot-dipping processes according to ASTM A 143. Test for embrittlement, in accordance with Article 9.2 of ASTM A 143 on three galvanized rods taken from the shipping lot.

F. Shim Plates.

The shim plates shall conform to the requirements of AASHTO M 270 (ASTM A 709), Grade 50. Shim plates shall be galvanized per ASTM A 123 or ASTM A 153.

Fabrication: The structural strand shall be socketed in the anchor sockets using zinc conforming to prime western grade or higher purity zinc as defined by ASTM B 6.

Measurement and marking of the structural strand shall be carried out under well defined uniform temperature conditions, under cover or at night, and while the strand is held under dead load tension.

Upon fabrication of the complete hanger assembly, the final length of each socketed hanger strands shall be measured between center of pin and base of modified socket using calibrated steel tapes and recorded to 1/16th of an inch at a measuring tension equivalent to the dead load tension as shown on the Contract Drawings. The actual length, as measured above shall not vary more than +/- 1/2 inches from the designed/calculated length (including any temperature adjustment). This deviation between the design/calculated length and actual length shall be recorded for each hanger assembly and a metal stamped tag attached to each respective bottom anchor socket of the completed hanger assembly.

Any deviation over the specified limits of +/- 1/2 inches shall be rejected and replaced with a new hanger assembly.

At the time the structural strands are measured, the Contractor shall place a permanent paint stripe on the top surface of the strand which shall be referenced to eliminate any change in length of the hanger strand due to twisting.

All hanger assemblies shall be preassembled and delivered to the site as complete units. The hanger assemblies shall be packaged on reels with a minimum diameter of 5.5 feet.

After the structural strand is prestretched, it shall not be pulled into a curve that is smaller than 5.5 ft in diameter.

The hanger assemblies shall be stored in a clean, dry area.

The Contractor shall submit certification of the following:

- manufacture of strand to this specification
- tensile strength of strand
- modulus of elasticity of strand
- actual breaking strength
- prestretching, measuring and proof loading
- material certification of strand, sockets, pins, anchor rods, nuts, washers, and shim plates

Working drawings shall be submitted for all hanger assemblies for approval by the Engineer prior to commencing with the work.

Installation: Casting anchor sockets (modified) shall be installed with center hole jack, two anchor rods on opposite corners at a time. The hangers shall be installed without twist in accordance with the following installation procedure unless otherwise required by the erection sequence and approved by the Engineer. The following installation procedure assumes that the hangers are installed with the structural steel in the cambered shape and supported at or near the hanger locations with no deformation due to gravity at those locations.

Installation Procedure:

1. Unfurl hanger with attached sockets from transporting reel when ready to install hanger.
2. Lift hanger into position.
3. Connect open strand socket to upper hanger plate and spacer plate with pin and cotter pin.
4. Verify correct alignment of hanger with alignment stripe to assure hanger has not been twisted. Remove twist as required prior to attaching to lower hanger connection.
5. Position casting anchor socket (modified) above lower hanger connection base plate.
6. Connect casting anchor socket (modified) to lower hanger connection base plate with anchor rods unstressed.
7. Stress down two anchor rods on opposite corners with center hole jack to apply a nominal force of 3 to 5 kips to the hanger.
8. With the nominal force applied to the hanger, measure the gap between the bottom of the casting anchor socket (modified) and base plate at all four corners. Average the measurements at all four corners to determine the total shim stack height required.
9. Back off the nominal force applied to the hanger and install the required total shim stack height as determined in Step 8. Note: The total shim stack height to be installed shall be a measurement of the actual shim stack height (not sum of theoretical heights).
10. Stress down two anchor rods on opposite corners with center hole jack. Stress anchor rods to approximately 50 kips per bar and verify shim measurements at all four corners are within 1/16" +/- of the required total shim stack height as determined in Step 8.
11. If measured height is not within 1/16" +/- of the required total shim stack height, relieve applied force in center hole jacks and adjust shims to correct shim height and repeat Step 10.
12. Once measured shim height is acceptable, proceed to stress down two anchor rods on opposite corners with center hole jack to the anchor rod force per bar specified on the plans.
13. Stress down two remaining anchor rods on opposite corners with center hole jack to the anchor rod force per bar specified on the plans.
14. Measure and record total shim height installed.

As-built drawings shall report the actual hanger lengths of each individual hanger and the installed shim thickness.

Basis of Payment: The cost of furnishing, fabricating, testing and installing of the hanger assemblies including structural strand, anchor sockets, pins, anchor rods, nuts, washers, cotter pins, and shim plates shall be included in the lump sum price bid for HANGER ASSEMBLIES FOR TIED ARCH SPAN.

## **FABRICATION AND ERECTION OF STEEL TIED ARCH STRUCTURE**

Description: In addition to the requirements of Article 505, the following shall apply.

Fabrication: Only fabricators meeting the requirements of the AISC Quality Certification Program, "Major Steel Bridges (Cbr)" with "Fracture Critical Member Endorsement (F)", or approved equal, may be used to fabricate the steel tied arch structure. Prior to approval for fabrication, the results of the latest AISC certification review shall be made available to the Engineer to determine if items critical to successful fabrication meet the needs of the specific work.

All welding, welder qualifications, welding procedure qualification, and inspection of welds shall be performed in accordance with AASHTO/AWS D1.5 Bridge Welding Code; Article 505.04 of the Standard Specifications; and the requirements herein.

Prior to the start of qualifying welders, tackers, welding operators, and welding procedures, the Contractor and the Engineer shall have a conference to ensure that agreement has been reached regarding the details of the procedures, the sequence of welding to be followed, the handling of materials to be inspected, the status of qualifications for welders and welding operators, and the approval of electrodes, wire, flux, and other welding materials and equipment. It shall be the Contractor's responsibility to call this conference at their fabricating plant at a time mutually convenient to all parties concerned.

One copy of the proposed welding procedures giving complete details for each type and thickness of joint to be used on the project, whether prequalified or subject to qualification tests, shall be submitted to the Engineer for approval prior to or at the time of submitted shop drawings. The shop drawings submitted shall indicate the welding procedure to be used for each joint. No fabrication, preparation work or welding shall commence until the fabricator receives approved shop drawings, welder qualifications, and weld procedures.

Holes and connections to the tied arch steel members to accommodate conduits, junction boxes and other items related to lighting and electrical plans shall be detailed in the shop drawings and approved by the Engineer.

Edge Finish: All exposed corners of plate cut edges, whether gas cut, plasma cut, oxygen cut or sheared, shall be rounded to 1/16" radius or equivalent flat surface at a suitable angle.

Welding: Minimizing the distortion of the box sections and other complex steel sections during welding is of prime importance and is the responsibility of the contractor. Distortion or warping due to weld shrinkage shall be controlled by the use of proper welding fabrication sequences and by use of temporary bracing or struts if necessary. Welding fabrication sequences shall be shown on the shop drawings. Review and comment by the Engineer on the sequences does not relieve the contractor of his responsibility to fabricate the work within the tolerances specified in the AASHTO/AWS D1.5M/D1.5 Bridge Welding Code and within this specification.

No temporary or permanent welds, if not shown on the plans or permitted in the specifications, shall be made without specific written authorization by the Engineer. Tack welds on fills shall not be permitted.

Tack welds which will be fully incorporated into a final weld, shall be allowed at the discretion of the fabricator.

Permanent tack welds shall be placed back about 3" from the ends of the final welds so that the final welds are not started or ended on a tack weld.

Temporary tack welds used for fitting purposes shall not be used. If temporary tack welds are necessary, it shall be approved by the Engineer.

Under no circumstances shall temporary tack welds be used on any steel designated HPS50W in the plans.

Miscellaneous and inadvertent arc strikes on the steel shall be avoided. If such strikes occur, they shall be ground flush and tested for cracks using either Liquid Penetrant or Magnetic Particle testing. The Engineer shall be informed about all damages that gouge over 1/8" and a repair detail shall be submitted to the Engineer for approval.

Minor repairs to submerged arc welds will be permitted by manual welding with low hydrogen electrodes. Appropriate preheat shall be applied prior to such welding.

Any cracks which develop in the base metal shall only be repaired with a procedure approved by the Engineer.

Grinding of welds shall be in the direction of final stress.



Except as may be otherwise specified elsewhere, welded connections in the arch span shall be tested as follows:

100 percent of all butt weld splices in the web and flanges of the floor beams shall be tested by ultrasonic and radiographic testing. 100 percent of all butt weld splices in the flanges (top and bottom plates) of the arch ribs, ties and knuckles, 100 percent of all butt weld splices in the webs of the ties and knuckles, and 50 percent of each butt weld splice in the webs of the ribs shall be tested by radiographic and ultrasonic testing. In the web splices of the ribs, the maximum center-to-center spacing for radiographs shall be two times the length of the radiograph. Butt welds in the plates of the ties shall be staggered with minimum 6 foot spacing between butt welds in any plate of the tie. Butt welds in the flanges and webs of the ribs and floor beams shall be staggered with minimum 6 foot spacing. Butt welds in the knuckle web plates shall be parallel to the tie top flange and located a minimum of 1 foot above the tie top flange. The location of all butt welds shall be detailed in the shop drawings and approved by the engineer.

Fillet welds and partial penetration groove welds (and other welds which due to type or location cannot be tested by ultrasonic testing) shall be tested by magnetic particle testing in accordance with the requirements of Article 6.7.6 of the AWS Code. 100 percent of each weld length shall be tested until quality control has been established to a level of acceptability per AWS Code as determined by the Engineer. If quality control level is acceptable, then 30 percent of each weld length shall be tested (10 percent at each end of a weld and 10 percent at random lengths and spaces in between). If the 30 percent testing reveals defects unacceptable to the Engineer, 100 percent testing shall be reinstated until acceptable quality control has been again established. This procedure shall be repeated as often as may be considered necessary by the Engineer.

If any unacceptable defects are found in any test length of weld, the full length of the weld or 5 feet on either side of the test length, whichever is less, shall be tested. Welds requiring repair shall be retested after repairs are made.

Shop Assembly: Article 505.05 of the Standard Specifications shall be modified as follows:

The arch ribs, tie girders, and knuckles for each arch shall be fully assembled in the shop. Assemble the floor system full length, including both tie girders and knuckles and all floor beams. All arch rib and tie girder coordinate work points for cambered shape of each arch shall be surveyed, recorded and submitted to the Engineer for approval. All shipments shall be held until the Engineer has approved the fabricated geometry.

If high strength bolts are used for shop fit-up, they shall be discarded and new bolts shall be used to erect the arch in the field.

Tolerances: In addition to the requirements of Article 505.04 and the AASHTO/AWS D1.5 Bridge Welding Code, the following tolerances are specified for the tied arch structure:

1. The tolerances specified herein are combined tolerances for fabrication and installation.
2. Arch Ribs:
  - a. Straightness (out of plane) within one field section:  $\pm 3/8"$
  - b. Length:  $\pm 1/8"$  each field section
  - c. Camber:  $\pm 1/4"$  each field section
  - d. Upper Hanger Plate Length (length between rib work point and pin hole):  $\pm 1/8"$
  - e. Straightness (out of plane) in any portion of an arch rib after assembled:  $\pm 3/8"/100\text{ft}$
  - f. Cumulative out of plane tolerance for an entire arch rib assembly:  $\pm 3/4"$
  - g. Cumulative camber (in plane) for an entire arch rib assembly:  $\pm 1/2"$
  - h. Upper hanger plate orientation out of plane:  $\pm 5/1000$  radians
  - i. Upper hanger plate orientation in plane:  $\pm 7.5/1000$  radians
3. Tie Girders:
  - a. Length:  $\pm 1/8"$  each field section
  - b. Camber:  $\pm 1/4"$  each field section
  - c. Cumulative camber (in plane) for an entire tie girder assembly:  $\pm 1/2"$
4. Floor Beams:
  - a. Sweep:  $\pm 1/2"$
  - b. Total length:  $\pm 1/4"$
5. Rib Bracing:
  - a. Length:  $\pm 1/4"$  each field section
6. Cumulative total length tolerance for entire arch rib and tie girder assembly:  $\pm 1"$

Erection Contractor: The Contractor or sub-Contractor performing the erection of the tied arch is herein referred to as the Erection Contractor.

Erection Plan: The Erection Contractor shall retain the services of an Illinois Licensed Structural Engineer for the completion of a project-specific erection plan. The structural engineer shall have Illinois Department of Transportation prequalification in complex bridges and a minimum of two other project experiences in the design of steel tied arch bridges over 300 feet long and/or analysis and preparation of tied arch erection plans for steel tied arch bridges over 300 feet long. The structural engineer, herein referred to as the Erection Engineer, shall sign and seal the erection plan, drawings, and calculations for the proposed erection of the tied arch.

The erection plan shall be complete in detail for all phases, stages, and conditions anticipated during erection. The erection plan shall include structural calculations and supporting documentation necessary to completely describe and document the means, methods, temporary support positions, and loads necessary to safely erect the tied arch in conformance with the contract documents and as outlined herein. The erection plans shall address and account for all items pertinent to the tied arch (structure) erection and its individual structural components (elements) including such items as sequencing, falsework, temporary shoring and/or bracing, structure and element stability, crane positioning and movement, means of access, pick points, structure and element shape, permissible deformations and roll, interim/final plumbness, element placement and connections, bolting and anchor bolt installation sequences and procedures, and blocking and anchoring of bearings. The Erection Contractor shall be responsible for the stability of the partially erected structure during all phases of the tied arch erection.

The tied arch cambered coordinates provided in the plans are for the unloaded shape of the arch and tie girder (no self weight). The Erection Contractor's erection sequence shall consider this fabrication geometry and its effects in fit up during erection.

A suggested erection sequence representing the sequence of construction assumed in the design of the tied arch superstructure has been included as part of the contract plans. The erection plan shall contain an erection sequence which may be similar to the suggested erection sequence shown on the contract plans or may be an alternate sequence. Utilization of this suggested erection sequence as presented is not mandatory. If the Erection Contractor elects to use the suggested erection sequence provided, the Erection Contractor shall ascertain the practicality and shall assume complete responsibility for the erection sequence proposed in the erection plan. The erection engineer shall provide structural calculations of the tied arch confirming final forces and stresses, including any locked-in stresses resulting from erection, within the tied arch members are adequate for all strength, service and extreme event limit states in the final condition and provide revised camber and erection geometry based on the actual sequence of erection.

The erection plan shall also include, but not necessarily be limited to:

- Documenting any temporary river traffic shut-down for floating in the tied arch or other operations, the sequence and manner for moving the tied arch to the final position and transferring loads to the permanent bearings as well as the sequence, and provisions for casting the deck slab.
- Details of the disposition and use of special erection equipment, falsework, jacking equipment, temporary bracing and the like, including all loads or reactions from such equipment applied to the structure during erection and sequences and timings of these effects in accordance with the erection schedule.
- Documentation of the proposed location, limits and remediation of the temporary staging work areas.
- Methods and procedures for verifying and correcting any discrepancies in the surveyed panel point locations after completion of erection of the steel superstructure and all dead load has been placed on the structure.

The structural calculations shall also include, but not necessarily be limited to:

- The expected bearing, shear, compression, and tensile forces and stresses in the tied arch as may be produced with the Contractor's proposed sequence and method of erection.
- Minimum and maximum vertical and horizontal reactions at all temporary support locations.
- Design of any temporary foundations required to support falsework.
- Design of all falsework and temporary bracing and subsequent temporary connections to the permanent structure.
- Verification that the permanent structure is not overstressed during erection, including any forces applied to the permanent piers or adjacent structures.

The erection plans, calculations and procedures shall be submitted as one package to the Engineer for review and acceptance prior to starting the steel erection. Review, acceptance and/or comments by the Department shall not be construed to guarantee the safety or final acceptability of the work or compliance with all applicable specifications, codes, or contract requirements, and shall neither relieve the Contractor of the responsibility and liability to comply with these requirements, nor create liability for the Department. Significant changes to the erection plan in the field must be approved by the Erection Engineer and accepted by the Engineer for the Department.

Survey: The Contractor shall be responsible for conceiving a system of monitoring points that allows for accurate verification of all Arch Rib and Tie Girder Work Points during erection and comparing their relative relationship with the dimensions measured during shop assembly. The Contractor shall record the station, offset and elevation of these points and calculate the location of the theoretical work points. All surveys shall be performed in the early morning hours to limit the differential effects of the sun. This shall be done at a minimum:

1. After all superstructure steel and hangers have been erected, all temporary bracing has been removed and the structure is resting on its final bearing supports.
2. After all dead loads have been placed on the structure.

All erection equipment, deck formwork and other items affecting the deflected shape of the structure shall be removed from the structure for the duration of these surveys. The results shall be submitted to the Engineer for review.

Submittals: The Contractor shall provide the following submittals for review by the engineer.

1. The first deliverable shall be a list of submittal packages the Contractor is planning to provide along with the dates they will be submitted. The list of submittal packages shall be provided a minimum of 14 days prior to submittal of any of the packages below.
2. Tied Arch Shop Drawings shall be submitted a minimum of 30 days before the start of fabrication of the respective element. The Engineer shall have 14 days for the first review of a drawing and 7 days for any subsequent submittal reviews of the same drawing.
3. Tied Arch Fabrication and Welding Certifications and Procedures shall be submitted a minimum of 30 days before the start of fabrication of any element of the tied arch. The Engineer shall have 14 days for the first review of the certifications and procedures and 7 days for any subsequent review of the same procedures.
4. Tied Arch Shop Assembly setup and procedures shall be submitted a minimum of 30 days prior to the assembly in the shop. The Engineer shall have 14 days for the first review and 7 days for any subsequent review.
5. Tied Arch Tolerance verification procedures for fabrication and erection shall be submitted a minimum of 30 days prior to fabrication and erection respectively of elements affected. The Engineer shall have 14 days for the first review and 7 days for any subsequent review of the same procedures.
6. The Erection Plan shall be submitted a minimum of 60 days before the start of erection of any elements of the tied arch superstructure. The Engineer shall have 30 days for the first review and 14 days for any subsequent review of changes to the Erection Plan. Components of the erection plan related to erection site preparation shall be submitted a minimum of 30 days prior to beginning prepping the site for construction. The Engineer shall have 14 days for the first review and 7 days for any subsequent review related to site preparations.
7. The Survey Plan shall be submitted a minimum of 30 days before the start of erection of any elements of the tied arch superstructure. The Engineer shall have 14 days for the first review and 7 days for any subsequent review.
8. A Communications Plan shall be submitted a minimum of 30 days before the start of erection of any elements or transport of the tied arch superstructure. The communications plan shall include the authority to stop erection or transport, communications hardware, communications approach and coordination with third parties such as the US Coast Guard. The Engineer shall have 14 days for the first review and 7 days for any subsequent review.

Construction Requirements: The Contractor is completely responsible for protection of the structural integrity of the tied arch structure from fabrication to final approved placement of concrete wearing course, barriers, railings, expansion joints and lighting. Any damage to any part of the structure during erection shall be repaired or replaced by the Contractor, to the satisfaction of the Engineer at no additional cost to the Department.

The Contractor shall be responsible for maintaining temporary work/staging areas.

Any damaged shop painted areas of the steel shall be repaired to the satisfaction of the Engineer at the Contractor's expense.

Changes in the approved Erection Plan shall not be allowed unless approved in writing by the Engineer.

Upon completion of construction operations and Engineer approval of final superstructure placement, all equipment shall be removed and all existing ground lines and site conditions modified by the Contractor to facilitate construction activities shall be restored to the undamaged existing condition unless approved otherwise by the Engineer.

The Contractor shall coordinate all restrictions to river traffic with the Army Corp of Engineers and U.S. Coast Guard.

The Contractor shall be responsible for obtaining permission to access private property if required, and to obtain all required permits for working in and around the watercourse as required.

Basis of Payment: This work shall not be paid for separately but shall be included in the applicable pay items according to Article 505.13 of the Standard Specifications.

## **ERECTION OF STEEL GIRDER STRUCTURES**

Description: In addition to the requirements of Article 505.08(e), the following shall apply.

The Contractor or sub-Contractor performing the erection of the structural steel is herein referred to as the Erection Contractor.

Erection Plan: The Erection Contractor shall retain the services of an Illinois Licensed Structural Engineer, experienced in the analysis and preparation of long span steel girder erection plans, for the completion of a project-specific erection plan for the steel girder spans of Units 1 and 3. The structural engineer, herein referred to as the Erection Engineer, shall sign and seal the erection plan, drawings, and calculations for the proposed erection of the structural steel.

The erection plan shall be complete in detail for all phases, stages, and conditions anticipated during erection. The erection plan shall include structural calculations and supporting documentation necessary to completely describe and document the means, methods, temporary support positions, and loads necessary to safely erect the structural steel in conformance with the contract documents and as outlined herein. The erection plans shall address and account for all items pertinent to the steel erection including such items as sequencing, falsework, temporary shoring and/or bracing, girder stability, crane positioning and movement, means of access, pick points, girder shape, permissible deformations and roll, interim/final plumbness, cross frame/diaphragm placement and connections, bolting and anchor bolt installation sequences and procedures, and blocking and anchoring of bearings. The Erection Contractor shall be responsible for the stability of the partially erected steel structure during all phases of the steel erection.

The erection plans and procedures shall be submitted to the Engineer for review and acceptance prior to starting the work. Review, acceptance and/or comments by the Department shall not be construed to guarantee the safety or final acceptability of the work or compliance with all applicable specifications, codes, or contract requirements, and shall neither relieve the Contractor of the responsibility and liability to comply with these requirements, nor create liability for the Department. Significant changes to the erection plan in the field must be approved by the Erection Engineer and accepted by the Engineer for the Department.

Basis of Payment: This work shall not be paid for separately but shall be included in the applicable pay items according to Article 505.13 of the Standard Specifications.

### **TEMPORARY FACILITIES INSTALLED BY CONTRACTOR**

Description. This work shall consist of all labor, materials and equipment necessary to provide and subsequently remove temporary facilities required and installed by the contractor to enable access to work areas during construction.

General Construction Requirements. All means and methods employed for the installation and subsequent removal of temporary facilities to be installed by the contractor for access or for any other reason shall be in compliance with all project permits.

The plans for temporary facilities shall be submitted to the Engineer for review and acceptance prior to starting the work. Review, acceptance and/or comments by the Department, USACE, and the USCG shall not be construed to guarantee the safety or compliance with all applicable specifications, codes, or contract requirements, and shall neither relieve the Contractor of the responsibility and liability to comply with these requirements, nor create liability for the Department, USACE, nor the USCG. The Contractor is responsible for meeting all IDOT, USACE, FAA and the USCG requirements. No additional compensation or time will be allowed for USACE or USCG restrictions. The plans shall be submitted 90 days prior to beginning work. The Contractor shall not proceed with work until written approval from each of the approval agencies has been received. Approval agencies are IDOT, USACE, and the USCG. Significant changes to the plans in the field must be approved by the Engineer.

The Contractor may elect to use a temporary work bridge or other temporary structure in the river and floodplains to facilitate construction. The construction of the River Bridge may take place during periods of high water. The Contractor shall consider the effects of scour on any temporary substructures and on the existing and proposed bridge foundations. The Contractor shall consider the effects of high flood waters on any temporary superstructures and ensure that any temporary means does not impact or adversely affect the existing or proposed substructures.

If temporary barges, work bridges, or platforms are used for access in the river, the Contractor shall keep the navigation waterway clear and open in compliance with the project permits.

After a temporary work bridge, platform or any other facility is no longer needed, it shall be removed per Article 513.08 of the Standard Specifications for Road and Bridge Construction.

Haul roads may constitute part of the temporary facilities installed and subsequently removed by the contractor. Haul roads shall be constructed with materials (i.e., coarse aggregate) meeting the requirements of Article 1004.04 of the Standard Specifications, except if pit run gravel is used, prior approval of the source may be required by the Engineer. Upon completion of the work, the haul road shall be removed and the floodplains returned to their original contours or the contours called for in the plans.

FAA Notice of Construction.

The Department has on file a Federal Aviation Administration (FAA) "Notice of Proposed Construction or Alteration" for the permanent structure. The determination of the Notice of Proposed Construction or Alteration does not include temporary construction equipment such as cranes or derricks which may be used during the actual construction phase of the project. Such equipment which has a height greater than the proposed structure, and a height which would exceed the Notice Standard of Part 77 of the Federal Aviation Regulations require a separate Notice. If prior notice for temporary equipment is required, the Contractor shall complete and e-file FAA Form 7460-1 to the Federal Aviation Administration, online at <https://oeaaa.faa.gov> along with a printed copy to the Engineer.

In addition, the Contractor shall submit a Supplemental Notice on FAA Form 7460-2. The Supplemental Notice shall be submitted prior to start of construction, and again within 5 days after the permanent structure reaching its greatest height. If additional supplemental notices are required during the prosecution of the work, the Contractor shall be required to submit these notices as well. These submittals shall also be filed online along with a printed copy delivered to the Engineer.

Submittals. If the Contractor elects to use a temporary work bridge, structural plans and procedures shall be prepared and sealed by an Illinois Licensed Structural Engineer (SE), and submitted to the Engineer for review and approval.

Basis of Payment. Temporary facilities installed by the contractor and their subsequent removal will not be measured nor paid for separately but shall be considered as included in the unit cost of the various related pay items in the contract.

**HOT DIP GALVANIZING FOR STRUCTURAL STEEL**

Effective: June 22, 1999

Revised: December 9, 2014

Description. This work shall consist of surface preparation and hot dip galvanizing all structural steel specified on the plans and painting of galvanized structural steel when specified on the plans.

Materials. Fasteners shall be ASTM A 325 Type 1, High Strength bolts with matching nuts and washers.



Fabrication Requirements. To insure identification after galvanizing, piece marks shall be supplemented with metal tags for all items where fit-up requires matching specific pieces.

After fabrication (cutting, welding, drilling, etc.) is complete, all holes shall be deburred and all fins, scabs or other surface/edge anomalies shall be ground or repaired per AASHTO M 160. The items shall then be cleaned per Steel Structures Painting Council's Surface Preparation Specification SSPC-SP1 (Solvent Cleaning) and SSPC-SP6 (Commercial Blast Cleaning). All surfaces shall be inspected to verify no fins, scabs or other similar defects are present.

The Contractor shall consult with the galvanizer to insure proper removal of grease, paint and other deleterious materials prior to galvanizing.

#### Cleaning Structural Steel

If rust, mill scale, dirt, oil, grease or other foreign substances have accumulated prior to galvanizing, steel surfaces shall be cleaned by a combination of either:

- caustic cleaning and cleaning according to SSPC-SP8 (Pickling) or
- cleaning according to SSPC-SP1 (Solvent Cleaning) and SSPC-SP6 (Commercial Blast Cleaning).

Special attention shall be given to the cleaning of corners and reentrant angles.

#### Surface Preparation and Hot Dip Galvanizing

General. Surfaces of the structural steel specified on the plans shall be prepared and hot dip galvanized as described herein. The Contractor shall submit to the Engineer drain/vent hole locations and details and any other modifications proposed to facilitate galvanizing.

Surface Preparation. A flux shall be applied to all steel surfaces to be galvanized. Any surfaces which will receive field-installed stud shear connectors shall not be galvanized within 2 in. (50 mm) of the stud location. Acceptable masking agents include: "Stop Galv" (Transtrade), "Maskote Zinc Stop-Off" (Pyrotek), and "Galva Stop" (Puma Chemical). Either the entire area receiving studs or just individual stud locations may be left ungalvanized; where the entire area is to be left ungalvanized, a minimum 1 inch wrapping of the galvanizing from the bounding edges shall be provided. The following steel surfaces of bearings shall not be galvanized: stainless steel surfaces, surfaces which will be machined (except for fixed bearing sole plates), and surfaces which will have TFE, elastomer, or stainless steel parts bonded to them.

The cleaned surfaces shall be galvanized within 24 hours after cleaning, unless otherwise authorized by the Engineer.

Application of Hot Dip Galvanized Coating. Steel members, fabrications and assemblies shall be galvanized by the hot dip process in the shop according to AASHTO M 111.

Bolts, nuts, washers and steel components shall be galvanized in the shop according to ASTM F 2329.

All steel shall be safeguarded against embrittlement according to ASTM A 143. Water quenching, chromate conversion coating, or any other passivating treatment shall not be used on any steel work that is to be painted. All galvanized steel work shall be handled in such a manner as to avoid any mechanical damage and to minimize distortion. Galvanized surfaces which will have concrete poured against them shall be chemically passivated or otherwise protected by a method approved by the Engineer.

Beams and girders shall be handled, stored and transported with their webs vertical and with proper cushioning to prevent damage to the member and coating. Members shall be supported during galvanizing to prevent permanent distortion.

Hot Dip Galvanized Coating Requirements. Coating weight, surface finish, appearance and adhesion shall conform to requirements of ASTM A 385, ASTM F2329, AASHTO M 111 or AASHTO M 232, as appropriate.

Any high spots of zinc coating, such as metal drip lines and rough edges, left by the galvanizing operation in areas that are to be field connected or in areas that are to be painted shall be removed by cleaning per SSPC-SP2 (Hand Tool Cleaning) or SSPC-SP3 (Power Tool Cleaning). The zinc shall be removed until it is level with the surrounding area, leaving at least the minimum required zinc thickness.

Shop assemblies producing field splices shall provide 1/8 in. (3 mm) minimum gaps between ends of members to be galvanized. At field splices of beams or girders, galvanizing exceeding 0.08 in. (2 mm) on the cross-sectional (end) face shall be partially removed until it is 0.04 in. to 0.08 in. (1 to 2 mm) thick.

Testing of Hot Dip Galvanized Coating. Inspection and testing of hot dip galvanized coatings shall follow the guidelines provided in the American Galvanizers Association publication "*Inspection of Products Hot Dip Galvanized After Fabrication*". Sampling, inspection, rejection and retesting for conformance with requirements shall be according to AASHTO M 111 or AASHTO M 232, as applicable. Coating thickness shall be measured according to AASHTO M 111, for magnetic thickness gage measurement or AASHTO M 232, as applicable.

All steel shall be visually inspected for finish and appearance.

Bolts, nuts, washers, and steel components shall be packaged according to ASTM F 2329. Identity of bolts, nuts and washers shall be maintained for lot-testing after galvanizing according to Article 505.04(f)(2) for high strength steel bolts.

A notarized certificate of compliance with the requirements listed herein shall be furnished. The certificate shall include a detailed description of the material processed and a statement that the processes used met or exceeded the requirements for successful painting of the surface, where applicable. The certificate shall be signed by the galvanizer.

Repair of Hot Dip Galvanized Coating. Surfaces with inadequate zinc thickness shall be repaired in the shop according to ASTM A 780 and AASHTO M 111.

Surfaces of galvanized steel that are damaged after the galvanizing operation shall be repaired according to ASTM A 780 whenever damage exceeds 3/16 in. (5 mm) in width and/or 4 in. (100 mm) in length. Damage that occurs in the shop shall be repaired in the shop. Damage that occurs during transport or in the field shall be repaired in the field.

After galvanizing, contact surfaces for any bolted connections shall be roughened by hand wire brushing or according to SSPC-SP7 (Brush-Off Blast Cleaning). Power wire brushing is not allowed.

All bolt holes shall be reamed or drilled to their specified diameters after galvanizing. All bolts shall be installed after galvanizing.

### Surface Preparation and Painting

Surface Preparation. When galvanized steel surfaces are specified to be painted they shall be clean and free of oil, grease, and other foreign substances. Surface preparation necessary to provide adequate adhesion of the coating shall be performed according to ASTM D6386. Surface preparation shall include, but not be limited to the following:

All galvanized steel surfaces that are to be painted shall be cleaned according to SSPC-SP1 (Solvent Cleaning). 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.

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.

Following galvanizing, thickness readings shall verify the acceptable thickness of the galvanizing according to AASHTO M111/ASTM A123.

Paint Requirements. The paint materials (epoxy intermediate coat and aliphatic urethane finish coat) shall meet the requirements of the Articles 1008.05(d) and (e) of the Standard Specifications.

All paint materials for the shop and field shall be supplied by the same manufacturer, and samples of components submitted for approval by the Department, before use.

Paint storage, mixing, and application shall be according to Section 506 of the Standard Specifications 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.

Submittals. Submittals shall be according to Article 506.03 of the Standard Specifications.

Quality Control and Quality Assurance. Quality Control and Quality Assurance shall be according to Article 506.04 of the Standard Specifications.

Shop Application of the Paint System. The areas to be painted shall receive one full coat of an epoxy intermediate coat and one full coat of an aliphatic urethane finish coat. The film thickness of each coat shall be according to Article 506.09(f)(2) of the Standard Specifications. The color of the topcoat shall be as specified elsewhere in the contract.

Hold Point Notification for Field Painting. Hold Point notification for field painting shall be according to Article 506.05 of the Standard Specifications.

Inspection Access and Lighting. Inspection access and lighting shall be according to Article 506.06 of the Standard Specifications.

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), tie- or wash-coated if applicable, and then painted or touched up with the paint specified for shop application (the intermediate coat and/or the finish coat):

- exposed unpainted areas at bolted connections
- areas where the shop paint has been damaged
- any other unpainted, exposed areas as directed by the Engineer.

Said field touch-ups shall be according to Article 506.10 of the Standard Specifications unless otherwise specified herein.

Repair of Coatings for Painted Galvanized Steel. For painted galvanized steel, remove and repair all damaged and/or defective paint or galvanizing that does not expose the steel by power tool cleaning in accordance with SSPC-SP3. When the damage or defect extends to bare steel, is localized, and is less than ½ square foot in size, clean the surface by power tool cleaning with a Bristle Blaster in accordance with SSPC-SP11 with a surface profile of 1.5 to 2.5 mils (35 to 65 µm) unless the coating manufacturer requires a deeper profile. If the damage or defects are greater than ½ square foot in size, if multiple small defects clustered together are deemed by the Engineer to be too excessive or widespread for localized power tool cleaning, or if the manufacturer disallows power tool cleaning, prepare the surface by blast cleaning in accordance with SSPC-SP10. Roughen and feather-edge the existing intact coating around the periphery of the repair areas to promote adhesion and provide a smooth coating transition from the repair area to the surrounding coating. Painting and galvanizing surrounding the periphery of the repair area is considered to be adherent if it cannot be lifted using a dull putty knife.

Reapply the damaged coats to the repair area as follows: if bare steel or bare galvanizing is exposed, spot-apply a compatible epoxy zinc rich primer, meeting the requirements of the Articles 1008.05(c) of the Standard Specifications and from the same manufacturer as the epoxy intermediate coat, followed by the epoxy intermediate and aliphatic urethane finish coats; if only the intermediate and finish coats are damaged, apply the epoxy intermediate and aliphatic urethane finish; if only the finish is damaged, apply the aliphatic urethane finish.

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 and the paint type code from the Structure Information and Procedure Manual for the system used according to Article 506.10(i). The code designation for galvanizing is “V”. If painting of the structural steel is not specified then the word “PAINTED” may be omitted, the month and year shall then correspond to the date the stencil is applied.

Basis of Payment. The cost of all surface preparation, galvanizing, painting and all other work described herein shall be considered as included in the unit price bid for the applicable pay items to be galvanized and painted, according to the Standard Specifications.

## **CHAIN LINK FENCE, 4' ATTACHED TO STRUCTURE**

Description. This work shall consist of all labor, materials and equipment necessary for the mounting of a chain link fence on retaining walls, in accordance with the details and locations shown on the plans and the requirements of Section 664 of the Standard Specifications.

Construction Requirements. All post shall be vertical when erected; the base plate must be welded to the post at the proper angle to account for any slope along the top of the wall.

The fence fabric shall be Type IV, Class B (Black PVC-coated steel) and shall be in accordance with Article 1006.27 of the Standard Specifications.

The steel base plate shall meet the requirements of AASHTO M 270 Gr 50.

Method of Measurement. Measurement shall be made along the top of the fence center to center of the end post, in feet, completed in place.

Basis of Payment. The work under this item will be paid at the contract unit price per foot for CHAIN LINK FENCE, 4' ATTACHED TO STRUCTURE, measured in place, which price shall be payment for all work necessary to complete the work herein specified, as shown on the plans or as directed by the Engineer.

### **BICYCLE RAILING (PARAPET MOUNTED)**

Description: This work shall consist of furnishing and installing the BICYCLE RAILING (PARAPET MOUNTED) as shown on the plans. All work shall be in accordance with the provisions of Section 509 of the Standard Specifications and the plans.

Basis of Payment: This work will be paid for at the contract unit price per foot for BICYCLE RAILING (PARAPET MOUNTED), which price shall include furnishing and installing the BICYCLE RAILING (PARAPET MOUNTED).

### **PERMANENT GROUND ANCHORS**

Effective: October 4, 1995

Revised: January 1, 2012

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 (M203M)
- 2) Indented, seven-wire strands, conforming to ASTM A886 (A886M)
- 3) Epoxy coated, seven-wire strands, conforming to ASTM A882 (A882M)
- 4) Steel bars conforming to AASHTO M275 (M275M)

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 (M270M) Grade 36 (250), 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 A53 (A53M) for pipe or ASTM A500 (A500M) for tubing. Minimum wall thickness shall be 0.20 inch (5 mm).

Anchorage covers used to enclose exposed anchorages shall be fabricated from steel, steel pipe, steel tube, or ductile cast iron conforming to the requirement of AASHTO M270 (M270M) Grade 36 (250) for steel, ASTM A53 (A53M) for pipe, ASTM A500 (A500M) for tubing, and ASTM A536 for ductile cast iron. Minimum thickness shall be 0.10 inch (2.5 mm).

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 60 mils (1525 microns) plus or minus 10 mils (250 microns). The polyethylene shall be cell classification 334413 by ASTM D3350.
- (2) Seamless polypropylene tube having a minimum wall thickness of 60 mils (1525 microns) plus or minus 10 mils (255 microns). 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 24 mils (610 microns). The minimum adhesive sealant thickness shall be 20 mils (510 microns).
- (4) A corrugated tube conforming to the requirement of the encapsulation for the tendon bond length.

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 30 mils (760 microns) and conforming to AASHTO M252 requirements.
- (2) Deformed steel tube or pipe having a minimum wall thickness of 25 mils (635 microns).
- (3) Corrugated polyvinyl chloride (PVC) tube having a minimum wall thickness of 30 mils (760 microns). (ASTM D1784) class 13464-B
- (4) Fusion-bonded epoxy conforming to the requirements of AASHTO M284 (M284M), except that it shall have a film thickness of 15 mils (380 microns).

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 10 ft (3 m) in rock, 15 ft (4.6 m) in soil. The minimum tendon bond length shall be 10 ft (3 m).

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 10 ft (3 m) maximum centers with the upper one located a maximum of 5 ft (1.5 m) from the top of the tendon bond length and the lower one located a maximum of 5 ft (1.5 m) from the bottom of the tendon bond length.

Centralizers shall be able to maintain the position of the tendon so that a minimum of 0.75 inches (19 mm) of grout cover is obtained on the tendons at all locations along the tendons. They shall be located at 5 ft (1.5 m) maximum centers with the lower one located 1 ft (305 mm) 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 9 inch (230 mm) 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 150 psi (1035 kPa).

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 0.20 inch (5 mm) 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 15 ft (4.6 m) 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 anchorages may be used unless restressable anchorages are designated on the plans.

The trumpet shall be welded to the bearing plate. The trumpet shall have an inside diameter at least 1/4 inch (6 mm) 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 150 psi (1035 kPa) 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 6 inches (150 mm) from the back of the trumpet.

If the ground anchor is installed in a fine-grained soil using a drilled hole larger than 6 inches (150 mm) 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 50 psi (345 kPa) 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 6 inches (150 mm) 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 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 0.001 inch (25 microns) 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 100 psi (690 kPa) 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 0.001 inch (25 micron) 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 0.04 inch (1 mm), 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 0.001 inch (25 micron) 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 0.04 inch (1 mm), 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 0.04 inch (1 mm) 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.



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 0.08 inch (2 mm) 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.

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 0.08 inch (2 mm) 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 ANCHOR and shall be compensation in full for designing, furnishing, installing and testing the permanent ground anchors and anchorage head assemblies.

## **FORM LINER TEXTURED SURFACE**

### Description

This work shall consist of designing, developing, furnishing and installing form liners and forming concrete using form liners to achieve a Random Running Bond pattern on the concrete surface treatments as shown in the drawings and specifications. This work shall be performed in accordance with the structure plans, applicable portions of Section 503 of the Standard Specifications, and as specified herein.

### Fabricator Requirements

All manufacturers of form liners shall adhere to the provisions listed herein and in the plans.

### Shop Drawings

Shop drawings of the concrete facing Random Running Bond shall be submitted for each area of textured concrete. Shop drawing submittals shall include:

1. Random Running Bond pattern form liner 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, edge treatments, and any other special conditions necessary to comply with the plans..
2. Elevation views of the form liner panel layouts for the Random Running Bond showing the full length and height of the parapets with each form liner panel outlined. The arrangement of the form liner panels shall provide a continuous pattern of desired textures and colors with no interruption of the pattern at the panel joints.

To minimize the possibility of preparing an unsatisfactory Cast Concrete Mockup as described herein, the Contractor may elect to provide shop drawings prior to casting 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 textured surface shall be made from high-strength material which shall not compress more than 0.02 feet. 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.

Deliver materials in original and sealed containers, clearly marked with the manufacturer's name, brand name, type of material, batch number, and date of manufacture.

#### Cast Concrete Mockup

The Contractor shall provide a cast concrete mockup containing the stone form liner surface. The form liner manufacturer's technical representative shall be on-site for technical supervision during the installation and removal operations.

Purpose of the mockup is to select and verify the masonry pattern to be used.

1. Locate mockup on site as directed by the Engineer.
2. The mockup shall be a minimum size of 3 ft x 4 ft x 6 inch thick.
3. Include examples of each condition required for construction i.e. liner joints, construction joints, expansion joints, corners, and special conditions due to topography or manmade elements, etc.
4. 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.
  - a. Construction of textured surface may proceed upon written approval by the Engineer.
5. Apply the concrete stain to surface of the mock-up wall located on the jobsite. Stain shall be of type and color which will be used on actual walls. Application procedures and absorption rates shall be as hereinafter specified, unless otherwise recommended by the manufacturer in writing to achieve color uniformity.
  - a. Approval by the Engineer shall serve as a standard of comparison with respect to color and overall appearance.
  - b. General application to actual surfaces of the parapet shall not proceed until jobsite mockup has been approved in writing by the Engineer.
6. After coloring is determined to be acceptable by the Engineer, construction of project may proceed, using mockup as quality standard.

### 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 of seams 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. Use of curing compounds will not be allowed. Curing methods shall be compatible with the desired aesthetic result. Concrete slump requirements shall meet the form liner manufacturers' recommendations for optimizing the concrete finish, as well as IDOT's material specifications and special provisions.

The Contractor shall employ proper consolidation methods to ensure the highest quality finish. Internal vibration shall be achieved with a vibrator of appropriate size, the highest frequency and low to moderate amplitude. External form vibrators may be required to assure the proper results. Any use of external form vibrators must be approved by the form liner manufacturer and the Engineer. It is the intention of this specification that no rubbing of flat areas or other repairs shall be required after form removal. The finished exposed formed concrete surfaces shall be free of visible vertical seams, horizontal seams, and butt joint marks. Grinding and chipping of finished formed surfaces shall be avoided.

### Guidelines For Use Of Form Liners

Form liners are being used on this project to achieve aesthetically results. The Contractor shall not deviate from the guidelines contained herein unless authorized by the Engineer in writing.

### Method of Measurement

This work shall be measured and paid for in place and the area computed in square feet of actual concrete surface area formed with concrete form liners and colored as specified herein. The pay limits of form lined concrete surface shall be as shown in the drawings.

Cast concrete form liner mockups will not be measured for payment.

### Basis of Payment

This work shall be include in the contract unit price per SQUARE FOOT for FORM LINER TEXTURED SURFACE, which price shall include all labor and material costs associated with forming, pouring, and disposal of forms, including a satisfactory cast concrete mockup panel to the requirements included herein.

Cast concrete form liner mockups will not be paid for separately, shall be included in the contract price for FORM LINER TEXTURED SURFACE.

### **USE OF EXPLOSIVES**

Explosives may be used in the loosening of existing materials to be dredged or otherwise removed only after written permission from the Engineer and in accord with procedures hereinafter specified. . All applications for permission must contain specific details of the size of charge and how it is to be placed. The Contractor shall engage the services of a qualified person who has had at least five years experience in the use of explosives for this type of work. Consideration will not be given to a request for use of explosives unless the plan has been prepared under the direction of such a person.

Blasting operations must be carefully controlled to eliminate the possibility of damage to the caisson or surrounding facilities. The Contractor shall provide a positive means to endure that blasting operations do not damage the caisson. Explosives shall not be placed within 6 feet of the inside face of the exterior cutting edge.

The Contractor shall submit a complete safety plan to the Engineer prior to any blasting. A positive system to detect and measure the probability of lightning or massive electrical discharges shall be used. Blasting shall be used only as necessary to loosen materials and reduce it to sizes required for removal.

The Contractor shall furnish to the Engineer prior to each blast a legible plan of all holes and information signed by the Contractor's authorized representative, showing the pattern and depth of drilling, type of explosives used, loading pattern, sequence of time of firing, and total amount in pounds of explosives for each individual detonation. The drilling and blasting plan is for record purposes, and will not absolve the Contractor of his responsibility for using proper drilling and blasting procedures.

The primary consideration in blasting is to conduct the work in such a manner that other property shall be undisturbed. It is the responsibility of the Contractor to conduct his operations in such a manner. Open blasting is defined as explosive charges not confined in a drill hole. Open blasting will not be permitted.

Permission by the Engineer to use explosives shall in no way relieve the Contractor of complete responsibility for damage to new construction or other property which may result from such use. Any such damage shall be repaired by the Contractor entirely at his expense.

### **POTENTIAL IMPACTS TO FISH FROM BLASTING**

If blasting is the method selected for loosening of materials prior to the establishment of caissons or other enclosures (e.g. cofferdams), potential impacts to fishes are anticipated. Therefore, the Contractor will be required to adhere to the following protocol to avoid or reduce impacts to fish and/or the aquatic environment.

1. The contractor shall take every precaution to avoid damage.
2. The contractor shall use the minimum charge necessary to accomplish the work so as to reduce the risk of impact to the aquatic environment.
3. The contractor shall use millisecond delays between detonation of smaller, successive charges that, when combined, produce the desired total charge. This effectively reduces the total weight of explosive being detonated at a given time and reduces the potential for fish mortality.
4. After drilling and charges are set, the contractor shall backfill the drill hole above the charge with angular rock or allow the drill hole to collapse over the charge before detonation.
5. The contractor shall mitigate blast impacts to fish by detonating small "repelling charges" prior to detonating the main shot to frighten fish from the area above the underwater blast site. Initial repelling charges are required for all blasts.

The Engineer will monitor, in coordination with interested state and federal fish and wildlife agencies, a number of initial blasts to determine the magnitude of the fish mortality, if any. The contractor shall inform the Engineer a minimum of 15 days prior to initiation of blasting. The Engineer will then notify the interested state and federal fish and wildlife agencies. This will enable those agencies to have representatives present during blasting operations if they so desire. If an unacceptable mortality level is observed, the Engineer will hold the contractor responsible for compensation to Missouri and/or Illinois conservation agencies according to the standards specified in the American Fisheries Society Special Publication Number 30 (2003), entitled Investigation and Monetary Values of Fish and Freshwater Mussel Kills. Any reparations for fish kills shall be made by the contractor entirely at his expense.

## **CONSTRUCTION VIBRATION MONITORING**

This special provision identifies the Contractor's responsibilities for protecting the properties listed below. The Contractor shall develop a plan which minimizes the potential for possible cracking damage due to the construction activities near the identified structures. The contractor is also required to perform pre and post crack monitoring. The Contractor will be responsible for any damage caused by his/her activities.

- Lewis & Patricia Lenhardt 1204 Main Street
- Carol J & James M Bierce 1208 Main Street

### Pre-Construction Survey.

No information is available concerning the condition of these properties.

The Contractor shall perform a pre-construction condition survey for the interior and exterior of these structures, and provide a copy of survey reports to the Engineer no later than 30 calendar days prior to starting work. The survey shall be performed by a Structural Engineer licensed in the State of Illinois and experienced in evaluating structural vulnerabilities and vibration monitoring.

At a minimum the survey shall document all aspects of the structural condition through observations, actual measurements, plan sketches, photographs, and any other data the preparer may deem appropriate. The survey reports, signed and sealed by the structural engineer, shall be submitted to the Engineer.

The Contractor shall perform a pre-construction condition survey that includes photos and plan sketches indicating existing vulnerabilities and an evaluation of the risk from construction vibration. The Contractor shall determine the construction methods required to protect the properties listed above based on the pre-construction survey and the safe vibration threshold.

The Contractor is responsible for arranging with the property owner the rights-of-entry to the property in order to engage in condition surveys, vibration monitoring, and crack monitoring.

### Pre-Construction Site Preparation

#### **Crack Monitoring**

The Contractor shall mark existing cracks in such a way that future observations would clearly indicate whether cracks remained unchanged, opened, closed, or propagated. The appropriate location, number and type of crack monitoring devices will be established by the Contractor and approved by the Engineer. The Contractor shall monitor and log all cracks and immediately notify the Engineer of any observed change.

#### **Construction Requirements**

The Contractor shall periodically check to ensure that the monitoring system(s) are continuously operating within manufacturer's specifications during the project.

#### Post-Construction Survey

The Contractor shall perform a post-construction survey and analysis at the designated structures to determine if any structural changes are the result of the construction activity. The Contractor shall provide the Engineer with a copy of all post construction survey reports, and analysis documents comparing pre and post construction structural condition. The survey shall be performed, and the reports signed and sealed, by a Structural Engineer licensed in the State of Illinois.

#### Method of Measurement

The item Construction Vibration Monitoring will be measured as a lump sum unit of work.

#### Basis of Payment

The item CONSTRUCTION VIBRATION MONITORING will be paid for at the contract lump sum price. This price shall be full payment for pre-construction surveys; furnishing, installing, monitoring, and removing crack monitoring gauges; preparing and providing a report documenting crack monitoring during this project; preparing and providing a report documenting cracking data collected during this project; post construction surveys; reports; and all labor, equipment and materials necessary to complete the work as described. There will be no compensation for delays as the result of faulty or damaged monitoring equipment.

### **WATER MAIN**

Description: This work shall consist of furnishing and installing water main at the locations shown on the plans. This work shall be in accordance with the Standard Specifications for Water and Sewer Construction in Illinois (SSWSC). The sections and articles referenced in this special provision refer to the SSWSCI.



Materials:

A. Water Main.

1. Polyvinyl Chloride Pipe.  
Comply with AWWA C900 or AWWA C905 with gray iron pipe equivalent outside diameters.
  - a. Minimum Wall Thickness.
    - 1) 4 inch (100 mm) through 24 inch (600 mm) sizes: DR 18.
    - 2) Sizes over 24 inch (600 mm): As specified in the contract documents.
  - b. Joint Type.  
Use push-on joint type, except as otherwise required in the contract documents or as authorized by the Engineer.
    - 1) Push-on: According to AWWA C900 or AWWA C905.
    - 2) Integral Restrained Joint: AWWA C900 or AWWA C905 pipe with restraining system manufactured integrally into pipe end.
    - 3) Mechanical Restrained Joint: Ductile iron mechanical device designed for joint restraint of AWWA C900 or AWWA C905 pipe complying with the requirements of ASTM F 1674.
  - c. Markings on Pipe.
    - 1) Name of manufacturer.
    - 2) Size and class.
    - 3) Spigot insertion depth gage.
    - 4) National Sanitation Foundation (NSF) seal.
  
2. Ductile Iron Pipe.
  - a. Minimum Thickness Class:
    - 1) 4 inch (100 mm) through 24 inch (600 mm) sizes: Special thickness Class 52 according to AWWA C151.
    - 2) Sizes over 24 inches (600 mm): As specified in the contract documents.
  - b. Cement-mortar Lined: According to AWWA C104 with asphalt seal coat.
  - c. External coating: Asphalt according to AWWA C 151.
  - d. Joint Type: Use push-on type, except as otherwise required in the contract documents or as authorized by the Engineer.
    - 1) Push-on: According to AWWA C111.
    - 2) Mechanical: According to AWWA C111.
    - 3) Restrained, Buried: Pipe manufacturer's standard field removable system.
    - 4) Restrained, in Structures: Restraining gland, flanged or grooved.
    - 5) Flanged: According to AWWA C111.
    - 6) Grooved: According to AWWA C606.
    - 7) Gaskets: According to AWWA C111.
  - e. Markings on Pipe:
    - 1) Name of manufacturer.
    - 2) Size and class.
    - 3) Spigot insertion depth gage.

B. Bolts for Water Main and Fittings.

Use corrosion resistant bolts.

1. Tee-bolts and Hexagonal Nuts for Mechanical Joints.
  - a. High strength, low alloy steel manufactured according to AWWA C111.
  - b. Provide ceramic filled, baked on, fluorocarbon resin coating for bolts and nuts.
  - c. Include factory applied lubricant that produces low coefficient of friction for ease of installation.
2. Other Bolts and Nuts.
  - a. Stainless steel.
  - b. Ductile iron.
  - c. Zinc, zinc chromate, or cadmium plated.

C. Fittings.

1. DIP and PVC Pipe.
  - a. Comply with AWWA C110 (ductile iron or gray iron) or AWWA C153 (ductile iron).
  - b. Joint Type:
    - 1) For pipe sizes 16 inches (400 mm) and less, use mechanical joint complying with AWWA C111.
    - 2) For pipe sizes greater than 16 inches (400 mm), use restrained mechanical joint system. Provide follower gland using breakaway torque bolts to engage thrust restraint.
      - a) Minimum pressure rating same as connecting pipe. For fittings between dissimilar pipes, the minimum pressure rating is the lesser of the two pipes.
      - b) Suitable for buried service.
      - c) Joint restraint system to be field installable, field removable, and re-installable.
    - 3) Use of alternate restraint systems must be approved by the Engineer.
  - c. Cement mortar lined complying with AWWA C104 with asphalt coating.
  - d. Wall Thickness: Comply with AWWA C153.
  - e. Gaskets: Comply with AWWA C111.
2. Flange Adapter.
  - a. Body: Ductile iron complying with ASTM A 536.
  - b. End Rings (Follower Rings): Ductile iron complying with ASTM A 536.
  - c. Gaskets: New rubber compounded for water service and resistant to permanent set.
  - d. Bolts and Nuts: High strength, low alloy corrosion resistant steel or carbon steel bolts complying with ASTM A 307.

3. Pipe Coupling.
  - a. Center Sleeve (Center Ring): Steel pipe or tubing complying with ASTM A 53/A 53M or ASTM A 512, or formed carbon steel with a minimum yield of 30,000 psi (207 MPa).
  - b. End Ring (Follower Ring): ductile iron complying with ASTM A 536, or steel meeting or exceeding the requirements of ASTM A 576, grade 1010-1020.
  - c. Gaskets: New rubber compounded for water service and resistant to permanent set.
  - d. Bolts and nuts: High strength, low alloy corrosion resistant steel.

Construction:

A. Pipe and Fittings.

1. Pipe Installation.
  - a. General.
    - 1) Do not use deformed, defective, gouged, or otherwise damaged pipes or fittings.
    - 2) Keep trench free of water. Clean pipe interior prior to placement in the trench.
    - 3) Install pipe with fittings and valves to the lines and grades specified in the contract documents.
    - 4) Clean joint surfaces thoroughly and apply lubricant approved for use with potable water and recommended by the manufacturer.
    - 5) Push the pipe joint to the indication line on the spigot end of the pipe before making any joint deflections.
    - 6) Limit joint deflections to one degree less than pipe manufacturer's recommended maximum limit.
    - 7) Tighten bolts in a joint evenly around the pipe.
    - 8) Install concrete thrust blocks on fittings 16 inches (400 mm) in diameter or smaller. For fittings larger than 16 inches (400 mm), install restrained joints, and when specified in the contract documents, also install concrete thrust blocks.
    - 9) Keep exposed pipe ends closed with rodent-proof end gates at all times when pipe installation is not occurring.
    - 10) Close ends of installed pipe with watertight plugs during nights and non-working days.
    - 11) Do not allow water from the new pipeline to enter existing distribution system piping until testing and disinfection are successfully completed.
  - b. Trenched.
    - 1) Excavate trench and place pipe bedding and backfill material as specified in [Section 2552](#).
    - 2) Provide uniform bearing along the full length of the pipe barrel. Provide bell holes.
  - c. Trenchless.

Apply [Section 2553](#).

2. Additional Requirements for DIP Installation.
  - a. Utilize full length gaged pipe for field cuts. Alternatively, field gage pipe selected for cutting to verify the outside diameter is within allowable tolerances.
  - b. Cut the pipe perpendicular to the pipe barrel. Do not damage the cement lining. Bevel cut the ends for push-on joints according to the manufacturer's recommendations.
  - c. Encase all pipe, valves, and fittings with polyethylene wrap according to [Article 2554.03, A, 5.](#)
3. Additional Requirements for PVC Pipe Installation.
  - a. Cut the pipe perpendicular to the pipe barrel. Deburr and bevel cut the spigot end of the pipe barrel to match the factory bevel. Re-mark the insertion line.
  - b. When connecting to shallow depth bells, such as on some cast iron fittings or valves, cut the spigot end square to remove the factory bevel. Deburr the end and form a partial bevel on the end.
4. Tracer System Installation.
  - a. Install with all buried water main piping. Refer to the contract documents for details of tracer wire installation.
  - b. Begin and terminate the system at all connections to existing mains.
  - c. Install wire continuously along the lower quadrant of the pipe. Do not install wire along the bottom of the pipe. Attach wire to the pipe at the midpoint of each pipe length. Use 2 inch (50 mm) wide by 10 mil (250  $\mu$ m) thick polyethylene pressure sensitive tape.
  - d. Install splices only as authorized by the Engineer. Allow the Engineer to inspect all below grade splices of tracer wire prior to placing the backfill material.
  - e. Install ground rods adjacent to connections to existing piping and at locations specified in the contract documents.
  - f. Bring two wires to the surface at each fire hydrant location and terminate with a tracer wire station.
  - g. Final inspection of the tracer system will be conducted at the completion of the project and prior to acceptance by the Engineer. Verify the electrical continuity of the system. Repair discontinuities.
5. Conflicts
  - a. Horizontal Separation of Gravity Sewers from Water Mains.
    - 1) Separate gravity sewer mains from water mains by a horizontal distance of at least 10 feet (3 m) unless:
      - The top of a sewer main is at least 18 inches (450 mm) below the bottom of the water main, and
      - The sewer is placed in a separate trench or in the same trench on a bench of undisturbed earth at a minimum horizontal separation of 3 feet (1 m) from the water main.
    - 2) When it is impossible to obtain horizontal clearance of 3 feet (1 m) and a vertical clearance of 18 inches (450 mm) between sewers and water mains, the sewers shall be constructed of water main materials meeting the requirements of [Article 4150.02, A.](#) However, provide a linear separation of at least 2 feet (600 mm).

Method of Measurement:

Measurement for each type and size of pipe installed in an open trench will be in linear feet along the centerline of the pipe, including the length through the fittings.

Basis of Payment:

- 1) Payment will be the contract unit price per Foot for each type and size of pipe. All fittings and joints shall be included in the cost of the Water Main installation.
- 2) Payment is full compensation for trench excavation, dewatering, furnishing bedding material, placing bedding and backfill material, tracer system, testing, disinfection, and polyethylene wrap for ductile iron pipe and ductile and gray iron fittings.

**STORM SEWER WATER MAIN REQUIREMENT**

Effective: June 12, 1997

Description: This work shall consist of furnishing and installing water main quality pipe at the locations shown on the plans.

Materials:

- (a) Ductile iron water main Class 52
- (b) Joints for Ductile Iron pipe shall be:
  - (1) Mechanical Joints - AWWA C111 and C600
  - (2) Push-On-Joints - AWWA C111 and C600
- (c) Polyvinyl Chloride (PVC) Class 12454B (PVC 1120) or

Class 12454C (PVC 1220).

Schedule 40 is required for 8" diameter and schedule 80 for larger sizes.

**CONSTRUCTION REQUIREMENTS**

The storm sewer water main shall be installed according to the applicable portions of Section 550 and 561 of the Standard Specifications and the Standard Specifications for Water and Sewer Main Construction. In case of conflict between the Standard Specifications, the Standard Specifications for Water and Sewer Main Construction in Illinois shall take precedence and shall govern.

No testing or disinfections of the newly laid storm sewer water main will be required. A water-tight connection is required between the storm sewer water main and the storm sewer.

Method of Measurement: Storm sewer water main of the various diameters will be measured for payment in feet, measured in place.

**Basis of Payment:** This work will be paid for at the contract unit price per Foot for STORM SEWER WATER MAIN REQUIREMENT, of the diameter specified.

### **STORM SEWER REPAIR**

Description: This work shall consist of removal of a portion of the existing steel storm sewer pipe. This work shall be performed at locations shown on the plans and/or subject to the review of the ENGINEER.

Construction Requirements: Storm Sewer Repair shall include the cutting and removal of existing steel storm sewer pipe so as to provide a smooth, even surface with the existing ground slope at the locations shown on the plans and/or subject to the review of the ENGINEER. Additional removal required by the non-compliance with this Special Provision will be performed at the CONTRACTOR'S expense and no additional compensation will be allowed. If additional removal is required due to non-compliance with this Special Provision, the CONTRACTOR shall weld a length of steel pipe to the existing steel pipe so as to provide a smooth, even surface with the existing ground at the locations shown on the plans and/or subject to the review of the ENGINEER.

Method of Measurement: This work will be measured for payment per foot of STORM SEWER REPAIR.

Basis of Payment: This work will be paid for at the contract unit price per foot of STORM SEWER REPAIR. Unit price shall include cutting, removal and disposal of steel storm sewer pipe, labor, materials, equipment, and incidental grading associated with the cutting and removal of pipe.

### **STORM SEWER REMOVAL**

Effective: September 6, 2002

Description. The existing storm sewer marked for removal shall be removed according to Section 551 of the Standard Specifications for Road and Bridge Construction adopted January 1, 2012.

Method of Measurement. Storm sewer removal of the various diameter will be measured for payment in feet, measured as removed.

Basis of Payment. Storm sewer removal will be paid for at the contract unit price per Foot for STORM SEWER REMOVAL, which includes the trench backfill.

### **VALVE BOXES TO BE ADJUSTED**

Description: The work consists of the horizontal and vertical adjustment of the water valve box at the locations as shown on the Plans and in accordance with the details shown on the Plans and as directed by the Engineer to the finished grade of the surrounding surface. This work shall be completed in accordance with the applicable portions of Section 602 of the Standard Specifications.

Method of Measurement: The work will be measured for payment in place for each Valve Box Adjusted.

Basis of Payment: This work will be paid for at the contract unit price per each for VALVE BOXES TO BE ADJUSTED which price shall include all required labor, materials, equipment, and all necessary incidental work.

### **FIRE HYDRANTS TO BE REMOVED**

Description: This work consists of removing an existing fire hydrant with auxiliary valve box at locations shown in the Plans. At a minimum, the removal of all fire hydrants shall conform to Section 564 of the Standard Specifications for Road and Bridge Construction, the applicable portions of AWWA C502, and the latest edition of the Standard Specifications for Water and Sewer Main Construction in Illinois.

Measurement: The work will be measured for payment in place for each fire hydrant removed.

Basis of Payment: This work will be paid for at the Contract Unit Price for each FIRE HYDRANT TO BE REMOVED including all work as described herein.

### **FIRE HYDRANTS**

Description: This work consists of furnishing and installing a new fire hydrant with auxiliary valve, valve box stabilizer, isolation valve and valve box at locations shown in the Plans. As a minimum, the design, materials and workmanship of all fire hydrants shall conform to Section 564 of the Standard Specifications for Road and Bridge Construction, the applicable portions of AWWA C502, and the latest edition of the Standard Specifications for Water and Sewer Main Construction in Illinois.

Materials: Fire hydrants shall be provided with breakaway flanges, 5¼" main valve opening, two 2½" hose nozzles and one 4½" pumper nozzle with National Standard threads. Hydrants shall open counterclockwise and shall be furnished with a mechanical joint inlet and restrained joints. Hydrant barrels shall be 4½" diameter set for min. 6'-6" bury depth and hydrant leads shall be minimum 6-inches diameter. All hydrants shall be painted in conformity with AWWA C502, traffic yellow. Fire hydrants shall be manufactured by Waterous.

Construction: Install hydrants plumb with the lowest hose connection at least 18 inches, but not more than 24 inches, above the finished grade ground level. Set hydrant bases on a precast concrete block to provide firm support for the base. Brace the fire hydrant base with solid concrete blocking between the base and undisturbed trench wall to counteract the reaction thrust of water pressure at the base. Provide mechanical joints with anchoring fittings, or approved restrained joints. All bolts, nuts and washers shall be stainless steel. Place a minimum of 1 cubic yard of washed 1/4" to 3/4" washed stone at and around the base for proper drainage. Cover stone with geotextile fabric before backfilling.

Brace the fire hydrant barrels and auxiliary valve boxes during backfilling. Do not block the drain hole in fire hydrant. Place and compact granular backfill materials in 6-inch layers around the fire hydrant and auxiliary valve box. Cover new fire hydrant with black plastic bag until new system is in service.

Install fire hydrant barrel extensions, auxiliary valve boxes, and valve box extensions in accordance with manufacturer's instructions and recommendations.

Measurement: The work will be measured for payment in place for each fire hydrant.

Basis of Payment: This work will be paid for at the Contract Unit Price for each FIRE HYDRANTS including all work as described herein.

## **INLETS, SPECIAL**

Description: This work shall consist of supplying and constructing INLETS, SPECIAL at the locations as shown on the Plans and in accordance with the details shown on the Plans and as directed by the Engineer. This work shall be completed in accordance with the applicable portions of Section 602 of the Standard Specifications.

Construction: INLETS, SPECIAL have been designed so that a 3 foot diameter drilled shaft with temporary casing may be used as a temporary soil retention system during installation of the outlet pipe. Alternative methods of installation, if desired by the contractor, must be approved by the Engineer. The cost of the temporary soil retention system and backfill shall be included in the cost of INLETS, SPECIAL.

Shaft excavation, temporary casing and controlled low-strength material, if used shall meet the requirements of the applicable sections of the special provision for DRILL SOLDIER PILE RETAINING WALL.

Place concrete inlet structure on top of the shaft of low strength concrete. The connection point between Inlets, Special and 12" PVC vertical outlet pipe shall be sealed using a wall penetration seal.



Materials: 3" Diameter Galvanized Steel Pipe shall be hot-dipped galvanized and meet the requirements of Section 1006.17 of the Standard Specifications.

12" PVC pipe shall meet the requirements of Section 1040.03(a) of the Standard Specifications.

Wall Penetration Seal shall meet the following requirements:

1. Modular interlocking elastomeric mechanical seals
2. Manufacturers: Link-Seal Modular Seal or approved equal.
3. Standard Service Applications:
  - a. Temperature Range: -40°F to +250°F
  - b. Material: EPDM Rubber conforming to ASTM D2000
  - c. Color: Black
  - d. Bolts and nuts: Steel with Zinc Coating

Method of Measurement: This work will be measured for payment per each INLETS, SPECIAL where each is defined as one complete structure.

Basis of Payment: This work will be paid for at the contract unit price per each for INLETS, SPECIAL. Unit price includes furnishing and installing 3" diameter galvanized steel pipe, reinforcement bars, wall penetration seal, concrete, low strength concrete backfill, the 12" PVC vertical outlet pipe from the inlet up to and including, the 12" PVC elbow and connection to the INLETS, SPECIAL, NO. 5, and all excavation, temporary soil retention system, labor, materials, equipment, tools, and incidentals necessary to complete the work as specified.

#### **INLETS, SPECIAL, NO. 4, 5**

Description: This work shall consist of supplying and constructing INLETS, SPECIAL, NO. 4 and INLETS, SPECIAL, NO. 5 at the locations as shown on the Plans and in accordance with the details shown on the Plans and as directed by the Engineer. This work shall be completed in accordance with the applicable portions of Section 602 and 606 of the Standard Specifications.

Method of Measurement: This work will be measured for payment per each INLETS, SPECIAL, NO. 4 or INLETS, SPECIAL, NO. 5, where each is defined as one complete structure.

Basis of Payment: This work will be paid for at the contract unit price per each for INLETS, SPECIAL, NO. 4 or INLETS, SPECIAL, NO. 5.

#### **TYPE E INLET BOX, STANDARD 610001 (SPECIAL)**

Description: This work shall consist of supplying and constructing TYPE E INLET BOX, STANDARD 610001 (SPECIAL) at the locations as shown on the Plans and in accordance with the details shown on the Plans and as directed by the Engineer. This work shall be completed in accordance with the applicable portions of Section 610 of the Standard Specifications.

Method of Measurement: This work will be measured for payment per each TYPE E INLET BOX, STANDARD 610001 (SPECIAL), where each is defined as one complete structure.

Basis of Payment: This work will be paid for at the contract unit price per each for TYPE E INLET BOX, STANDARD 610001 (SPECIAL). The cost of the shoulder curb shall be included in the cost of the TYPE E INLET BOX, STANDARD 610001 (SPECIAL). Unit price will include all required grating, frames, labor, materials, equipment, and all necessary incidental work.

## **TRENCH DRAIN**

Description: This work shall consist of supplying and constructing TRENCH DRAIN at the locations as shown on the Plans and in accordance with the details shown on the Plans and as directed by the Engineer. This work shall be completed in accordance with the applicable portions of Section 602 of the Standard Specifications.

Method of Measurement: This work will be measured for payment per each TRENCH DRAIN, where each is defined as one complete structure.

Basis of Payment: This work will be paid for at the contract unit price per each TRENCH DRAIN. Unit price will include all required excavation, pipe, pipe connections, encasement concrete, reinforcement bars, expansion joints, grates, frames, materials, equipment, and all necessary incidental work in accordance with the details shown on the Plans.

## **SANITARY MANHOLES TO BE ADJUSTED OR RECONSTRUCTED**

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

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

Materials: External Manhole Chimney Seals shall be provided at all Sanitary Manholes to be Adjusted. Chimney seals shall consist of a rubber sleeve, compression band and extension skirt. Rubber sleeve shall be high grade rubber compound conforming to ASTM C293 with a hardness of 45 plus or minus 5. Compression bands shall be 16 gauge Type 304 stainless steel with a minimum width of 1 inch. Extension skirt shall be fiberglass reinforced PVC, impervious to tear and puncture, with a minimum weight of 12 ounces per square yard. External manhole chimney seals shall be from the City of Savanna approved material list.

Basis of Payment: This work will be paid for at the contract unit price per each for SANITARY MANHOLES TO BE ADJUSTED or SANITARY MANHOLES TO BE RECONSTRUCTED, which price will include all excavation, labor, materials, and equipment.

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

All existing drainage structures are to be kept free of any debris resulting from construction operations. All work and material necessary to prevent accumulation of debris in the drainage structures will be considered as incidental to the contract. Any debris in the drainage structures resulting from construction operations shall be removed at the Contractor's own expense, and no extra compensation will be allowed. Any minor ditch grading, modifications to existing drainage structures to ensure proper roadway drainage, culverts under temporary drives, and any bulkheading as directed by the engineer necessary to provide for the interim drainage for construction staging will not be paid for separately but shall be included in the cost of earth excavation and erosion control. Should reconstruction or adjustment of a drainage structure be required by the Engineer in the field, the necessary work and payment shall be done in accordance with Section 602 and Article 104.02 respectively of the Standard Specifications.

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

### **CULVERT TO BE CLEANED**

Effective: April 22, 1991

Revised: April 18, 1994

This work shall consist of cleaning out culverts specified to their original flowline, using a method approved by the Engineer. The material removed shall be disposed of according to Article 202.03 of the Standard Specifications or it may be used on the job to flatten foreslopes if approved by the Engineer.

This work will be paid for at the contract unit price per Foot for PIPE CULVERTS TO BE CLEANED, of the size specified, or BOX CULVERTS TO BE CLEANED. For multi-cell culverts, each barrel will be measured for payment.

### **TEMPORARY STORM SEWERS , CLASS A, TYPE 2 24"**

Description: This work shall consist of furnishing, installing and removing storm sewers for temporary use during stage construction in accordance with the applicable portions of Sections 550 and 551 of the Standard Specifications.

Construction Requirements: Construction and installation shall conform to the details shown in the Plans, Standard Details and all applicable portions of Sections 550 and 551 of the Standard Specifications. The locations for temporary storm sewer shall be as shown on the Plans or as directed by the Engineer. Any existing storm sewers on the project that have been removed and are considered suitable by the Engineer for salvage for this item may be used. Once the final drainage plans are in place and the temporary storm sewer is no longer necessary, the temporary storm sewer shall be removed and disposed of according to Article 202.03.

Method of Measurement: This work will be measured for payment according to Article 550.09. Removal of the temporary storm sewer shall not be measured for payment but shall be considered included in this work. Trench backfill for temporary storm sewer installation and/or removal of temporary storm sewer shall be measured for payment according to Article 208.03.

Basis of Payment: This work will be paid for at the contract unit price per foot for TEMPORARY STORM SEWERS, CLASS A, TYPE 2 24", which payment shall constitute full compensation for furnishing, installing, hauling, placing and removal and disposal of all materials; and labor, equipment, tools and incidentals necessary to complete the work as specified.

#### **TEMPORARY MANHOLE**

Description: This work shall consist of constructing and removing Manhole, Type A, 6' diameter with a type 1 frame and closed lid specified in accordance with the applicable portions of Section 602 and 605 of the Standard Specifications and the details shown on the plans.

Basis of Payment: This work will be paid for at the contract unit price per each for TEMPORARY MANHOLE.

#### **TEMPORARY INLETS, TYPE A, TYPE 1 FRAME, OPEN LID**

Description: This work shall consist of constructing temporary type A inlets with Type 1 frame and open lid in accordance with the applicable portions of Section 602 of the Standard Specifications, the details in the plans, and as modified herein.

Basis of Payment: This work will be paid for at the contract unit price per each for TEMPORARY INLETS, TYPE A, TYPE 1 FRAME, OPEN LID which price shall include furnishing all labor, material and equipment necessary to furnish, construct, maintain and remove.

## **REMOVING EXISTING SEPTIC TANK**

Description. This work shall consist of the complete removal and disposal of existing underground concrete septic tank including adjacent inlet and outlet pipes.

Equipment and devices for Removing Old Septic Tanks shall be approved by the Engineer.

General. Removal of existing septic tanks, adjacent inlet and outlet pipes within three feet (3') of the tank and sewage shall be according to all State and Local boards of Health Agencies or other authorities having jurisdiction over the removal of underground septic tanks.

Removal. Sequence of removal shall be according to the following.

1. Locate. Locate existing septic tank and mark its location. Excavate over the septic tank and exposed the entire surface area of the top slab of the tank.
2. Waste Removal and Disposal. Existing septic tank shall be emptied of all waste materials and all removed materials shall be disposed of off the right of way at locations approved by the Engineer. This work shall be done by a professionally licensed septic tank pumping Company/Contractor.
3. Excavation. Excavate on all four sides of the tank a one foot (1') to three foot (3') width trench to the bottom of the septic tank. The Contractor shall exercise care when excavating around the inlet and outlet pipes to avoid breakage.
4. Inlet/Outlet Pipes. The inlet and outlet pipes shall be cut approximately one (1) foot from the exterior face of the septic tank. The adjacent pipes shall be immediately plugged to prevent sewage remaining in the pipes from draining into hole where personnel are working. The cut sections of pipe shall be removed from the septic tank.
5. Tank Removal and Disposal. The tank shall be removed by the Contractor according to methods approved by the Engineer. The tank shall be disposed of off the right of way by a professionally licensed septic tank removal Company/Contractor at a location approved by the Engineer.

Backfilling. Upon completion of septic tank removal, the void obtained from the tank removal shall be backfilled as soon as practical. "Earth Excavation" material shall be used as backfill material.

- (a) The earth excavation material shall be deposited in uniform layers not exceeding six (6) inches thick (loose measure) to an elevation matching the adjacent ground surface and each layer shall be compacted. Excavated material shall be compacted by ramming or tamping to the satisfaction of the Engineer.

Method of Measurement. This work will be measured for payment per each.

Basis of Payment. This work will be paid for at the contract price per each for REMOVING EXISTING SEPTIC TANK which price shall include: locating, excavating, backfilling and removal and disposal of the septic sewage tank. No additional compensation will be allowed.

### **CONCRETE GUTTER (SPECIAL)**

Description: This work shall consist of constructing Concrete Gutter, Special at locations shown and dimensions detailed in the plans. The Concrete Gutter, Special is used in locations adjacent to the retaining wall.

General Requirements: The Concrete Gutter, Special shall be constructed per the plan details (of the width shown), in accordance with Section 606.10.

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

Basis of Payment: This work will be paid for at the contract unit price per foot for CONCRETE GUTTER, SPECIAL, which payment shall constitute full compensation for constructing the gutter according to the plans, details and for all labor, equipment, tools and incidentals necessary to complete the work as specified. No additional compensation will be provided for different width or varying width sections of CONCRETE GUTTER, SPECIAL. Protective coat will be paid for according to Article 420.23.

### **PROPERTY MARKERS**

Effective: July 1, 1994

Revised: January 30, 2008

This work shall consist of locating, protecting, preserving and relocating property markers, monuments or pins which are discovered and which will be disturbed in the normal course of construction. An Illinois Registered Land Surveyor will relocate the markers, monuments or pins to the new or relocated right-of-way line in such a location as to legally define the location of the new or reestablished property corner(s). The Contractor shall be required to furnish one copy of the final plat or plats to the State upon completion of the work.

The Surveyor shall place as a minimum a 36" x 3/4" round iron pin for the property marker. This work will be paid for at the contract unit price Each for PROPERTY MARKERS.

### **STEEL PLATE BEAM GUARDRAIL (SHORT RADIUS)**

Description: This work shall be in accordance with Section 630 of the Standard Specifications and as detailed in the plans.

The guardrail components utilized for the STEEL PLATE BEAM GUARDRAIL (SHORT RADIUS) will be the standard Type A rail symmetrically formed to a radius configuration as shown in the plans.

Steel posts will be utilized for STEEL PLATE BEAM GUARDRAIL (SHORT RADIUS).

Method of Measurement: STEEL PLATE BEAM GUARDRAIL (SHORT RADIUS) will be measured for payment in place, in feet.

Basis of Payment: This work will be paid for at the contract unit price per foot for STEEL PLATE BEAM GUARDRAIL (SHORT RADIUS).

### **STEEL PLATE BEAM GUARDRAIL, TYPE B, 9 FOOT POSTS**

Description: This work shall be in accordance with Section 630 of the Standard Specifications and as detailed in the plans.

Revise Section 630.05

Wood Posts will not be allowed. Steel posts will be utilized for STEEL PLATE BEAM GUARDRAIL, TYPE B, 9 FOOT POSTS).

Basis of Payment.

This work will be paid for at the contract unit price per foot for STEEL PLATE BEAM GUARDRAIL, TYPE B, 9 FOOT POSTS). The cost of the Sonotube shall be included in the cost and no additional compensation will be allowed for the Sonotube.

### **SIGN SUPPORT SPECIAL**

Description. This work shall consist of furnishing and installing sign supports attached to parapet as detailed in the plans and specified in this special provision.

Materials. Structural Steel plates and angles shall be according to Article 1006.04.

High Strength Steel Bolts, Nuts and Washers shall be according to Article 1006.08. Bolts, nuts and washers shall be galvanized.

The drilled-in type adhesive anchors shall be an anchoring product pre-approved by the Department.

Hollow structural steel tubing shall be according to ASTM A 500 (Grade B) or ASTM A 501.

Construction Requirements. The sign supports shall be fabricated according to Articles 505.03 through 505.05. All welding shall be continuous and according to Article 505.04.

After fabrication, the bracket assemblies shall be hot-dip galvanized according to AASHTO M 111. No punching, drilling, or welding shall be permitted after galvanizing.

The drilled-in type adhesive anchors shall be installed according to the manufacturer's printed specifications and instructions.

Basis of Payment. This work will be measured and paid for at the contract unit price each for SIGN SUPPORT SPECIAL.

### **INSTALL SIGN PANEL - TYPE 3**

Description: This work shall consist of installing the WELCOME TO ILLINOIS sign at the intersection of US 52/IL 64 and IL 84 as shown on the plans. The sign panel will be fabricated by the IDOT sign shop and will be delivered to the job site by IDOT. The installation work shall be completed in accordance with the applicable portions of Section 720 and 730 of the Standard Specifications.

Method of Measurement: This work will be measured for payment per each INSTALL SIGN PANEL - TYPE 3.

Basis of Payment: This work will be paid for at the contract unit price per each for INSTALL SIGN PANEL - TYPE 3. All materials and equipment required to install the sign shall be included in the cost of INSTALL SIGN PANEL - TYPE 3.

### **CLOSED CIRCUIT TELEVISION CAMERA SYSTEM**

Description. This item shall include the installation of two video cameras located on each side of the Mississippi River. Each camera shall provide the best view of the construction site and construction related activities. The cameras shall be equipped with pan, tilt, zoom control that will be remotely operated through a website. The video images will also be stored.

Materials.

- Camera assembly, power supply, and surge suppressors
- Cables for power, video, and camera control in accordance with the camera manufacturer's recommendations
- All mounting equipment required



Requirements.

Restrict the camera's field of view, if necessary, so that a user cannot use the cameras to look in the windows of dwellings, to the extent that it does not interfere with the use of the camera for construction viewing purposes; ensure that a camera cannot be used to view residential property. Prior to creating these restrictions, submit to the engineer a written description of the proposed restrictions to be installed at each camera, and the proposed method of achieving them. It shall not be possible for an operator to override these restrictions without intervention by his or her supervisor. Affixing a mask to the inside of the clear dome shall be an acceptable method to achieve this. Highlight situations in which there is a conflict between the need to protect privacy and the need to know about construction situations. Revise the field of view restrictions as directed by the engineer.

To ensure a prompt response to incidents involving the integrity of the camera and feed, the Contractor shall provide a telephone number where a responsible individual can be contacted. The contractor shall dispatch sufficient resources within a 12 hour period. If the Contractor fails to restore the feed to full operation within the time limit specified above the engineer will impose a daily monetary deduction for each 24-hour period (or portion thereof) the deficiency exists. This time period will begin with the time of notification to the contractor and end with the Resident Engineer's acceptance of the corrections.

Website. The images from the video camera shall be viewable from a website. This website shall have the capabilities to allow 10 different password users to operate the pan, tilt, and zoom features of the camera with a key board:

1. Construction Resident Engineer (TBD)
2. Construction Field Engineer (Ali.Mansour@illinois.gov)
3. Construction Engineer (Doug.Happ@illinois.gov)
4. Studies and Plans Project Manager (Faith.Duncan@illinois.gov)
5. Illinois Bureau of Bridges and Structures (Mark.Thomson@illinois.gov)
6. Iowa Department of Transportation (Sam.Shea@dot.iowa.gov)
7. FHWA (Dennis.Bachman@dot.gov)
8. Parsons Transportation Group (Robert.A.Magliola@parsons.com)
9. TBD
10. TBD

The images from the video camera website will also be provided for viewing from an internet link with a minimum refresh rate of 15 seconds. IDOT also reserve the right to link to the website to use the images for display on the department internet or intranet web servers.

The images from the video camera are solely the Department of Transportation's property. These images shall not be used or reproduced without the written consent of the department.

The contractor shall create, design, and manage an independent website for Phase 3 coordination with the public. The website shall be updated at a minimum weekly with construction photos and status updates. In addition the contractor is responsible for posting construction photos and/or status updates a minimum of three times per week to IDOT's Facebook page and District Two's Twitter account.

**Basis of Payment.**

Measurement and payment for Camera assembly installation includes cables, testing, grounding, and all miscellaneous hardware required for a safe, fully operational camera assembly. Payment will be made as follows:

Pay Item	Type	Description
X0322227	EACH	Closed Circuit Television Camera System

**GFCI 20 AMP DUPLEX RECEPTACLE**

**Description:** This work shall consist of furnishing and installing a 20 amp ground fault circuit interrupting receptacle with cover box inside the bridge tie girder and arch structures as shown on the plans. The work shall include all attachment hardware, conduit and wiring from adjacent junction box to the receptacle. The Contractor shall provide all labor, material, and equipment necessary to complete the work.

**Materials:** The receptacle shall be a 20 amp, 120 volt duplex ground interrupting, premium specification grade. It shall be furnished in a 4" square weatherproof box with cover.

**Basis of Payment:** This work will be paid for at the contract unit price per each for GFCI 20 AMP DUPLEX RECEPTACLE.

**CONDUIT ATTACHED TO STRUCTURE**

**Description:** This work shall consist of furnishing and installing stainless steel conduit, fittings and accessories attached to structures.

**Materials:** Materials shall be according to Article 811.02 of the Standard Specifications, except as noted below:

Stainless steel conduit, couplings, and elbows shall be Type 304 or Type 316 stainless steel, and shall be manufactured according to UL Standard 6A and ANSI Standard C80.1. Conduit fittings shall be the threaded type, shall be Type 304 or Type 316 stainless steel, and shall be manufactured according to UL Standard 514B.

All conduit supports, straps, clamps, and other attachments shall be Type 304 or Type 316 stainless steel. Attachment hardware shall be stainless steel according to Art 1006.29(d).

Installation. The conduit shall be installed according to Article 811.03 of the Standard Specifications.

Basis of Payment: This work will be paid for at the contract unit price per Foot for CONDUIT ATTACHED TO STRUCTURE, 1 1/2" DIA. STAINLESS STEEL price shall be payment in full for all labor, materials, and equipment required to install the stainless steel conduit as described above, complete.

## **TEMPORARY WATERWAY OBSTRUCTION WARNING LIGHTING SYSTEM**

### Description.

This work shall consist of maintaining the existing waterway obstruction warning lighting on the existing structure and relocating the existing lighting to accommodate various stages of proposed bridge construction. In case the existing lighting cannot be relocated, temporary lighting shall be furnished and installed as needed. Temporary channel edge lighting (red) shall also be provided on coffercells at proposed piers 8 and 9 during construction as shown on the structural plans. All existing and temporary waterway obstruction warning lights shall be removed at the end of construction.

The Contractor shall provide all labor, material, and equipment necessary to complete the work. This work shall be performed according to all applicable sections of the Standard Specifications, as shown on the plans, and as described herein. All work shall be performed to the satisfaction of the Engineer and according to US Coast Guard (USCG) regulations.

### Installation.

The center and outside edges of the most narrow navigation channel shall be marked at all times by using existing lighting, relocated existing lighting and/or temporary lighting luminaires.

### Materials.

All temporary waterway obstruction warning lighting shall conform to the applicable USCG regulations. All materials shall conform to the applicable sections of the Standard Specifications. Materials shall include all rearranged and new luminaires, conduits, cables, attachments, straps, mounting brackets, hardware, junction boxes and any other items needed to provide a fully operational lighting system, including electrical service to power the lights.

Basis of Payment. This work will be paid for at the contract lump sum price for TEMPORARY WATERWAY OBSTRUCTION WARNING LIGHTING SYSTEM.

**LUMINAIRE, LED, HORIZONTAL MOUNT, LW**  
**LUMINAIRE, LED, HORIZONTAL MOUNT, MW**

Description: This work consists of furnishing all materials, equipment, and labor necessary to install Light-Emitting Diode (LED) luminaires as shown on the plans, in accordance with the applicable requirements of Section 821 of the Standard Specifications for Road and Bridge Construction, and as specified herein.

General: The luminaire shall be assembled in the continental U.S.A. and shall be assembled by and manufactured by the same Manufacturer. Quick connect/disconnect plugs shall be supplied between the discrete electrical components within the luminaire such as the driver, surge protection device, and optical assembly for easy removal. The quick connect/disconnect plugs shall be operable without the use of tools and while wearing insulated gloves. The luminaire shall be in compliance with ANSI C136.37. LED light source(s) and driver(s) shall meet the material requirements of the Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU.

Manufacturer Experience. The luminaire shall be designed to be incorporated into a lighting system with an expected 30-year lifetime. The luminaire Manufacturer shall have a minimum of 30 years' experience manufacturing High Intensity Discharge (HID) roadway luminaires and shall have a minimum of 5 years' experience manufacturing LED roadway luminaires. The Manufacturer shall have a minimum of 5,000 total LED roadway luminaires installed on a minimum of 30 separate installations, all within the continental U.S.A.

Housing: The housing shall be designed to ensure maximum heat dissipation and to prevent the accumulation of water, ice, dirt and debris. A passive cooling method with no moving or rotating parts shall be employed for heat management. The effective projected area of the luminaire shall not exceed 1.4 sq. ft. The total weight of the luminaire(s) and accessories shall not exceed 75 pounds. Wiring within the electrical enclosure shall be rated at 600 V, 221 °F (105 °C) or higher.

Finish. Painted or finished luminaire surfaces exposed to the environment, shall exceed a rating of six according to ASTM D1654 after 1000 hours of ASTM B117 testing. The coating shall exhibit no greater than 30 % reduction of gloss according to ASTM D523, after 500 hours of ASTM G154 Cycle 6 QUV® accelerated weathering testing.

Attachment. The luminaire shall slip-fit on a mounting arm with a 2 in (5 cm) diameter tenon (2.375 in (6 cm) outer diameter), and shall have a barrier to limit the amount of insertion. The luminaire shall be provided with a leveling surface and shall be capable of being tilted  $\pm 5$  degrees from the axis of attachment in not more than 2.5 degree increments and rotated to any degree with respect to the supporting arm.

Receptacle. The luminaire shall include a fully prewired, 7-pin twist lock ANSI C136.41 compliant receptacle. Unused pins shall be connected as directed by the Manufacturer and as approved by the Engineer. A shorting cap shall be provided with the luminaire.

Vibration Characteristics. All luminaires shall pass ANSI C136.31 requirements. Roadway luminaires mounted on a bridge and high mast luminaires shall be rated for "3G" peak acceleration. Vibration testing shall be run using the same luminaire in all three axes.

Labels and Decals. All luminaires shall have external labels in compliance with the latest version of ANSI C136.15 and internal labels in compliance of the latest version of ANSI C136.22.

The luminaire shall be listed for wet locations by a Nationally Recognized Testing Laboratory (NRTL) as defined by OSHA and shall be in compliance with UL 8750 and UL 1598. It shall be identified as such by the holographic UL tag/sticker on the inside of the luminaire.

Hardware. All external fasteners shall be stainless steel. All hardware shall have corrosion resistance.

Optical Assembly: The LED optical assembly, consisting of LED packages, shall have a minimum Ingress Protection rating of IP66 according to the ANSI/IEC 60529. Circuiting shall be designed to minimize the impact of individual LED failures on the operation of the other LEDs.

The optical assembly shall utilize high brightness, long life, minimum 70 color rendering index (CRI), 4,000 K color temperature (+/-300 K) LEDs binned according to ANSI C78.377. Lenses shall be UV-stabilized acrylic or glass. Provisions for house-side shielding shall be provided when specified.

Lumen depreciation at 50,000 hours of operation shall not exceed 15% of initial lumen output at the specified LED drive current and an ambient temperature of 77 °F (25 °C).

The assembly shall have individual serial numbers or other means for Manufacturer tracking.

Photometric Performance: The classification of LED luminaires shall be as follows:

VLW – Wattages ≤ 100, minimum delivered lumens 5,000,  
LW – Wattages 101 - 200, minimum delivered lumens 10,000,  
MW – Wattages 201 - 300, minimum delivered lumens 20,000,  
HW – Wattages 301 - 400, minimum delivered lumens 30,000,  
VHW – Wattages ≥ 401, minimum delivered lumens 40,000.

VLW= very low wattage, LW = low wattage, MW = medium wattage, HW = high wattage, and VHW = very high wattage luminaire. Luminaires with lumens below the stated minimums will not be accepted.

Testing. Luminaires shall be tested according to IES LM-79. The laboratory performing this test shall hold accreditation from the National Voluntary Laboratory Accreditation Program (NVLAP) under NIST. Submitted reports shall have a backlight, uplight, and glare (BUG) rating according to IESNA TM-15 including a luminaire classification system graph with both the recorded lumen value and percent lumens by zone.

Lumen maintenance shall be measured for the LEDs according to LM-80, or when available for the luminaires according to LM-84. The LM-80 report shall be based on a minimum of 6,000 hours, yet 10,000 hour reports shall be provided for luminaires where those tests have been completed.

Thermal testing shall be provided according to UL 1598. The luminaire shall start and operate in the ambient temperature range specified. The maximum rated case temperature of the driver, LEDs, and other internal components shall not be exceeded when the luminaire is operated in the ambient temperature range specified.

Mechanical design of protruding external surfaces such as heat sink fins shall facilitate hose-down cleaning and discourage debris accumulation. Testing shall be submitted when available to show the maximum rated case temperature of the driver, LEDs, and other internal components are not exceeded when the luminaire is operated with the heat sink filled with debris.

Calculations. Complete point-by-point luminance and veiling luminance calculations as well as listings of all indicated averages and ratios as applicable shall be provided according to IES RP-8 recommendations. Lighting calculations shall be performed using AGI32 software with calculations performed to two decimal places (i.e. x.xx cd/m<sup>2</sup>). Calculation results shall demonstrate that the submitted luminaire meets the lighting metrics specified in the project Luminaire Performance Tables (see plans). Scotopic or mesopic factors will not be allowed.

Lumen Maintenance Projection. The LEDs shall have long term lumen maintenance documented according to IESNA TM-21, or when available for the luminaires according to IESNA TM-28. The submitted calculations shall incorporate an in situ temperature measurement test (ISTMT) and LM-80 data with TM-21 inputs and reports according to the TM-21 calculator, or when available ISTMT and LM-84 data with TM-28 inputs and reports according to the TM-28 calculator. Ambient temperature shall be 77 °F (25 °C).

**Driver:** The driver for the luminaire shall be integral to the unit. It shall be mounted in the rear of the luminaire on the inside of a removable door or on a removable mounting pad. The removable door or pad shall be secure when fastened in place and all individual components shall be secured upon the removable element. Each component shall be readily removable from the removable door or pad for replacement.

Circuit Protection. Shall tolerate indefinitely open and short circuit output conditions without damage.

Ingress Protection. IP66 rating.

Input Voltage. Shall be suitable for operation over a range of 120 to 277 volts or 347 to 480 volts as required by the system operating voltage.

Operating Temperature. Operating ambient temperature range of -40 to 104 °F (-40 to 40 °C).

Driver Life. Life time of 100,000 hours at 77 °F (25 °C) ambient.

Safety/UL. Listed under UL 1310 or UL 1012.

Power Factor. Shall maintain a power factor of 0.9 or higher and total harmonic distortion of less than 20% at 50% load across the full supply voltage range.

Driver efficiency. Minimum efficiency of 90% at maximum load and a minimum efficiency of 85% for the driver operating at 50% power with driver efficiency defined as output power divided by input power.

Electrical Interference. Shall meet the Electromagnetic Compatibility (EMC) requirements for Class A digital devices included in the FCC Rules and Regulations, Title 47, Part 15.

Thermal Fold Back. The driver shall reduce the current to the LED module if the driver is overheating due to abnormal conditions.

Dimming. 0-10 V dimming capability.

Leakage current. Compliance with safety standards according to IEC 61347-1 and UL 1012.

Surge Protection Device: SPD shall be labeled as Type 4 in accordance to UL 1449 and be an integral part of the luminaire. It shall provide a minimum system protection level of 10 kV, 10 kA. To protect for a 10 kV, 10 kA surge the required clamping voltage of the external Metal Oxide Varistor (MOV) or other SPD shall be lower than 1 kV at 8 kA  $\{(10 \text{ kV}-2 \text{ kV})/1 \text{ ohm}=8 \text{ kA}\}$ .

The SPD shall comply with the following standards:

- 1) IEEE C62.41.1, IEEE Guide on the Surge Environment in Low-Voltage (1000 V and Less) AC Power Circuits,
- 2) IEEE C62.41.2, IEEE Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and Less) AC Power Circuits,
- 3) IEEE C62.45, IEEE Recommended Practice on Surge Testing for Equipment Connected to Low-Voltage (1000 V and Less) AC Power Circuits, and
- 4) ANSI C136.2, American National Standard for Roadway and Area Lighting Equipment – Luminaire Voltage Classification.

The SPD and performance parameters shall be posted at [www.UL.com](http://www.UL.com) under Category Code: VZCA2.

**Warranty:** The entire luminaire and all of its component parts shall be covered by a 10 year warranty. Failure is when one or more of the following occur:

- 1) Negligible light output from more than 10 percent of the LED packages
- 2) Condensed moisture inside the optical assembly
- 3) driver that continues to operate at a reduced output below 15% of the rated nominal output

The warranty period shall begin on the date of final acceptance of the lighting work as documented in the Resident Engineer's project notes.

**Submittal Requirements:** The Contractor shall submit, for approval, an electronic version of all associated luminaire IES files, AGi32 files and the TM-21 calculator spreadsheet with inputs and reports associated with the project luminaires. The Contractor shall also provide an electronic version of each of the following Manufacturer's product data for each type of luminaire.

- 1) Descriptive literature and catalogue cuts for luminaire, LED package, driver, and surge protection device.
- 2) LED drive current, total luminaire input wattage and total luminaire current at the system operating voltage or voltage range and ambient temperature of 77 °F (25 °C).
- 3) Luminaire efficacy expressed in lumens per watt (lpw) per luminaire.
- 4) Initial delivered lumens at the specified color temperature, drive current, and ambient temperature.
- 5) Computer photometric calculation reports.
- 6) TM-15 BUG rating report.
- 7) Documentation of Manufacturers experience and certification that luminaires were assembled in the U.S.A.
- 8) Supporting documentation of compliance with ANSI standards as well as listing requirements.
- 9) Supporting documentation of laboratory accreditations and certifications for specified testing.
- 10) Thermal testing documents.
- 11) IES LM-79, LM-80 (or LM-84) and TM-21 (or TM-28) reports.
- 12) Salt spray (fog) test reports and certification.
- 13) Vibration characteristics test reports and certification.
- 14) IP test reports.
- 15) Manufacturer written warranty.
- 16) Luminaire installation, maintenance, and washing instructions.



Luminaire Testing: One luminaire sample of each luminaire type shall be tested. The Contractor shall coordinate the luminaire testing, propose a properly accredited laboratory and an independent witness, submit their qualifications for approval prior to any testing, and pay all associated costs including travel expenses for the independent witness. Delays caused by the luminaire testing process shall not be grounds for additional compensation or extension of time.

The independent witness shall be present when tests are performed by the luminaire manufacturer. A laboratory independent of the luminaire manufacturer, distributor, and Contractor may self-certify the test results, in which case the independent witness need not be present during the testing.

After all qualifications have been approved, the independent witness shall select from the project luminaires at the manufacturer's facility the luminaires for testing. In all cases, the selection of luminaires shall be a random selection from the entire completed lot of luminaires required for the contract. Selections from partial lots will not be allowed. The independent witness shall mark each sample luminaire's shipping carton with the IDOT contract number and a unique sample identifier.

At the time of random selection, the independent witness shall inspect the luminaire(s) for compliance with all physical, mechanical, and labeling requirements for luminaires according to Sections 821 and 1067 and as stated herein. If deficiencies are found during the physical inspection, the Contractor shall have all luminaires of that type, wattage, and distribution inspected for the identified deficiencies and shall correct the problem(s) where found. Random luminaire selection and physical inspection must then be repeated. When the physical inspection is successfully completed, the independent witness shall mark the project number and sample identifier on the interior housing and ballast of the luminaires and have them shipped to the laboratory.

The testing performed by the laboratory shall include photometric, colorimetric, and electrical testing. Colorimetric values shall be determined from total spectral radiant flux measurements using a spectroradiometer. Photometric testing shall be according to IES recommendations and as a minimum, shall yield an isofootcandle chart, with max candela point and half candela trace indicated, an isocandela diagram, maximum plane and maximum cone plots of candela, a candlepower table (house and street side), a coefficient of utilization chart, a luminous flux distribution table, BUG rating report, and complete calculations based on specified requirements and test results. All testing shall cover the full spherical light output at a maximum of 5 degree intervals on both the vertical planes and the cones. Tests that "mirror" results from one hemisphere or quadrant to another are not acceptable.

The results for each photometric and colorimetric test performed shall be presented in a standard LM-79 report that includes the IDOT contract number, sample identifier, and the outputs listed above. The calculated results for each sample luminaire shall meet or exceed the contract specified levels in the luminaire performance table(s). The laboratory shall mark its test identification number on the interior of each sample luminaire.

Electrical testing shall be in accordance with LM-79.

The summary test report shall consist of a narrative documenting the test process, highlight any deficiencies and corrective actions, and clearly state which luminaires have met or exceeded all test requirements and may be released for delivery to the jobsite. Photographs shall also be used as applicable to document luminaire deficiencies and shall be included in the test report. The summary test report shall include the Luminaire Physical Inspection Checklist (see exhibit A), photometric and electrical test reports, and point-by-point photometric calculations performed in AGi32 sorted by luminaire type, wattage, and distribution. All test reports shall be certified by the independent test laboratory's authorized representative or the independent witness, as applicable, by a dated signature on the first page of each report. The summary test reports shall be delivered to the Engineer and the Contractor as an electronic submittal. Hard copy reports shall be delivered to the Engineer for record retention.

Should any of the tested luminaires fail to satisfy the specifications and perform according to approved submittal information, all luminaires of that type, wattage, and distribution shall be deemed unacceptable and shall be replaced by alternate equipment meeting the specifications. The submittal and testing process shall then be repeated in its entirety. The Contractor may request in writing that unacceptable luminaires be corrected in lieu of replacement. The request shall identify the corrections to be made and upon approval of the request, the Contractor shall apply the corrections to the entire lot of unacceptable luminaires. Once the corrections are completed, the testing process shall be repeated, including selection of a new set of sample luminaires. The number of luminaires to be tested shall be the same quantity as originally tested.

The process of retesting corrected or replacement luminaires shall be repeated until luminaires for each type, wattage, and distribution are approved for the project. Corrections and re-testing shall not be grounds for additional compensation or extension of time. No luminaires shall be shipped from the manufacturer to the jobsite until all luminaire testing is completed and approved in writing.

Submittal information shall include a statement of intent to provide the testing as well as a request for approval of the chosen independent witness laboratory. All summary test reports, written reports, and the qualifications of the independent witness and laboratory shall be submitted for approval to the Bureau of Design and Environment in Springfield.

Construction: Examine all luminaires delivered to the jobsite prior to installation to ensure all specification requirements and Shop Drawing comments have been incorporated by the Manufacturer. Deficient luminaires shall not be installed and the Engineer shall be notified immediately.

Luminaires shall be adjusted with the use of a level placed along the fixture housing or other means approved by the manufacturer to make sure they are installed with their optics set to deliver optimum designed light levels on the roadway. Any dirt or film on LEDs and/or the optical assembly shall be thoroughly removed using cleaning methods approved by the manufacturer.

Basis of Payment: This work will be paid for at the contract unit price per each for Luminaire, LED, Horizontal Mount, of the wattage specified which shall be payment in full for all labor, equipment and material necessary to perform the work specified herein.

**EXHIBIT A**

Illinois Department of Transportation  
 Luminaire Physical Inspection Checklist

IDOT Contract No: \_\_\_\_\_ Date: \_\_\_\_\_ Inspector: \_\_\_\_\_

Luminaire Type: \_\_\_\_\_ Wattage: \_\_\_\_\_ Distribution: \_\_\_\_\_

Packaging:

Inspection Item	Sample:	Sample:	Sample:	Sample:
Shipping carton properly labeled				
Packaging adequately secures and protects luminaire				

Luminaire Housing

Inspection Item	Sample:	Sample:	Sample:	Sample:
Paint and coatings even and reasonably unblemished				
Correct 7-pin receptacle in place and adequately sealed				
No dents, cracks, or other malformations present				
Correct seal of the housing and individual LEDs				
Internal and external labels correct				
Pole or bracket mounting hardware correct				

Light Source Compartment

Inspection Item	Sample:	Sample:	Sample:	Sample:
Lens properly secured to each LED or door or housing				
Lenses not cracked or scratched				
Correct number of LEDs and LED array assemblies				
LEDs correctly installed and oriented				
All fasteners are stainless steel				
Surfaces are smooth to prevent dirt accumulation				

Electrical Compartment

Inspection Item	Sample:	Sample:	Sample:	Sample:
Driver(s) is held securely in place				
Wiring is undamaged, protected from sharp edges, and neatly routed				
Terminations for incoming power wiring are clearly marked and correct for 10 AWG cables				
Driver has quick-disconnect plugs for power and lamp connections which cannot be mis-connected				
Photocell socket is securely mounted and gasketed				
Photocell receptacle operates correctly				
All fasteners are stainless steel and captive				
Electrical components securely mounted on removable tray with quick-disconnect plugs for ease of maintenance				

Describe any deficiencies found:

## **LED LIGHTING DIMMING CONTROL SYSTEM**

Description: This work shall include all material, labor, and equipment necessary to install a fully functional LED lighting dimming control system (system). The system shall include wireless control modules (nodes), occupancy detection sensors, span of unit duct, conduits, pole, foundation, support brackets, wiring, as well as all accessories required for a complete operational system. Components of the system shall be UL listed, and the system shall be compatible with LED luminaires from more than one manufacturer.

The system shall be installed as shown on the plans. It shall control 14 LED luminaires mounted on the US52 Bridge over the Mississippi River based on motion detection. The detectors shall detect the presence of vehicles, bicyclists and pedestrians and send a signal to the nodes. The nodes shall turn the lighting on and keep them on for a set period of time as determined by the Department. The system shall be stand-alone, all initial setup and necessary adjustments shall be performed locally on site. The system will not require remote access therefore advanced features and equipment like gateways, a central management system, communication network, etc. may be add on features for future consideration but shall not be included in the bid.

The system shall be accessible through a handheld mobile device via a web browser/native application that allows on-site setup and adjustments. Failure of the system or its components shall result in the default condition of full power to the luminaires.

Manufacturer Experience. The system shall be designed to be incorporated into a lighting system with an expected 30 year lifespan and shall be a standard product of an established lighting controls or roadway luminaire manufacturer. The manufacturer shall have a minimum of 2 years experience manufacturing adaptive lighting control systems for LED roadway lighting and shall have a minimum of 10 lighting control system installations within the continental U.S.A.

### Materials:

#### Occupancy detection sensor (Main)

The sensor shall be long-range, microwave sensor specifically designed for controlling street and area lights. The operating voltage of the sensor shall be 12Vdc. One sensor shall be provided with a 120-277Vac to 12Vdc power converter and shall be mounted on a pole. The mounting height shall be per the manufacturer's recommendation. The sensor shall detect occupancy within 150ft range minimum.

The second sensor shall be powered by the luminaire driver. The sensor shall be mounted on the luminaire housing and wired to the driver and the node per the manufacturer's recommendations.

Both sensors shall be sealed, suitable for use in wet locations, and shall have a minimum IEC ingress protection rating of IP65.

#### Occupancy detection sensor (backup)

The system shall be provided with two backup sensors as shown on the plans. The backup sensor shall utilize a different technology than the main sensors (PIR or similar) and shall be specifically designed for controlling street and area lights.

The backup sensor shall be installed and configured to work with the main sensor and the node as a system. Each movement detected by the main sensor shall be verified by the backup sensor before a command is sent to the luminaires. The system shall also be configurable so that detection by either sensor shall result in a response by the luminaires.

The sensors shall be pole mounted. The mounting height and sensor aiming shall be per manufacturer's recommendations. The Contractor shall provide all necessary mounting brackets, hardware, and interface between sensors.

#### Nodes

Nodes shall be sealed and mounted on each luminaire, using a 7 PIN NEMA C136.41 standard polarized twist-lock receptacle. The node shall have an operating temperature range of -40 to 158 °F (-40 to 70 °C).

A license free 915 MHz spectrum shall be utilized to minimize interference and shall transmit data using a randomly selected channel from a group of a minimum of 50 discrete channels. The node shall comply with IEEE 802.154gPHY and IETF 6LoWPAN communication standard requirements, shall utilize a self-forming and self-restoring mesh communication protocol, and shall have a minimum line of sight range of 1500 ft (457 m) for node to node and node to gateway communication. AES 128 encryption communication shall be followed.

The node shall have a motion detection input. The node shall actuate a luminaire dimmed state by creating a 0-10V control signal according to IEC 60929 Annex E. The node shall differentiate a power outage from the power off state.

The node shall be capable of maintaining constant luminaire output over time by compensating for lumen depreciation and shall offer adaptive control, whereby the ON/OFF and DIMMED state of a single luminaire or group of luminaires is modified in response to input from the motion detection sensors.

The node shall be sealed, suitable for use in wet locations, and shall have a minimum IEC ingress protection rating of IP65.

System Start-up. The system manufacturer shall provide the Contractor all training manuals, instructions and support necessary to install the system. Once the installation is complete a system start-up shall begin. Start-up configuration shall include system components including the hardware, firmware, and software. A manufacturer's representative shall be on site to support system start-up during the entire start-up period.

The Contractor shall schedule system start-up training and notify the Department no less than seven working days prior to training. System start-up training shall be provided and shall cover the following:

1. Hardware configuration, calibration and testing
2. Software and firmware configuration, testing, and updating
3. Administration and operation
4. Troubleshooting

The training sessions shall be recorded and delivered to the Department as a DVD video file. The Department shall also be given 3 bound copies of all manuals, operating procedures, and necessary documentation for maintaining the system.

The system start-up shall cover (at a minimum) the following:

1. Inspect the installed system and identify any issues that need to be remedied
2. Configure any and all hardware, firmware, or software as necessary to enable all system components to operate as intended
3. Ensure that the latest applicable versions of all firmware and software are installed, and perform any necessary updates or upgrades.
4. Successfully demonstrate all system functions and capabilities described during system start-up training.

Following the acceptance of a successful demonstration of all system functions and capabilities, a trial period shall commence. This trial period shall consist of 28 consecutive calendar days of system operation. Over the course of the trial period, all system functions and capabilities shall operate normally. Any issues discovered shall be remedied by the Contractor. The manufacturer's representative shall be available for support during the trial period but need not be on site.

At the completion of the trial period the Contractor shall submit written documentation of all hardware, firmware, or software configuration changes or modifications that were required to enable all system components to operate as intended. This documentation shall be verified by the manufacturer's representative and shall accurately represent the system following the completion of the trial period.

System Maintenance. The Lighting control system shall be maintained by the Department. The manufacturer shall provide current contact information to the Department and be available on a 24/7 basis for hardware and software support according to the warranty terms for the duration of the warranty period. The Manufacturer shall supply system fixes and upgrades at no cost to the Department throughout the life of the warranty.

Warranty. The entire System and all of its component parts shall be covered by a 5 year warranty. The warranty period shall begin on the date of project final acceptance for lighting as documented in the Resident Engineer's project notes.

Submittal Requirements. The contractor shall submit, for approval one (1) digital copy of the following manufacturer's product data:

1. Descriptive literature and catalogue cuts for each of the system components.
2. Documentation of manufacturer's experience with lighting control systems as well as size and location of previous installations.
3. Supporting documentation for all applicable certifications.
4. Diagrams and explanations of component interoperability and compatibility.
5. Written warranty.

Basis of Payment: This work will be paid for at the contract lump sum price for LED LIGHTING DIMMING CONTROL SYSTEM, which shall include all work as described herein.

**STATE OF ILLINOIS  
 ILLINOIS DEPARTMENT OF TRANSPORTATION  
 LUMINAIRE PERFORMANCE TABLE – LED LUMINAIRE, HORIZONTAL MOUNT, LW**

<b>GIVEN CONDITIONS</b>		
<b>ROADWAY DATA</b>	Pavement Width (in one direction only)	12 ft.
	Pavement Width (in opposite direction)	12 ft.
	Number of Lanes (in one direction only)	1
	Number of Lanes (in opposite direction)	1
	Median Width	N/A
	I.E.S. Surface Classification	R3
	Q-Zero Value	.07
<b>LIGHT POLE DATA</b>	Mounting Height	38 ft.
	Mast Arm Length	6 ft.
	Pole Set-Back From Edge of Pavement	9 ft.
<b>LUMINAIRE DATA</b>	Luminaire Type	LED
	Luminaire Lumens	10,000 min
	I.E.S. Vertical Distribution	Short or Medium
	Lamp Lumen Depreciation Factor	0.85 min.
	Luminaire BUG Rating (i.e. 3-0-3)	B2-U0-G2 or B3-U0-G2
	Dirt Depreciation Factor	0.80
	Equipment Factor	0.95
	Total Light Loss Factor	0.646 min.
<b>LAYOUT DATA</b>	Spacing	190 ft.
	Configuration	One Sided
	Luminaire Overhang over edge of pavement	-3 ft.

**NOTE:** Variations from the above specified I.E.S. distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

<b>PERFORMANCE REQUIREMENTS</b>		
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**NOTE:** These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above. TM-21 and LM-80 reports, or TM-28 and LM-84 reports must be attached and must support the Lamp Lumen Depreciation Factor given above.

<b>ILLUMINATION</b>	Average Horizontal Illumination, $E_{AVE}$	6 Lux / 0.90 fc
	Uniformity Ratio, $E_{AVE}/E_{MIN}$	3.0:1
<b>LUMINANCE</b>	Average Luminance, $L_{AVE}$	0.60 Cd/m <sup>2</sup>
	Uniformity Ratio, $L_{AVE}/L_{MIN}$	3.5:1
	Uniformity Ratio, $L_{MAX}/L_{MIN}$	6.0:1

Max. Veiling Luminance Ratio,  $L_V/L_{AVE}$  0.30:1

**STATE OF ILLINOIS  
 ILLINOIS DEPARTMENT OF TRANSPORTATION  
 LUMINAIRE PERFORMANCE TABLE – LED LUMINAIRE, HORIZONTAL MOUNT, MW**

<b>GIVEN CONDITIONS</b>		
<b>ROADWAY DATA</b>	Pavement Width (in one direction only)	<u>12 ft.</u>
	Pavement Width (in opposite direction)	<u>12 ft.</u>
	Number of Lanes (in one direction only)	<u>1</u>
	Number of Lanes (in opposite direction)	<u>1</u>
	Median Width	<u>12 ft.</u>
	I.E.S. Surface Classification	<u>R3</u>
	Q-Zero Value	<u>.07</u>
<b>LIGHT POLE DATA</b>	Mounting Height	<u>45 ft.</u>
	Mast Arm Length	<u>15 ft.</u>
	Pole Set-Back From Edge of Pavement	<u>15 ft.</u>
<b>LUMINAIRE DATA</b>	Luminaire Type	<u>LED</u>
	Luminaire Lumens	<u>20,000 min</u>
	I.E.S. Vertical Distribution	<u>Short or Medium</u>
	Lamp Lumen Depreciation Factor	<u>0.85 min.</u>
	Luminaire BUG Rating (i.e. 3-0-3)	<u>B2-U0-G3 or B3-U0-G2</u>
	Dirt Depreciation Factor	<u>0.80</u>
	Equipment Factor	<u>0.95</u>
Total Light Loss Factor	<u>0.646 min.</u>	
<b>LAYOUT DATA</b>	Spacing	<u>175 ft.</u>
	Configuration	<u>One Sided</u>
	Luminaire Overhang over edge of pavement	<u>0 ft.</u>

**NOTE:** Variations from the above specified I.E.S. distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.



<b>PERFORMANCE REQUIREMENTS</b>
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**NOTE:** These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above. TM-21 and LM-80 reports, or TM-28 and LM-84 reports must be attached and must support the Lamp Lumen Depreciation Factor given above.

<b>ILLUMINATION</b>	Average Horizontal Illumination, $E_{AVE}$	6 Lux / 0.90 fc
	Uniformity Ratio, $E_{AVE}/E_{MIN}$	3.0:1
<b>LUMINANCE</b>	Average Luminance, $L_{AVE}$	0.60 Cd/m <sup>2</sup>
	Uniformity Ratio, $L_{AVE}/L_{MIN}$	3.5:1
	Uniformity Ratio, $L_{MAX}/L_{MIN}$	6.0:1
	Max. Veiling Luminance Ratio, $L_V/L_{AVE}$	0.30:1

**BUILDING REMOVAL - CASE II (NON-FRIABLE ASBESTOS ABATEMENT) (BDE)**

Effective: September 1, 1990

Revised: April 1, 2010

**BUILDING REMOVAL:** This work shall consist of the removal and disposal of one building, together with all foundations, retaining walls, and piers, down to a plane 1 ft (300 mm) below the ultimate or existing grade in the area and also all incidental and collateral work necessary to complete the removal of the building(s) in a manner approved by the Engineer. Any holes, such as basements, shall be filled with a suitable granular material. The building are identified as follows:

<u>Bldg. No.</u>	<u>Parcel No.</u>	<u>Location</u>	<u>Description</u>
Building Removal No. 1	2031101	1203 Main St.	Commercial Property

**Discontinuance of Utilities:** The Contractor shall arrange for the discontinuance of all utility services and the removal of the metering devices that serve the building(s) according to the respective requirements and regulations of the City, County, or utility companies involved. The Contractor shall disconnect and seal, in an approved manner, all service outlets that serve any building(s) he/she is to remove.

Signs: Immediately upon execution of the contract and prior to the wrecking of any structures, the Contractor shall be required to paint or stencil, in contrasting colors of an oil base paint, on all four sides of each residence and two opposite sides of other structures, the following sign:

PROPERTY ACQUIRED  
FOR HIGHWAY  
CONSTRUCTION TO BE  
DEMOLISHED BY THE

VANDALS WILL BE  
PROSECUTED

The signs shall be positioned in a prominent location on the structure so that they can be easily seen and read and at a sufficient height to prevent defacing. The Contractor shall not paint signs nor start demolition of any building prior to the time that the State becomes the owner of the respective building.

The Contractor has the option of removing the non-friable asbestos prior to demolition or demolishing the building(s) with the non-friable asbestos in place. Refer to the Special Provisions titled "Asbestos Abatement (General Conditions)" and "Removal and Disposal of Non-Friable Asbestos Building No. 1" contained herein.

Basis of Payment: This work will be paid for at the contract lump sum unit price for BUILDING REMOVAL, numbers as listed above, which price shall be payment in full for complete removal of the buildings and structures, including any necessary backfilling material as specified herein. The lump sum unit price(s) for this work shall represent the cost of demolition and disposal assuming all non-friable asbestos is removed prior to demolition. Any salvage value shall be reflected in the contract unit price for this item.

EXPLANATION OF BIDDING TERMS: Two separate contract unit price items have been established for the removal of each building. They are:

1. BUILDING REMOVAL NO. 1
2. REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 1

The Contractor shall have two options available for the removal and disposal of the non-friable asbestos.

The pay item for removal and disposal of non-friable asbestos will not be deleted regardless of the option chosen by the Contractor.

**ASBESTOS ABATEMENT (GENERAL CONDITIONS):** This work consists of the removal and disposal of non-friable asbestos from the building(s) to be demolished. All work shall be done according to the requirements of the U.S. Environmental Protection Agency (USEPA), the Illinois Environmental Protection Agency (IEPA), the Occupational Safety and Health Administration (OSHA), the Special Provision for "Removal and Disposal of Non-Friable Asbestos, Building No. 1," and as outlined herein.

Sketches indicating the location of Asbestos Containing Material (ACM) are included in the proposal on pages 127 thru 129. Also refer to the Materials Description Table on page 123 for a brief description and location of the various materials. Also included is a Materials Quantities Table on page 123. This table states the ACM is non-friable and gives the approximate quantity. The quantities are given only for information and it shall be the Contractor's responsibility to determine the exact quantities prior to submitting his/her bid.

The work involved in the removal and disposal of non-friable asbestos if done prior to demolition, shall be performed by a Contractor or Sub-Contractor prequalified with the Illinois Capital Development Board.

The Contractor shall provide a shipping manifest, similar to the one shown on page 130, to the Engineer for the disposal of all ACM wastes.

**Permits:** The Contractor shall apply for permit(s) in compliance with applicable regulations of the Illinois Environmental Protection Agency. Any and all other permits required by other federal, state, or local agencies for carrying on the work shall be the responsibility of the Contractor. Copies of the permit(s) shall be sent to the district office and the Engineer.

**Notifications:** The "Demolition/Renovation Notice" form, which can be obtained from the IEPA office, shall be completed and submitted to the address listed below at least ten days prior to commencement of any asbestos removal or demolition activity. Separate notices shall be sent for the asbestos removal work and the building demolition if they are done as separate operations.

Asbestos Demolition/Renovation Coordinator  
Illinois Environmental Protection Agency  
Division of Air Pollution Control  
P. O. Box 19276  
Springfield, Illinois 62794-9276  
(217) 785-1743

Notices shall be updated if there is a change in the starting date or the amount of asbestos changes by more than 20 percent.

Submittals:

- A. All submittals and notices shall be made to the Engineer except where otherwise specified herein.
- B. Submittals that shall be made prior to start of work:
  1. Submittals required under Asbestos Abatement Experience.
  2. Submit documentation indicating that all employees have had medical examinations and instruction on the hazards of asbestos exposure, on use and fitting of respirators, on protective dress, on use of showers, on entry and exit from work areas, and on all aspects of work procedures and protective measures as specified in Worker Protection Procedures.
  3. Submit manufacturer's certification stating that vacuums, ventilation equipment, and other equipment required to contain airborne fibers conform to ANSI 29.2.
  4. Submit to the Engineer the brand name, manufacturer, and specification of all sealants or surfactants to be used. Testing under existing conditions will be required at the direction of the Engineer.
  5. Submit proof that all required permits, site locations, and arrangements for transport and disposal of asbestos-containing or asbestos-contaminated materials, supplies, and the like have been obtained (i.e., a letter of authorization to utilize designated landfill).
  6. Submit a list of penalties, including liquidated damages, incurred through non-compliance with asbestos abatement project specifications.
  7. Submit a detailed plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location and layout of decontamination units, the sequencing of work, the respiratory protection plan to be used during this work, a site safety plan, a disposal plan including the location of an approved disposal site, and a detailed description of the methods to be used to control pollution. The plan shall be submitted to the Engineer prior to the start of work.
  8. Submit proof of written notification and compliance with the "Notifications" paragraph.

C. Submittals that shall be made upon completion of abatement work:

1. Submit copies of all waste chain-of-custodies, trip tickets, and disposal receipts for all asbestos waste materials removed from the work area;
2. Submit daily copies of work site entry logbooks with information on worker and visitor access;
3. Submit logs documenting filter changes on respirators, HEPA vacuums, negative pressure ventilation units, and other engineering controls; and
4. Submit results of any bulk material analysis and air sampling data collected during the course of the abatement including results of any on-site testing by any federal, state, or local agency.

Certificate of Insurance:

- A. The Contractor shall document general liability insurance for personal injury, occupational disease and sickness or death, and property damage.
- B. The Contractor shall document current Workmen's Compensation Insurance coverage.
- C. The Contractor shall supply insurance certificates as specified by the Department.

Asbestos Abatement  
Experience:

- A. Company Experience. Prior to starting work, the Contractor shall supply evidence that he/she has been prequalified with the Illinois Capital Development Board and that he/she has been included on the Illinois Department of Public Health's list of approved Contractors.

B. Personnel Experience:

1. For Superintendent, the Contractor shall supply:
  - a. Evidence of knowledge of applicable regulations in safety and environmental protection is required as well as training in asbestos abatement as evidenced by the successful completion of a training course in supervision of asbestos abatement as specified in 40 CFR 763, Subpart E, Appendix C, EPA Model Contractor Accreditation Plan. A copy of the certificate of successful completion shall be provided to the Engineer prior to the start of work.
  - b. Documentation of experience with abatement work in a supervisory position as evidenced through supervising at least two asbestos abatement projects; provide names, contact, phone number, and locations of two projects in which the individual(s) has worked in a supervisory capacity.
2. For workers involved in the removal of asbestos, the Contractor shall provide training as evidenced by the participation and successful completion of an accredited training course for asbestos abatement workers as specified in 40 CFR 763, Subpart E, Appendix C, EPA Model Contractor Accreditation Plan. A copy of the certificate of successful completion shall be provided to all employees who will be working on this project.

ABATEMENT AIR MONITORING: The Contractor shall comply with the following:

- A. Personal Monitoring. All personal monitoring shall be conducted per specifications listed in OSHA regulation, Title 29, Code of Federal Regulation 1926.58. All area sampling shall be conducted according to 40 CFR Part 763.90. All air monitoring equipment shall be calibrated and maintained in proper operating condition. Excursion limits shall be monitored daily. Personal monitoring is the responsibility of the Contractor. Additional personal samples may be required by the Engineer at any time during the project.
- B. Interior Non-Friable Asbestos-Containing Materials. The Contractor shall perform personal air monitoring during removal of all non-friable Transite and floor tile removal operations. The Engineer will also have the option to require additional personal samples and/or clearance samples during this type of work.
- C. Exterior Non-Friable Asbestos-Containing Materials. The Contractor shall perform personal air monitoring during removal of all non-friable cementitious panels, piping, roofing felts, and built up roofing materials that contain asbestos.

The Contractor shall conduct down wind area sampling to monitor airborne fiber levels at a frequency of no less than three per day.

D. Air Monitoring Professional

1. All air sampling shall be conducted by a qualified Air Sampling Professional supplied by the Contractor. The Air Sampling Professional shall submit documentation of successful completion of the National Institute for Occupational Safety and Health (NIOSH) course #582 - "Sampling and Evaluating Airborne Asbestos Dust".
2. Air sampling shall be conducted according to NIOSH Method 7400. The results of these tests shall be provided to the Engineer within 24 hours of the collection of air samples.

REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 1: The Contractor has the option of removing and disposing of the non-friable asbestos prior to demolition of the building(s) or demolishing the building(s) with the non-friable asbestos in place.

Option #1 - If the Contractor chooses to remove all non-friable asbestos prior to demolition, the work shall be done according to the Special Provision titled "Asbestos Abatement (General Conditions)".

Option #2 - If the Contractor chooses to demolish the building(s) with the non-friable asbestos in place, the following provisions shall apply:

1. Continuously wet all non-friable ACM and other building debris with water during demolition.
2. Dispose of all demolition debris as asbestos containing material by placing it in lined, covered transport haulers and placing it in an approved landfill.

This work will be paid for at the contract unit price per lump sum for REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 1, as shown.

The cost for this work shall be determined as follows:

Option #1 - Actual cost of removal and disposal of non-friable asbestos.

Option #2 - The difference in cost between removing and disposing of the building if all non-friable asbestos is left in place and removing and disposing of the building assuming all non-friable asbestos is removed prior to demolition.

The cost of removing and disposing of the building(s), assuming all non-friable asbestos is removed first, shall be represented by the pay item "BUILDING REMOVAL NO. 1".

Regardless of the option chosen by the Contractor, this pay item will not be deleted, nor will the pay item BUILDING REMOVAL NO. 1 be deleted.

RE

## MOVAL AND DISPOSAL OF REGULATED SUBSTANCES

The work shall be according to Article 669 of the Standard Specifications and the following:

Qualifications. The term environmental firm shall mean an environmental firm with at least five (5) documented leaking underground storage tank (LUST) cleanups or that is pre-qualified in hazardous waste by the Department. Documentation includes but not limited to verifying remediation and special waste operations for sites contaminated with gasoline, diesel, or waste oil in accordance with all Federal, State, or local regulatory requirements and shall be provided to the Engineer for approval. The environmental firm selected shall not be a former or current consultant or have any ties with any of the properties contained within and/or adjacent to this construction project.

General. This Special Provision will likely require the Contractor to subcontract for the execution of certain activities.

All contaminated materials shall be managed as either “uncontaminated soil” or non-special waste. This work shall include monitoring and potential sampling, analytical testing, and management of a material contaminated by regulated substances. The Environmental Firm shall continuously monitor all soil excavation for worker protection and soil contamination.

Phase I Preliminary Engineering information is available through the District’s Environmental Studies Unit. Soil samples or analysis without the approval of the Engineer will be at no additional cost to the Department. The lateral distance is measured from centerline and the farthest distance is the offset distance or construction limit whichever is less.

The Contractor shall manage any excavated soils and sediment within the following areas:

### Site 2387V1-03 (Municipal Building)

- Station 709+20 to Station 709+55 (US 52/IL 64/IL 84), 145 feet LT to 210 feet LT (Municipal Building, PESA site 387V1-03, 1123 N. Main Street) – This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance with Article 669.09. COC sampling parameters: manganese.
- Station 708+35 to Station 709+20 (US 52/IL 64/IL 84), 0 to 40 feet LT (Municipal Building, PESA site 387V1-03, 1123 N. Main Street) - This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance with Article 669.09. COC sampling parameters: manganese.

### Site 2387V1-04 (Commercial Building)

- Station 709+55 to Station 710+25 (US 52/IL 64/IL 84), 0 to 80 feet LT (Commercial Building, PESA site 2387V1-04, 1203 N. Main Street) - This material meets the criteria of Article 669.09(a)(5) and shall be managed in accordance with Article 669.09. COC sampling parameters: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and lead.
- Station 709+55 to Station 710+15 (US 52/IL 64/IL 84), 160 to 220 feet LT (Commercial Building, PESA site 2387V1-04, 1203 N. Main Street) - This material meets the criteria of Article 669.09(a)(3) and shall be managed in accordance with Article 669.09. COC sampling parameters: benzo(a)pyrene.



- Station 709+55 to Station 710+25 (US 52/IL 64/IL 84), 80 to 160 feet LT (Commercial Building, PESA site 2387V1-04, 1203 N. Main Street) - This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance with Article 669.09. COC sampling parameters: lead.
- Station 710+25 to Station 710+90 (US 52/IL 64/IL 84), 0 to 77 feet LT (Commercial Building, PESA site 2387V1-04, 1203 N. Main Street) - This material meets the criteria of Article 669.09(a)(3) and shall be managed in accordance with Article 669.09. COC sampling parameters: benzo(a)pyrene, dibenzo(a,h)anthracene, and manganese.

#### Site 2387V1-10 (BNSF Railroad)

- Station 715+40 to Station 716+05 (US 52/IL 64/IL 84), 0 to 105 feet LT (BNSF Railroad, PESA site 2387V1-10, 1200-1300 blocks of N. Main Street) – This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance with Article 669.09. COC sampling parameters: benzo(a)pyrene, lead, antimony, and manganese.
- Station 716+05 to Station 716+30 (US 52/IL 64/IL 84), 0 to 100 feet LT (BNSF Railroad, PESA site 2387V1-10, 1200-1300 blocks of N. Main Street) – This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance with Article 669.09. COC sampling parameters: lead.

#### Site 2387V1-13 (US 52/IL 64)

- Station 1546+10 to Station 1546+65 (US 52/IL 64), 0 to 55 feet LT (US 52/IL 64, PESA site 2387V1-13) - This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance with Article 669.09. COC sampling parameters: benzo(a)pyrene and lead.
- Station 1546+10 to Station 1547+25 (US 52/IL 64), 0 to 50 feet RT (US 52/IL 64, PESA site 2387V1-13) - This material meets the criteria of Article 669.09(a)(3) and shall be managed in accordance with Article 669.09. COC sampling parameters: benzo(a)pyrene, benzo(b)fluoranthene, and dibenzo(a,h)anthracene.
- Station 1546+65 to Station 1550+65 (US 52/IL 64), 0 to 60 feet LT (US 52/IL 64, PESA site 2387V1-13) - This material meets the criteria of Article 669.09(a)(3) and shall be managed in accordance with Article 669.09. COC sampling parameters: benzo(a)pyrene and lead.
- Station 1547+25 to Station 1548+50 (US 52/IL 64), 0 to 55 feet RT (US 52/IL 64, PESA site 2387V1-13) - This material meets the criteria of Article 669.09(a)(5) and shall be managed in accordance with Article 669.09. COC sampling parameters: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)-anthracene, indeno(1,2,3-cd)pyrene, and lead.
- Station 1550+65 to Station 1553+40 (US 52/IL 64), 0 to 70 feet LT (US 52/IL 64, PESA site 2387V1-13) - This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance with Article 669.09. COC sampling parameters: benzo(a)pyrene, lead, and pH.
- Station 1551+50 to Station 1552+80 (US 52/IL 64), 0 to 50 feet RT (US 52/IL 64, PESA site 2387V1-13) - This material meets the criteria of Article 669.09(a)(3) and shall be managed in accordance with Article 669.09. COC sampling parameter: benzo(a)pyrene.
- Station 1556+00 to Station 1557+20 (US 52/IL 64), 0 to 60 feet LT (US 52/IL 64, PESA site 2387V1-13) - This material meets the criteria of Article 669.09(a)(3) and shall be managed in accordance with Article 669.09. COC sampling parameters: benzo(a)pyrene and lead.

- Station 1556+60 to Station 1559+75 (US 52/IL 64), 0 to 100 feet RT (US 52/IL 64, PESA site 2387V1-13) - This material meets the criteria of Article 669.09(a)(3) and shall be managed in accordance with Article 669.09. COC sampling parameters: benzo(a)pyrene, lead, and manganese.
- Station 1558+60 to Station 1559+75 (US 52/IL 64), 0 to 60 feet LT (US 52/IL 64, PESA site 2387V1-13) - This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance with Article 669.09. COC sampling parameters: manganese.
- Station 1559+75 to Station 1560+45 (US 52/IL 64), 0 to 40 feet RT (US 52/IL 64, PESA site 2387V1-13) - This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance with Article 669.09. COC sampling parameters: benzo(a)pyrene, manganese, and pH.

### **THERMAL INTEGRITY PROFILING FOR DRILLED SHAFTS**

Effective 5-19-2015

Description. This work shall consist of furnishing and installing materials and equipment necessary to perform Thermal Integrity Profile (TIP) testing of drilled shaft foundations according to Illinois Modified ASTM D7949. This work also includes analysis of the TIP data, preparation of reports summarizing the TIP data, confirming anomalies identified in the TIP data, and designing and implementing repairs to correct defects in drilled shafts.

For this project only one shaft per pier for piers 7, 8, 9, and 10 shall be instrumented and TIP tested. This testing shall be in addition to the CSL testing already specified for all shafts. In addition, the temperature at the center of the shaft shall also be recorded with depth for the length of the shaft and the duration of the TIP testing. The Engineer will select the shafts to be instrumented for TIP testing.

Qualifications. A TIP consulting firm shall direct the work. The TIP consulting firm shall be a company independent from the Contractor with a minimum of 3 years of experience performing TIP testing. The representative from the TIP consulting firm shall be an Illinois Registered Professional Engineer and have experience on a minimum of 5 TIP testing projects with similar site conditions to this project.

Equipment. Equipment shall be according to Illinois Modified ASTM D7949, Method B.

Training. The TIP Consultant shall provide instruction on the use of the embedded thermal sensors, recording apparatus, and the processing and display apparatus to the Engineer. The TIP Consultant shall provide on-site technical assistance to the Engineer in the use of the TIP equipment.

The TIP Consultant shall provide instruction on the installation of the embedded thermal sensors.

Construction. Construction shall be according to Illinois Modified ASTM D7949, Method B.

Embedded thermal sensors shall be installed on the reinforcing cage according to Illinois Modified ASTM D7949. Embedded thermal sensors will be checked for functionality after the reinforcing cage has been placed in the shaft excavation. Any embedded thermal sensors that are not functioning correctly shall be removed and replaced.

Embedded thermal sensors shall have enough lead in wire to allow for connection of the recording apparatus above the water elevation of the river.

The Engineer will download the TIP data from the processing and display apparatus and send it to the TIP Consultant.

Reports. Reports shall be according to Illinois Modified ASTM D7949. If anomalies are identified, they shall be verified by coring or other methods approved by the Engineer. If the verification identifies a defect, a repair proposal shall be prepared by an Illinois Licensed Structural Engineer and submitted to the Engineer for review and approval. In addition to design calculations and drawings, the repair proposal shall include a step by step repair procedure which shall include the equipment, materials, and quality control measures to be used.

Method of Measurement. TIP testing, analysis, and reporting will be measured for payment as each drilled shaft foundation tested.

Confirmation of anomalies will be measured for payment according to Article 105.12.

Designing and implementing repairs to correct defects in drilled shafts will not be measured for payment.

If the length of shaft to be tested is lengthened due to subsurface conditions encountered, the cost of the additional sensors and associated wiring shall be paid for according to Article 109.04.

Basis of Payment. TIP testing, analysis, and reporting will be paid for at the contract unit price per each for THERMAL INTEGRITY PROFILE TESTING

ILLINOIS MODIFIED ASTM D 7949  
 Effective Date: May 18, 2015  
 Standard Method of Test  
 for  
**Thermal Integrity Profiling of Concrete Deep Foundations**  
 Reference ASTM D7949-14

ASTM SECTION	Illinois Modification
6.4.1	Revise the first sentence of this section as follows: The recording apparatus shall record depth and temperature data from each access duct or group of embedded thermal sensors at a depth interval of no greater than 300 mm.
7.1	Revise this section as follows: The access ducts or embedded thermal sensors shall be installed during construction of the foundation element. For drilled shafts, the location plan shall provide one access duct for every 300 mm of diameter, with a minimum of four access ducts for elements with diameters 1.2 m or less. Access ducts shall be spread equally around the perimeter and spaced at an equal distance from the axis. Access locations for embedded thermal sensors shall conform to the same location plan requirements as access ducts, and the sensor levels shall be the same for all of the access locations with a maximum depth interval between levels of 300 mm. Fig 3 illustrates several plan layout configurations for the access locations. If a drilled or augered deep foundation element less than 1 m in diameter has only a center bar, attach the access duct or embedded sensors to the center bar, but it should incorporate at least two access locations when there is a reinforcing cage.
7.1.2	Revise this section as follows: The tests should be performed starting at the beginning of concrete placement in the element and terminating a minimum of 24 hours after the peak temperature of the concrete has been reached.
7.5.3	Revise this section as follows: Connect each embedded thermal sensor to the Recording Apparatus. Start recording temperature data to the nearest 0.1°C prior to concrete placement. Record temperatures periodically at intervals not to exceed 15 minutes. Testing shall be terminated only after a minimum of 24 hours has elapsed after the peak temperature of the concrete has been reached.

## HIGH LOAD MULTI-ROTATIONAL BEARINGS

Effective: October 13, 1988

Revised: October 30, 2012

Description. This work shall consist of furnishing and installing High Load Multi-Rotational type bearing assemblies at the locations shown on the plans.

High Load Multi-Rotational (HLMR) bearings shall be one of the following at the Contractors option unless otherwise noted on the plans:

- a) Pot Bearings. These bearings 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 0.03 in. (750 microns) 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. PTFE sheets, or silicone grease shall be utilized to facilitate rotation of the rubber disc. Suitable brass sealing rings shall be provided to prevent any extrusion between piston and cylinder.
- b) Shear Inhibited Disc Type Bearing. The Structural Element shall be restricted from shear by the pin and ring design and need not be completely confined as with the Pot Bearing design. The disc shall be a molded monolithic Polyether Urethane compound.

These bearings shall be further subdivided into one or more of the following types:

- 1) Fixed. These allow rotation in any direction but are fixed against translation.
- 2) Guided Expansion. These allow rotation in any direction but translation only in limited directions.
- 3) Non-Guided Expansion. These allow rotation and translation in any direction.

The HLMR 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 HLMR 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.

All bearings shall be supplied by prequalified manufacturers. The Department will maintain a list of prequalified manufacturers.

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 HLMR bearing assemblies shall be according to the following:

- (a) Elastomeric Materials. The rubber disc for Pot bearings shall be according to Article 1083.02(a) of the Standard Specifications.
- (b) Polytetrafluoroethylene (PTFE) Material. The PTFE material shall be according to Article 1083.02(b) 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 (A 240M), Type 302 or 304. The sliding surface shall be polished to a bright mirror finish less than 20 micro-in. (510 nm ) root mean square.
- (d) Structural Steel. All structural steel used in the bearing assemblies shall be according to AASHTO M 270, Grade 50 (M 270M Grade 345), unless otherwise specified.
- (e) Threaded studs. The threaded stud, when required, shall conform to the requirements of Article 1083.02(d)(4) of the Standard Specifications.
- (f) Polyether Urethane for Disc bearings shall be according to all of the following requirements:

<b>PHYSICAL PROPERTY</b>	<b>ASTM TEST METHOD</b>	<b>REQUIREMENTS</b>	
Hardness, Type D durometer	D 2240	45 Min	65 Max
Tensile Stress, psi (kPa) At 100% elongation, min	D 412	1500 psi (10,350 kPa)	2300 psi (15,900 kPa)
Tensile Stress, psi (kPa) At 200% elongation, min	D 412	2800 psi (19,300 kPa)	4000 psi (27,600 kPa)
Tensile Strength, psi (kPa), min	D 412	4000 psi (27,600 kPa)	6000 psi (41,400 kPa)
Ultimate Elongation, %, min	D 412	350	220
Compression Set 22 hr. at 158 °F (70 °C), Method B %, max	D 395	40	40

The physical properties for a durometer hardness between the minimum and maximum values shown above shall be determined by straight line interpolation.

Design. The fabricator shall design the HLMR bearings according to the appropriate AASHTO Design Specifications noted on the bridge plans.

Fabrication. 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.

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 PTFE sheet bonded and recessed to the top surface of the piston or disc. 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 PTFE sheet and stainless steel. Guiding off of the fixed base, or any extension of the base, 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, PTFE sheet and neoprene shall be protected from abrasion and paint.

PTFE 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 PTFE 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 for pot bearings 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 HLMR 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.

Performance Testing. The following performance tests are required. All tests shall be performed by the manufacturer prior to shipment. Where lot testing is permitted, a lot size shall be the number of bearings per type on the project but not to exceed 25 bearings per type.

Dimension Check. Each bearing shall be checked dimensionally to verify all bearing components are within tolerances. Failure to satisfy any dimensional tolerance shall be grounds for rejecting the bearing component or the entire bearing assembly.

Clearance Test. This test shall be performed on one bearing per lot. The bearing selected for this test shall be the one with the least amount of clearance based on the dimension check. The bearing assembly shall be loaded to its service limit state rated capacity at its full design rotation but not less than 0.02 radians to verify the required clearances exist.

This test shall be performed twice for each bearing with the rotation oriented longitudinally with the bridge once in each direction. Any visual signs of rubbing or binding shall be grounds for rejection of the lot.

**Proof Load Test.** This test shall be performed on one bearing per lot. The bearing assembly shall be load tested to 150 percent of the service limit state rated capacity at a rotation of 0.02 radians. The load shall be maintained for 5 minutes, removed then reapplied for 5 minutes. If the load drops below the required value during either application, the test shall be restarted from the beginning. This test shall be performed twice for each bearing with the rotation oriented longitudinally with the bridge once in each direction.

The bearing shall be visually examined both during the test and upon disassembly after the test. Any resultant visual defects include, but are not limited to:

1. Extruded or deformed elastomer, polyether urethane, or PTFE.
2. Insufficient clearances such as evidence of metal to metal contact between the pot wall and the top plate.
3. Damaged components such as cracked steel, damaged seal rings, or damaged limiting rings.
4. Bond failure.

If any of the above items are found it shall be grounds for rejection of the lot.

**Sliding Friction Test.** For expansion bearings, this test shall be performed on one bearing per lot. The sliding surfaces shall be thoroughly cleaned with a degreasing solvent. No lubrication other than that specified for the bearing shall be used. The bearing shall be loaded to its service limit state rated capacity for 1 hour prior to and throughout the duration of the sliding test. At least 12 cycles of plus and minus sliding with an amplitude equaling the smaller of the design displacement and 1 inch (25 mm) shall then be applied. The average sliding speed shall be between 0.1 inch and 1.0 inches (2.5 mm and 25 mm) per minute. The sliding friction coefficient shall be computed for each direction of each cycle and its mean and standard deviation shall be computed for the sixth through twelfth cycles.

The friction coefficient for the first movement and the mean plus two standard deviations for the sixth through twelfth cycles shall not exceed the design value used. In addition, the mean value for the sixth through twelfth cycles shall not exceed 2/3 of the design value used. Failure of either of these shall result in rejection of the lot.

The bearing shall also be visually examined both during and after the testing, any resultant defects, such as bond failure, physical destruction, or cold flow of the PTFE shall also be cause for rejection of the lot.



The Contractor shall furnish to the Department a notarized certification from the bearing manufacturer stating the HLMR bearings have been performance tested as specified. The Contractor shall also furnish to the Engineer of Tests at the Bureau of Materials and Physical Research (126 East Ash Springfield, IL 62704) a purchase order prior to fabrication. The purchase order shall contain, as a minimum, the quantity and size of each type of bearing furnished. The Department reserves the right to perform any of the specified tests on one or more of the furnished bearings. If the tested bearing shows failure it shall be replaced and the remaining bearings shall be similarly tested for acceptance at the Contractor's expense.

When directed by the Engineer, the manufacturer shall furnish an additional bearing assembly and/or random samples of component materials used in the bearings, for testing by the Department, according to Article 1083.04 of the Standard Specifications.

Installation. The HLMR bearings shall be erected according to Article 521.05 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 HIGH LOAD MULTI-ROTATIONAL BEARINGS, FIXED; HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION; or HIGH LOAD MULTI-ROTATIONAL BEARINGS, NON-GUIDED EXPANSION of the load rating specified.

When the fabrication and erection of HLMR bearings is accomplished under separate contracts, the applicable requirements of Article 505.09 shall apply.

Fabricated HLMR 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 HIGH LOAD MULTI-ROTATIONAL BEARINGS, FIXED, FURNISHING HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION or FURNISHING HIGH LOAD MULTI-ROTATIONAL BEARINGS, NON-GUIDED EXPANSION of the load rating specified.

Storage and care of fabricated HLMR 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 HIGH LOAD MULTI-ROTATIONAL 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.

HLMR 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 HIGH LOAD MULTI-ROTATIONAL BEARINGS, FIXED, ERECTING HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION or ERECTING HIGH LOAD MULTI-ROTATIONAL BEARINGS, NON-GUIDED EXPANSION of the load rating specified.

## **MODULAR EXPANSION JOINT**

Effective: May 19, 1994

Revised: December 29, 2014

Description. This work shall consist of furnishing and installing a modular expansion joint(s) as shown on the plans, and according to applicable portions of Section 520 of the Standard Specifications.

General. The expansion joint device shall be capable of handling the specified longitudinal movement. In addition, when specified, the joint shall also be capable of handling the differential non-parallel longitudinal movement. The expansion joint device shall effectively seal the joint opening in the deck surface and barrier curbs against the entrance of water and foreign materials. There shall be no appreciable change in the deck surface plane with the expansion and contraction movements of the bridge.

The device shall consist of a shop-fabricated modular assembly of transverse neoprene seals, edge and separation beams, bearing on support bars spanning the joint opening. The assembly shall maintain equal distances between intermediate support rails, at any cross section, for the entire length of the joint. The assembly shall be stable under all conditions of expansion and contraction, using a system of longitudinal control springs and upper and lower support beam bearings and springs.

At sidewalks, concrete median barriers and concrete parapet joints, a sliding steel plate shall be fabricated and installed according to the plans. Painting or galvanizing of sliding steel plates shall be as specified on the plans.

Suppliers: The Department maintains a pre-qualified list of proprietary structural systems allowed for modular expansion joints. This list can be found on the Departments web site under Prequalified Structural Systems. The Contractor's options are limited to those systems pre-qualified by the Department. These systems have been reviewed for structural feasibility and adequacy only. Presence on this list shall in no case relieve the Contractor of the site specific design or QC/QA requirements stated herein.

The manufacturer shall provide evidence of current certification by AISC according to Article 106.08(d) of the Standard Specifications.

Submittals: Shop drawings and a copy of the calculations and support documents shall be submitted to the Engineer for approval according to Article 105.04 of the Standard Specifications. Submittals will be required for each modular expansion joint device specified. In addition the Contractor shall provide the Department with a certification of compliance by the manufacturer listing all materials in the system. The certification shall attest that the system conforms to the design and material requirements and be supported by a copy of the successful results of the fatigue tests performed on the system as herein specified. Submittals with insufficient test data and supporting certifications will be rejected.

The shop drawings shall include tables showing the total anticipated movements for each joint and the required setting width of the joint assemblies at various temperatures.

Design Requirements: The maximum vertical, transverse and horizontal rotations and displacements shall be defined and included in the design.

The expansion joint device(s) shall be designed, detailed and successfully tested, according to Section 14 of the AASHTO LRFD Bridge Design Specifications.

Top, bottom and sides of support bars shall be restrained to prevent uplift, transmit bearing loads, and maintain the lateral position of the bars.

The total movement of each individual sealing element shall not exceed 3 in. (75 mm).

Materials:

- (a) Metals. Structural Steel. All structural steel shall be according to AASHTO M 270, Grade 50 (M 270M Grade 345), unless otherwise specified.

Stainless steel sheets for the sliding surfaces of the support bars shall conform to the requirements of ASTM A240 (A240M) type 302 or 304.

The use of aluminum components in the modular joint will not be allowed.

- (b) Preformed Elastomeric Seals. The elastomeric sealing element shall be according to ASTM D5973.

Lubricant/Adhesive for installing the preformed elastomeric elements in place shall be a one-part, moisture-curing, polyurethane and hydrocarbon solvent mixture as recommended by the manufacturer and containing not less than 65 percent solids.

- (c) Support Bar Bearings. Support bar bearings shall be fabricated from elastomeric pads with polytetrafluorethylene (PTFE) surfacing or from polyurethane compound with PTFE sliding surfaces. The elastomeric and PTFE materials shall meet the requirements of Section 1083 of the Standard Specifications.

- (d) Control Springs. Suitable elastomeric type springs which work longitudinally shall be used to maintain the equidistant spacing between transverse edge and separation beams when measured at any given cross section through the joint.

- (e) Support Bars. Support bars shall incorporate stainless steel sliding surfaces to permit joint movement.

## Construction Requirements

General. Installation of expansion devices shall be according to the plans and shop drawings.

The fabricator of the modular joint assembly shall be AISC certified according to Article 106.08 for Bridge and Highway Metal Component Manufacturers. In lieu of AISC certification, the Contractor may have all welding on main members (support bars and separation beams) observed and inspected by independent (third party) personnel at the Contractor's expense. Welding shall then be observed by a Certified Welding Inspector (CWI) in addition to the manufacturer's own welding inspection. Third party Non Destructive Examination (NDE) shall be performed by inspector(s), certified as level II in applicable methods, and all complete penetration beam-to-bar welds and butt joints in beams shall be UT inspected and 10 percent of fillets and partial pen welds shall be MT inspected.

The manufacturer of the expansion device shall provide a qualified technical service representative to supervise installation. Modular expansion joint devices shall be factory prefabricated assemblies, preset by the manufacturer prior to shipment with provisions for field adjustment for the ambient temperature at the time of installation.

Unless otherwise shown on the plans, the neoprene seals shall be continuous without any field splices. Installation of the joint seals shall be performed by a trained representative of the Manufacturer.

All steel surfaces of the prefabricated assembly shall be shop painted with the primer specified for structural steel, except areas in direct contact with the seals, galvanized items and stainless steel surfaces.

The metal surfaces in direct contact with the neoprene seals shall be blast cleaned to permit a high strength bond of the lubricant/adhesive between the neoprene seal and mating metal surfaces.

The Contractor shall anticipate and make all necessary adjustments to existing or plan-specified reinforcement bars, subject to the approval of the Engineer, in order to prevent interferences with placement of the selected joint in the structure. Any adjustments to reinforcement bars interfering with the joint installation shall be the responsibility of the Contractor and preapproved by the Engineer prior to installation of the joint. Cutting of reinforcement shall be minimized, and any bars that are cut shall be replaced in-kind at no additional cost.

The prefabricated joint assembly shall be properly positioned and attached to the structure according to the manufacturer's approved shop drawings. The attachment shall be sufficiently rigid to prevent non-thermal rotation, distortion, or misalignment of the joint system relative to the deck prior to casting the concrete. The joints shall be adjusted to the proper opening based on the ambient temperature at the time of installation and then all restraints preventing thermal movement shall be immediately released and/or removed. The joint assembly units shall be straight, parallel and in proper vertical alignment or reworked until proper adjustment is obtained prior to casting of the concrete around the joint.

After the joint system is installed, the joint area shall be flooded with water and inspected, from below for leakage. If leakage is observed, the joint system shall be repaired, at the expense of the Contractor, as recommended by the manufacturer and approved by the Engineer.

Method of Measurement. This work will be measured for payment in place, in feet (meters), along the centerline of the joint from face to face of the parapets or curbs. All sliding plate assemblies at the sidewalks, parapets and median barriers will not be measured for payment. The size will be defined as the specified longitudinal movement rounded up to the nearest 3 inch (75 mm) increment.

Basis of Payment: When only a longitudinal movement is specified, this work will be paid for at the contract unit price per foot (meter) for the MODULAR EXPANSION JOINT, of the size specified. When a differential non parallel movement is also specified, this work will be paid for at the contract unit price per foot (meter) for the MODULAR EXPANSION JOINT-SWIVEL, of the size specified.

All materials, equipment and labor required to fabricate, paint and install the sliding plate assemblies at the sidewalks, parapets and median barriers will not be paid for separately but shall be included in the price for the expansion joint specified.

When the fabrication and erection of modular expansion joint is accomplished under separate contracts, the applicable requirements of Article 505.09 shall apply, except the furnishing pay items shall include storage and protection of fabricated materials up to 75 days after the completion dates.

Fabricated modular expansion joints and other materials complying with the requirements of this item, furnished and accepted, will be paid for at the contract unit price per foot (meter) for FURNISHING MODULAR EXPANSION JOINT or FURNISHING MODULAR EXPANSION JOINT – SWIVEL of the size specified.

Storage and care of fabricated joints 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 MODULAR EXPANSION JOINTS 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.

Modular expansion joints and other materials erected according to the requirements of the specifications, and accepted, will be paid for at the contract unit price per foot (meter) for ERECTING MODULAR EXPANSION JOINT or ERECTING MODULAR EXPANSION JOINT - SWIVEL of the size specified.

## **DRILLED SOLDIER PILE RETAINING WALL**

Effective: September 20, 2001

Revised: January 3, 2014

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), and the furnishing and installation of lagging. All work shall be according to the details shown on the plans and as directed by the Engineer.

The remainder of the retaining wall components as shown on the plans, such as concrete facing, shear studs, reinforcement bars, tie backs, hand rails, and various drainage items etc., are not included in this Special Provision but are paid for as specified elsewhere in this Contract.

Materials. The materials used for the soldier piles and lagging shall satisfy the following requirements:

- (a) The structural steel components for the soldier piles shall conform to the requirements of AASHTO M270, Grade 36 (M270M Grade 250), unless otherwise designated on the plans.
- (b) The soldier pile encasement concrete shall be Class DS according to Article 516.02.
- (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 Section 1019.
- (d) Temporary casing shall be produced by electric seam, butt, or spiral welding to produce a smooth wall surface, fabricated from steel satisfying ASTM A252 Grade 2. The minimum wall thickness shall be as required to resist the anticipated installation and dewatering stresses, as determined by the Contractor, but in no case less than 1/4 in. (6 mm).
- (e) Drilling slurry shall consist of a polymer or mineral base material. Mineral slurry shall have both a mineral grain size that will remain in suspension with sufficient viscosity and gel characteristics to transport excavated material to a suitable screening system. The percentage and specific gravity of the material used to make the suspension shall be sufficient to maintain the stability of the excavation and to allow proper concrete placement. For polymer slurry, the calcium hardness of the mixing water shall not exceed 100 mg/L.

- (f) Timber Lagging. The minimum tabulated unit stress in bending ( $F_b$ ), used for the design of the timber lagging, shall be 1000 psi (6.9 MPa) unless otherwise specified on the plans. When treated timber lagging is specified on the plans, the method of treatment shall be according to Article 1007.12. All timber shall meet the inspection requirements of Article 1007.01.
- (g) Precast Concrete Lagging. Precast concrete lagging shall be according to Section 504 of the Standard Specifications, except as modified herein. Unless specified otherwise, precast concrete lagging surfaces exposed to view in the completed wall shall be finished according to Article 503.15. When specified on the plans, the exposed surface shall be finished with a concrete form liner approved by the Engineer. The back face of the panel shall be roughly screeded to eliminate open pockets of aggregate and surface distortions in excess of 1/4 in. Reinforcement for precast concrete lagging shall be epoxy coated. Lifting inserts shall have a total minimum design capacity based on yield strength of 4 times the dead load calculated for the width of lagging used. Fabric bearing pads, when specified on the plans, shall meet the requirements of Section 1082. Threaded inserts, or other accessories, cast into the precast concrete lagging shall be galvanized according to AASHTO M111 or M232 as applicable.

Equipment. The drilling equipment shall have adequate capacity, including power, torque and down thrust, to create a shaft excavation of the maximum diameter specified to a depth of 20 percent beyond the depths shown on the plans. Concrete equipment shall be according to Article 1020.03.

Construction Requirements. The shaft excavation for each soldier pile shall extend to the tip elevation indicated on the plans for soldier piles terminating in soil or to the required embedment in rock when rock is indicated on the contract plans. The Contractor shall satisfy the following requirements:

- (a) Drilling Methods. The soldier pile installation shall be according to Articles 516.06(a),(b), or(c).

No shaft excavation shall be made adjacent to a soldier pile with encasement concrete that has a compressive strength less than 1500 psi (10.35 MPa), nor adjacent to secant lagging until the CLSM has reach sufficient strength to maintain 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 top of rock will be considered as the point where rock, defined as bedded deposits and conglomerate deposits exhibiting the physical characteristics and difficulty of rock removal as determined by the Engineer, is encountered which cannot be drilled with earth augers and/or underreaming tools configured to be effective in the soils indicated in the contract documents, and requires the use of special rock augers, core barrels, air tools, blasting, or other methods of hand excavation.
- (e) Design Modifications. If the top of rock elevation encountered is below that estimated on the plans, such that the soldier pile length above rock is increased by more than 10 percent, the Engineer shall be contacted to determine if any soldier pile design changes are required. In addition, if the type of soil or rock encountered is not similar to that shown in the subsurface exploration data, the Engineer shall be contacted to determine if revisions are necessary.
- (f) Soldier Pile Fabrication and Placement. The soldier pile is defined as the structural steel section(s) shown on the plans as well as any connecting plates used to join multiple sections. The types of soldier piles shall be defined as HP, W Sections, or Built-Up Sections. Cleaning and painting of all steel components, when specified, shall be as shown on the plans and accomplished according to Section 506. This work will not be paid for separately, but shall be considered included in the cost of Furnishing Soldier Piles of the type specified.

The soldier pile shall be shop fabricated such that no field welding is required. The Contractor shall attach suitable bracing or support to maintain the position of the soldier pile within the shaft excavation such that the final location will satisfy the Construction Tolerances portion of this Special Provision. The bracing or supports shall remain in place until the concrete for encasement has reached a minimum compressive strength of 1500 psi (10.35 MPa).

When embedment in rock is indicated on the plans, modification to the length of a soldier pile may be required to satisfy the required embedment. The modification shall be made to the top of the soldier pile unless otherwise approved by the Engineer. When the top of rock encountered is above the estimated elevation indicated on the plans, the soldier piles shall be cut to the required length. If the top of rock encountered is below that estimated on the plans, the Contractor shall either furnish longer soldier piles or splice on additional length of soldier pile per Article 512.05(a) to satisfy the required embedment in rock. In order to avoid delays, the Contractor may have additional soldier pile sections fabricated as necessary to make the required adjustments. Additional soldier pile quantities, above those shown on the plans, shall not be furnished without prior written approval by the Engineer.



- (g) Concrete Placement. Concrete work shall be performed according to Article 516.12 and as specified herein.

The soldier pile encasement concrete pour shall be made in a continuous manner from the bottom of the shaft excavation to the elevation indicated on the plans. Concrete shall be placed as soon as possible after the excavation is completed and the soldier pile is secured in the proper position. Uneven levels of concrete placed in front, behind, and on the sides of the soldier pile shall be minimized to avoid soldier pile movement, and to ensure complete encasement.

Following the soldier pile encasement concrete pour, the remaining portion of the shaft excavation shall be backfilled with CLSM according to Section 593. CLSM Secant lagging placement shall be placed as soon as practical after the shaft excavation is cleared.

- (h) Construction Tolerances. The soldier piles shall be installed within the excavation to satisfy the following tolerances:

(1) The center of the soldier pile shall be within 2 in. (50 mm) of plan location in any direction at the top of the pile.

(2) The out of vertical plumbness of the soldier pile shall not exceed 1/8 in./ft. (10 mm/m)

(3) The top of the soldier pile shall be within  $\pm 2$  in. ( $\pm 50$  mm) of the plan elevation.

- (i) Timber Lagging. Timber lagging, when required by the plans, installed below the original ground surface, shall be placed from the top down as the excavation proceeds. Lagging shown above grade shall be installed and backfilled against prior to installing any permanent facing to minimize post construction deflections. Over-excavation required to place the timber lagging behind the flanges of the soldier piles shall be the minimum necessary to install the lagging. Any voids produced behind the lagging shall be filled with porous granular embankment at the Contractors expense. When the plans require the Contractor to design the timber lagging, the design shall be based on established practices published in FHWA or AASHTO documents considering lateral earth pressure, construction loading, traffic surcharges and the lagging span length(s). The nominal thickness of the lagging selected shall not be less than 3 in. (75 mm) and shall satisfy the minimum tabulated unit stress in bending ( $F_b$ ) 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 according to Article 1007.03.

- (j) Precast Concrete Lagging. Precast concrete 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 precast lagging behind the flanges of the soldier piles shall be the minimum necessary to install the lagging. Any voids produced behind the lagging shall be filled with porous granular embankment at the Contractor's expense. When the plans require the Contractor to design the precast concrete 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 Contractor shall be responsible for the successful performance of the lagging system until the permanent concrete facing, when specified on the plans, is installed.

The precast concrete lagging shall be reinforced with a minimum of 0.31 square inches/foot (655 Sq. mm/meter) of horizontal and vertical reinforcement per unit width of lagging with a minimum thickness of 3 in. (75 mm).

When precast concrete lagging is exposed to view in the completed wall, shop drawings for the lagging shall be submitted according to Article 1042.03(b) and Article 105.04 of the Standard Specifications. The supplier selected by the Contractor shall submit complete design calculations and shop drawings, prepared and sealed by an Illinois Licensed Structural Engineer, for approval by the Engineer.

- (k) Structure Excavation. When structure excavation is necessary to place a concrete facing, it shall be made and paid for according to Section 502 except that the horizontal limits for structure excavation shall be from the face of the soldier pile to a vertical plane 2 ft. (600 mm) from the finished face of the wall. The depth shall be from the top of the original ground surface to the bottom of the concrete facing. The additional excavation necessary to place the lagging whether through soil or CLSM shall be included in this work.
- (l) 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 lagging with the pervious (fabric) side of the drain installed to face the lagging. 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 lagging is installed. The wall drain shall be placed in sections and spliced, or kept on a continuous roll, so that as each piece of lagging is placed, the drain can be properly located as the excavation proceeds.

Method of Measurement. The furnishing of soldier piles will be measured for payment in feet (meters) along the centerline of the soldier pile for each of the types specified. The length shall be determined as the difference between the plan top of soldier pile and the final as built shaft excavation bottom.

The drilling and setting of soldier piles in soil and rock, will be measured for payment and the volumes computed in cubic feet (cubic meters) for the shaft excavation required to set the soldier piles according to the plans and specifications, and accepted by the Engineer. These volumes shall be the theoretical volumes computed using the diameter(s) of the shaft(s) shown in the plans and the depth of the excavation in soil and/or rock as appropriate. The depth in soil will be defined as the difference in elevation between the ground surface at the time of concrete placement and the bottom of the shaft excavation or the top of rock (when present), whichever is encountered first. The depth in rock will be defined as the difference in elevation between the measured top of rock and the bottom of the shaft excavation.

Drilling and placing CLSM secant lagging shall be measured for payment in cubic feet (cubic meters) of the shaft excavation required to install the secant lagging as shown in the plans. This volume shall be the theoretical volume computed using the diameter(s) shown on the plans and the difference in elevation between the as built shaft excavation bottom and the ground surface at the time of the CLSM placement.

Timber and precast concrete lagging shall be measured for payment in square feet (square meters) of 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 lagging, for each bay of lagging spanning between the soldier piles.

Basis of Payment. The furnishing of soldier piles will be paid for at the contract unit price per foot (meter) for FURNISHING SOLDIER PILES, of the type specified, for the total number of feet (meters) furnished to the job site. The cost of any field splices required due to changes in top of rock elevation shall be paid for according to Article 109.04.

The drilling and setting of soldier piles will be paid for at the contract unit price per cubic foot (cubic meter) for DRILLING AND SETTING SOLDIER PILES (IN SOIL) and DRILLING AND SETTING SOLDIER PILES (IN ROCK). The required shaft excavation, soldier pile encasement concrete and any CLSM backfill required around each soldier pile will not be paid for separately but shall be included in this item.

Timber lagging will be paid for at the contract unit price per square foot (square meter) for UNTREATED TIMBER LAGGING, or TREATED TIMBER LAGGING as detailed on the plans. Precast concrete lagging will be paid for at the contract unit price per square foot (square meter) for PRECAST CONCRETE LAGGING as detailed on the plans.

The secant lagging will be paid for at the contract unit price per cubic foot (cubic meter) for SECANT LAGGING. The required shaft excavation and CLSM backfill required to fill that excavation shall be included in this item.

Obstruction mitigation shall be paid for according to Article 109.04.

No additional compensation, other than noted above, will be allowed for removing and disposing of excavated materials, for furnishing and placing concrete, CLSM, bracing, lining, temporary casings placed and removed or left in place, or for any excavation made or concrete placed outside of the plan diameter(s) of the shaft(s) specified.

## **TEMPORARY SOIL RETENTION SYSTEM**

Effective: December 30, 2002

Revised : May 11, 2009

Description. This work shall consist of designing, furnishing, installing, adjusting for stage construction when required and subsequent removal of the temporary soil retention system according to the dimensions and details shown on the plans and in the approved design submittal.

General. The temporary soil retention system shall be designed by the Contractor as a minimum, to retain the exposed surface area specified in the plans or as directed by the Engineer.

The design calculations and details for the temporary soil retention system proposed by the Contractor shall be submitted to the Engineer for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer. This approval will not relieve the Contractor of responsibility for the safety of the excavation. Approval shall be contingent upon acceptance by all involved utilities and/or railroads.

Construction. The Contractor shall verify locations of all underground utilities before installing any of the soil retention system components or commencing any excavation. Any disturbance or damage to existing structures, utilities or other property, caused by the Contractor's operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department. The soil retention system shall be installed according to the Contractor's approved design, or as directed by the Engineer, prior to commencing any related excavation. If unable to install the temporary soil retention system as specified in the approved design, the Contractor shall have the adequacy of the design re-evaluated. Any reevaluation shall be submitted to the Engineer for approval prior to commencing the excavation adjacent to the area in question. The Contractor shall not excavate below the maximum excavation line shown in the approved design without the prior permission of the Engineer. The temporary soil retention system shall remain in place until the Engineer determines it is no longer required.

The temporary soil retention system shall be removed and disposed of by the Contractor when directed by the Engineer. When allowed, the Contractor may elect to cut off a portion of the temporary soil retention system leaving the remainder in place. The remaining temporary soil retention system shall be removed to a depth which will not interfere with the new construction, and as a minimum, to a depth of 12 in. (300 mm) below the finished grade, or as directed by the Engineer. Removed system components shall become the property of the Contractor.

When an obstruction is encountered, the Contractor shall notify the Engineer and upon concurrence of the Engineer, the Contractor shall begin working to break up, push aside, or remove the obstruction. An obstruction shall be defined as any object (such as but not limited to, boulders, logs, old foundations etc.) where its presence was not obvious or specifically noted on the plans prior to bidding, that cannot be driven or installed through or around, with normal driving or installation procedures, but requires additional excavation or other procedures to remove or miss the obstruction.

Method of Measurement. The temporary soil retention system furnished and installed according to the Contractor's approved design or as directed by the Engineer will be measured for payment in place, in square feet (square meters). The area measured shall be the vertical exposed surface area envelope of the excavation supported by temporary soil retention system. Portions of the temporary soil retention system left in place for reuse in later stages of construction shall only be measured for payment once.

Any temporary soil retention system installed beyond those dimensions shown on the contract plans or the approved contractor's design without the written permission of the Engineer, shall not be measured for payment but shall be done at the contractor's own expense.

Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for TEMPORARY SOIL RETENTION SYSTEM.

Payment for any excavation, related solely to the installation and removal of the temporary soil retention system and/or its components, shall not be paid for separately but shall be included in the unit bid price for TEMPORARY SOIL RETENTION SYSTEM. Other excavation, performed in conjunction with this work, will not be included in this item but shall be paid for as specified elsewhere in this contract.

Obstruction mitigation shall be paid for according to Article 109.04 of the Standard Specifications.

## **PIPE UNDERDRAINS FOR STRUCTURES**

Effective: May 17, 2000

Revised: January 22, 2010

Description. This work shall consist of furnishing and installing a pipe underdrain system as shown on the plans, as specified herein, and as directed by the Engineer.

Materials. Materials shall meet the requirements as set forth below:

The perforated pipe underdrain shall be according to Article 601.02 of the Standard Specifications. Outlet pipes or pipes connecting to a separate storm sewer system shall not be perforated.

The drainage aggregate shall be a combination of one or more of the following gradations, FA1, FA2, CA5, CA7, CA8, CA11, or CA13 thru 16, according to Sections 1003 and 1004 of the Standard Specifications.

The fabric surrounding the drainage aggregate shall be Geotechnical Fabric for French Drains according to Article 1080.05 of the Standard Specifications.

Construction Requirements. All work shall be according to the applicable requirements of Section 601 of the Standard Specifications except as modified below.

The pipe underdrains shall consist of a perforated pipe drain situated at the bottom of an area of drainage aggregate wrapped completely in geotechnical fabric and shall be installed to the lines and gradients as shown on the plans.

Method of Measurement. Pipe Underdrains for Structures shall be measured for payment in feet (meters), in place. Measurement shall be along the centerline of the pipe underdrains. All connectors, outlet pipes, elbows, and all other miscellaneous items shall be included in the measurement. Concrete headwalls shall be included in the cost of Pipe Underdrains for Structures, but shall not be included in the measurement for payment.

Basis of Payment. This work will be paid for at the contract unit price per foot (meter) for PIPE UNDERDRAINS FOR STRUCTURES of the diameter specified. Furnishing and installation of the drainage aggregate, geotechnical fabric, forming holes in structural elements and any excavation required, will not be paid for separately, but shall be included in the cost of the pipe underdrains for structures.

#### **SLIPFORM PARAPET**

Effective: June 1, 2007

Revised: December 29, 2014

The following shall be added to the end of Article 503.16(b) of the Standard Specifications.

- (3) Slipforming parapets. Unless otherwise prohibited herein or on the plans, at the option of the Contractor, concrete parapets on bridge decks may be constructed by slipforming in lieu of the conventional forming methods. Slipforming will not be permitted for curved parapets on a radius of 1500ft (457 m) or less.

The slipform machine shall be self-propelled and have automatic horizontal and vertical grade control. For 34 inch (864 mm) tall parapets the machine shall be equipped with a minimum of four (4) vibrators. For 42 inch (1.067 m) tall parapets the machine shall be equipped with a minimum of five (5) vibrators. The equipment shall be approved by the Engineer before use.

If the Contractor wishes to use the slipform parapet option for 42 inch (1.067 m) tall parapets he/she shall construct a test section in a temporary location to demonstrate his/her ability to construct the parapets without defect. The test section shall be constructed under similar anticipated weather conditions, using the same means and methods, equipment, operator, concrete plant, concrete mix design, and slump as proposed for the permanent slipform parapets.

The test section shall be at least 50 feet (15 meters) in length and shall be of the same cross section shown on the plans. The contractor shall place all of the reinforcement embedded in the parapet shown on the plans. Upon completion of the test section, the Contractor shall saw cut the test section into 2 foot (600 mm) segments and separate the segments for inspection by the Engineer.

The test section shall demonstrate to the satisfaction of the Engineer that the Contractor can slipform the parapets on this project without defects. The acceptance of the test section does not constitute acceptance of the slipform parapets in place.

The concrete mix design 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 in a proportion approved by the Engineer.

The slipform machine speed shall not exceed 3 ft (0.9 m) per minute. Any section of parapet placed with the slipform machine moving in excess of the maximum allowed speed will be rejected. Any time the speed of the machine drops below 0.5 ft (150 mm) per minute will be considered a stoppage of the slipforming operation, portions of parapet placed with three or more intermittent stoppages within any 15 ft (4.6 m) length will be rejected. The contractor shall schedule concrete delivery to maintain a uniform delivery rate of concrete into the slipform machine. If delivery of concrete from the truck into the slipforming machine is interrupted by more than 15 minutes, the portion of the wall within the limits of the slipform machine will be rejected. Any portion of the parapet where the slipforming operation is interrupted or stopped within the 15 minute window may be subject to coring to verify acceptance.

If the Contractor elects to slipform, the parapet cross-sectional area and reinforcement bar clearances shall be revised according to the details for the Concrete Parapet Slipforming Option. In addition, if embedded conduit(s) are detailed, then the contractor shall utilize the alternate reinforcement as detailed.

The use of cast-in-place anchorage devices for attaching appurtenances and/or railings to the parapets will not be allowed in conjunction with slipforming of parapets. Alternate means for making these attachments shall be as detailed on the plans or as approved by the Engineer.

All reinforcement bar intersections within the parapet cross section shall be 100 percent tied utilizing saddle ties, wrap and saddle ties or figure eight ties to maintain rigidity during concrete placement. At pre-planned sawcut joints in the parapet, Glass Fiber Reinforced Polymer (GFRP) reinforcement shall be used to maintain the rigidity of the reinforcement cage across the proposed joints as detailed for the Concrete Parapet Slipforming Option.

Glass Fiber Reinforced Polymer (GFRP) reinforcement shall be subject to approval by the Engineer. Other non-ferrous reinforcement may be proposed for use but shall be subject to approval by the Engineer. GFRP reinforcement shall be tied the same as stated in the previous paragraph.

The Contractor may propose supplemental reinforcement for stiffening to prevent movement of the reinforcement cage and/or for conduit support subject to approval by the Engineer.

Clearances for these bars shall be the same as shown for the required bars and these bars shall be epoxy coated. If the additional reinforcement is used, it shall be at no additional cost to the Department.

For projects with plan details specifying parapet joints spaced greater than 20 ft (6 m) apart, additional sawcut joints, spaced between 10 ft (3 m) and 20 ft (6 m), shall be placed as directed by the Engineer. The horizontal reinforcement extending through the proposed joints shall be precut to provide a minimum of 4 in. (100 mm) gap, centered over the joint, between rebar ends. The ends of the reinforcement shall be repaired according to Article 508.05.

After the slipform machine has been set to proper grade and prior to concrete placement, the clearance between the slipform machine inside faces and reinforcement bars shall be checked during a dry run by the Contractor in the presence of the Engineer. The dry run shall not begin until the entire reinforcing cage has been tied and the Engineer has verified and approved the placement and tying of the reinforcing bars. Any reinforcement bars found to be out of place by more than ½ in. (13 mm), or any dimensions between bars differing from the plans by more than ½ in. (13 mm) shall be re-tied to the plan dimensions.

During the dry run and in the presence of the Engineer, the Contractor shall check the clearance of the reinforcement bars from the inside faces of the slipform mold. In all locations, the Contractor shall ensure the reinforcement bars have the minimum cover distance shown on the plans. This dry run check shall be made for the full distance that is anticipated to be placed in the subsequent pour. Reinforcement bars found to have less than the minimum clearance shall be adjusted and the dry run will be performed again, at least in any locations that have been readjusted.

For parapets adjacent to the watertable, the contractor shall, for the duration of the construction and curing of the parapet, provide and maintain an inspection platform along the back face of the parapet. The inspection platform shall be rigidly attached to the bridge superstructure and be of such design to allow ready movement of inspection personnel along the entire length of the bridge.

The aluminum cracker plates as detailed in the plans shall be securely tied in place and shall be coated or otherwise treated to minimize their potential reaction with wet concrete. In lieu of chamfer strips at horizontal and vertical edges, radii may be used. Prior to slipforming, the Contractor shall verify proper operation of the vibrators using a mechanical measuring device subject to approval by the Engineer.



The top portion of the joint shall be sawcut as shown in the details for the Concrete Parapet Slipforming Option. Sawing of the joints shall commence as soon as the concrete has hardened sufficiently to permit sawing without excessive raveling. All joints shall be sawed to the full thickness before uncontrolled shrinkage cracking takes place but no later than 8 hours after concrete placement. The sawcut shall be approximately 3/8 in. (10 mm) wide and shall be performed with a power circular concrete saw. The joints shall be sealed with an approved polyurethane sealant, conforming to ASTM C 920, Type S, Grade NS, Class 25, Use T, to a minimum depth of 1/2 in. (12 mm), with surface preparation and installation according to the manufacturer's written instructions. Cork, hemp or other compressible material may be used as a backer. The sawcut will not require chamfered edges.

Ends of the parapet shall be formed and the forms securely braced. When slipforming of parapets with cross sectional discontinuities such as light standards, junction boxes or other embedded appurtenances except for name plates, is allowed, the parapet shall be formed for a minimum distance of 4 ft (1.2 m) on each side of the discontinuity.

For acceptance and rejection purposes a parapet section shall be defined as the length of parapet between adjacent vertical parapet joints.

The maximum variance of actual to proposed longitudinal alignment shall not exceed  $\pm 3/4$  in. (20 mm) with no more than 1/4 inch in 10 ft (6 mm in 3 m). Notwithstanding this tolerance, abrupt variance in actual alignment of 1/2 inch in 10 ft (13 mm in 3 m) will be cause for rejection of the parapet section.

In addition, all surfaces shall be checked with a 10 ft (3 m) straight edge furnished and used by the Contractor as the concrete is extruded from the slipform mold. Continued variations in the barrier surface exceeding 1/4 inch in 10 ft (6 mm in 3 m) will not be permitted and remedial action shall immediately be taken to correct the problem.

The use of equipment or methods which result in dimensions outside the tolerance limits shall be discontinued. Parapet sections having dimensions outside the tolerance limits will be rejected.

Any visible indication that less than specified cover of concrete over the reinforcing bars has been obtained, or of any cracking, tearing or honeycombing of the plastic concrete, or any location showing diagonal or horizontal cracking will be cause for rejection of the parapet section in which they are found.

The vertical surfaces at the base of the barrier within 3 in. (75 mm) of the deck surface shall be trowelled true after passage of the slipform machine. Hand finishing of minor sporadic surface defects may be allowed at the discretion of the Engineer. All surfaces of the parapet except the top shall receive a final vertical broom finish. Any deformations or bulges remaining after the initial set shall be removed by grinding after the concrete has hardened.

Slipformed parapets shall be cured according to either Article 1020.13(a)(3) or Article 1020.13(a)(5). For either method, the concrete surface shall be covered within 30 minutes after it has been finished. The cotton mats or burlap covering shall be held in place with brackets or other method approved by the Engineer. The Contractor shall have the option to substitute linseed oil emulsion for protective coat and delay the start of wet curing during the period from April 16 through October 31. The linseed oil emulsion shall be applied according to Articles 1020.13 Notes-General 8/ and 1020.13(a)(4). The delay for wet curing shall not exceed 3 hours after application of the linseed oil emulsion.

A maximum of three random 4 in. (100 mm) diameter cores per 100 ft (30 m) of parapet shall be taken as directed by the Engineer, but no less than three random cores shall be taken for each parapet pour. At least 2 cores shall be located to intercept the top horizontal bar. Unless otherwise directed by the Engineer, coring shall be accomplished within 48 hours following each parapet pour. Separate parapets poured on the same date shall be considered separate pours. Random cores will not be measured for payment.

The Engineer will mark additional locations for cores where, in the sole opinion of the Engineer, the quality of the slipformed parapet is suspect.

The Engineer or his representative will be responsible for evaluation the cores. Any cores showing voids of any size adjacent to the reinforcement bars, or showing voids not adjacent to reinforcement bars of 1/4 square inch (160 square millimeters) in area or more, or showing signs of segregation, or showing signs of cracking shall be considered failures and the parapet section from which it was taken will be rejected. Parapets with less than 1 1/2 inches of concrete cover over the reinforcement shall be rejected.

Rejected parapet sections shall be removed and replaced for the full depth cross-section of the parapet except that concrete covers between 1 inch and 1½ inches may be open to remedial action subject to the approval of the Engineer. Such action could entail up to and including removal and replacement.

The minimum length of parapet removed and replaced shall be 3 ft (1 m). Additional cores may be required to determine the longitudinal extent of removal and replacement if it can not be determined and agreed upon by other means (i.e. visual, sounding, non-destructive testing, etc.).

Any parapet section with more than one half of its length rejected or with remaining segments less than 10 ft (3 m) in length shall be removed and replaced in its entirety.

If reinforcement bars are damaged during the removal and replacement, additional removal and replacement shall be done, as necessary, to ensure minimum splice length of replacement bars. Any damage to epoxy coating of bars shall be repaired according to Article 508.05.

All core holes will be filled with a non-shrink grout meeting the requirements of Section 1024.

Basis of Payment. When the contractor, at his/her option, constructs the parapet using slipforming methods, no adjustment in the quantities for Concrete Superstructures and Reinforcement Bars, Epoxy Coated to accommodate this option will be allowed. Compensation under the contract bid items for Concrete Superstructures and Reinforcement Bars, Epoxy Coated shall cover the cost of all work required for the construction of the parapet and any test section(s) required, and for any additional costs of work or materials associated with slipforming methods.

## **COFFERDAMS**

Effective: October 15, 2011

Replace Article 502.06 with the following.

**502.06 Cofferdams.** A Cofferdam shall be defined as a temporary structure, consisting of engineered components, designed to isolate the work area from water to enable construction under dry conditions based on either the Estimated Water Surface Elevation (EWSE) or Cofferdam Design Water Elevation (CDWE) shown on the contract plans as specified below. When cofferdams are not specified in the contract documents and conditions are encountered where the excavation for the structure cannot be kept free of water for prosecuting the work by pumping and/or diverting water, the Contractor, with the written permission of the Engineer, will be permitted to construct a cofferdam.

The Contractor shall submit a cofferdam plan for each cofferdam to the Engineer for approval prior to the start of construction. Cofferdams shall not be installed or removed without the Engineer's approval. Work shall not be performed in flowing water except for the installation and removal of the cofferdam. The cofferdam plan shall address the following:

- (a) Cofferdam (Type 1). The Contractor shall submit a cofferdam plan which addresses the proposed methods of construction and removal; the construction sequence including staging; dewatering methods; erosion and sediment control measures; disposal of excavated material; effluent water control measures; backfilling; and the best management practices to prevent reintroduction of excavated material into the aquatic environment. The design and method of construction shall provide, within the measurement limits specified in Article 502.12, necessary clearance for forms, inspection of exterior of the forms, pumping, and protection of fresh concrete from water. For Type 1 cofferdams, it is anticipated the design will be based on the EWSE shown on the contract plans. The Contractor shall assume all liability, financial or otherwise for a Type 1 cofferdam designed for an elevation lower than the EWSE.
- (b) Cofferdam (Type 2). In addition to the requirements of Article 502.06(a), the Contractor's submittal shall include detailed drawings and design calculations, prepared and sealed by an Illinois Licensed Structural Engineer. For Type 2 cofferdams it is anticipated the design will be based on the CDWE shown on the contract plans. The Contractor shall assume all liability, financial or otherwise for a Type 2 cofferdam designed for an elevation lower than the CDWE.

- (c) Seal Coat. The seal coat concrete, when shown on the plans, is based on design assumptions in order to establish an estimated quantity. When seal coat is indeed utilized, it shall be considered an integral part of the overall cofferdam system and, therefore, its design shall be included in the overall cofferdam design submittal. If a seal coat was not specified but determined to be necessary, it shall be added to the contract by written permission of the Engineer. The seal coat concrete shall be constructed according to Article 503.14. After the excavation within the cofferdam has been completed and the piles have been driven (if applicable), and prior to placing the seal coat, the elevation of the bottom of the proposed seal coat shall be verified by soundings. The equipment and methods used to conduct the soundings shall meet the approval of the Engineer. Any material within the cofferdam above the approved bottom of the seal coat elevation shall be removed.

No component of the cofferdam shall extend into the substructure concrete or remain in place without written permission of the Engineer. Removal shall be according to the previously approved procedure. Unless otherwise approved in writing by the Engineer, all components of the cofferdam shall be removed.

Revise the first paragraph of 502.12(b) to read as follows.

- (b) Measured Quantities. Structure excavation, when specified, will be measured for payment in its original position and the volume computed in cubic yards (cubic meters). Horizontal dimensions will not extend beyond vertical planes 2 ft (600 mm) outside of the edges of footings of bridges, walls, and corrugated steel plate arches. The vertical dimension for structure excavation will be the average depth from the surface of the material to be excavated to the bottom of the footing as shown on the plans or ordered in writing by the Engineer. The volume of any unstable and/or unsuitable material removed within the structure excavation will be measured for payment in cubic yards (cubic meters).

Revise the last paragraph of 502.12(b) to read as follows.

Cofferdam excavation will be measured for payment in cubic yards (cubic meters) in its original position within the cofferdam. Unless otherwise shown on the plans, the horizontal dimensions used in computing the volume will not extend beyond vertical planes 2 ft (600 mm) outside of the edges of the substructure footings or 4 ft (1.2 m) outside of the faces of the substructure stem wall, whichever is greater. The vertical dimensions will be the average depth from the surface of the material to be excavated to the elevation shown on the plans for bottom of the footing, stem wall, or seal coat, or as otherwise determined by the Engineer as the bottom of the excavation.

Revise the first sentence of the sixth paragraph of 502.13 to read as follows.

Cofferdams, when specified, will be paid for at the contract unit price per each for COFFERDAM (TYPE 1) or COFFERDAM (TYPE 2), at the locations specified.

**PERMANENT STEEL SHEET PILING (LRFD)**

Effective: January 31, 2012

Revised: August 17, 2012

Description. This work shall consist of furnishing and installing the permanent sheet piling to the limits and tolerances shown on the plans according to Section 512 of the Standard Specifications.

Material. The sheet piling shall be made of steel and shall be new material. Unless otherwise specified the sheeting shall have a minimum yield strength of 50 ksi (345 MPa) according to ASTM A 572. The sheeting shall be identifiable and free of bends and other structural defects. The Contractor shall furnish a copy of the published sheet pile section properties to the Engineer for verification purposes. The Engineer's approval will be required prior to driving any sheeting. All driven sheeting not approved by the Engineer shall be removed at the Contractor's expense.

The Contractor shall furnish a sheet pile section, to be used for each wall section, with a published section modulus equal to or larger than that specified on the plans.

The selection of the sheet pile section shall not relieve the Contractor of the responsibility to satisfy all details including minimum clearances, cover, reinforcement, shear stud locations, interlocking, and field cutting. Any modifications of the plans to accommodate the Contractor's selection shall be paid for by the Contractor and subject to the approval of the Engineer.

Construction. The Contractor shall verify locations of all underground utilities before driving any sheet piling. Any disturbance or damage to existing structures, utilities or other property, caused by the Contractor's operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department. The Contractor shall be responsible for determining the appropriate equipment necessary to drive the sheeting to the tip elevation(s) specified on the plans or according to the Contractor's approved design. The sheet piling shall be driven, as a minimum, to the tip elevation(s) specified, prior to commencing any related construction. If unable to reach the minimum tip elevation, the adequacy of the sheet piling design will require re-evaluation by the Department prior to allowing construction adjacent to the sheet piling in question.

Obstructions. Obstructions shall be defined as any object (such as but not limited to, boulders, logs, old foundations, etc.) that cannot be driven through with normal driving procedures, but requires special equipment 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 break up, push aside, or remove the obstruction.

Method of Measurement. This work will be measured in place in square feet (square meters). Sheet piling associated with other work in this contract or for permanent sheet piling that is cut off or driven beyond those dimensions shown on the plans will not be measured for payment.

Obstruction mitigation shall be paid for according to Article 109.04.

Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for PERMANENT STEEL SHEET PILING at the location shown on the plans.

**GRANULAR BACKFILL FOR STRUCTURES**

Effective: April 19, 2012

Revised: October 30, 2012

Revise Section 586 of the Standard Specifications to read:

**SECTION 586. GRANULAR BACKFILL FOR STRUCTURES**

**586.01 Description.** This work shall consist of furnishing, transporting and placing granular backfill for abutment structures.

**586.02 Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Fine Aggregate.....	1003.04
(b) Coarse Aggregates .....	1004.05

**CONSTRUCTION REQUIREMENTS**

**586.03 General.** This work shall be done according to Article 502.10 except as modified below. The backfill volume shall be backfilled, with granular material as specified in Article 586.02, to the required elevation as shown in the contract plans. The backfill volume shall be placed in convenient lifts for the full width to be backfilled. Unless otherwise specified in the contract plans, mechanical compaction will not be required. A deposit of gravel or crushed stone placed behind drain holes shall not be required. All drains not covered by geocomposite wall drains or other devices to prevent loss of backfill material shall be covered by sufficient filter fabric material meeting the requirements of Section 1080 and Section 282 with either 6 or 8 oz/sq yd (200 or 270 g/sq m) material allowed, with free edges overlapping the drain hole by at least 12 in. (300 mm) in all directions.

The granular backfill shall be brought to the finished grade as shown in the contract plans. When concrete is to be cast on top of the granular backfill, the Contractor, subject to approval of the Engineer, may prepare the top surface of the fill to receive the concrete as he/she deems necessary for satisfactory placement at no additional cost to the Department.

**586.04 Method of Measurement.** This work will be measured for payment as follows.

- (a) Contract Quantities. The requirements for the use of contract quantities shall conform to Article 202.07(a).
- (b) Measured Quantities. This work will be measured for payment in place and the volume computed in cubic yards (cubic meters). The volume will be determined by the method of average end areas behind the abutment.

**586.05 Basis of Payment.** This work will be paid for at the contract unit price per cubic yard (cubic meter) for GRANULAR BACKFILL FOR STRUCTURES.

## **BRIDGE DECK CONSTRUCTION**

Effective: October 22, 2013

Revised: April 18, 2014

### **Revise the Second Paragraph of Article 503.06(b) to read as follows.**

“When the Contractor uses cantilever forming brackets on exterior beams or girders, additional requirements shall be as follows.”

### **Revise Article 503.06(b)(1) to read as follows.**

- “(1) Bracket Placement. The spacing of brackets shall be per the manufacturer’s published design specifications for the size of the overhang and the construction loads anticipated. The resulting force of the leg brace of the cantilever bracket shall bear on the web within 6 inches (150 mm) of the bottom flange of the beam or girder.”

### **Revise Article 503.06(b)(2) to read as follows.**

- “(2) Beam Ties. The top flange of exterior steel beams or girders supporting the cantilever forming brackets shall be tied to the bottom flange of the next interior beam. The top flange of exterior concrete beams supporting the cantilever forming brackets shall be tied to the top flange of the next interior beam. The ties shall be spaced at 4 ft (1.2 m) centers. Permanent cross frames on steel girders may be considered a tie. Ties shall be a minimum of 1/2 inch (13 mm) diameter threaded rod with an adjusting mechanism for drawing the tie taut. The ties shall utilize hanger brackets or clips which hook onto the flange of steel beams. No welding will be permitted to the structural steel or stud shear connectors, or to reinforcement bars of concrete beams, for the installation of the tie bar system. After installation of the ties and blocking, the tie shall be drawn taut until the tie does not vary from a straight line from beam to beam. The tie system shall be approved by the Engineer.”

### **Revise Article 503.06(b)(3) to read as follows.**

- “(3) Beam Blocks. Suitable beam blocks of 4 in x 4 in (100 x 100 mm) timbers or metal structural shapes of equivalent strength or better, acceptable to the Engineer, shall be wedged between the webs of the two beams tied together, within 6 inches (150 mm) of the bottom flange at each location where they are tied. When it is not feasible to have the resulting force from the leg brace of the cantilever brackets transmitted to the web within 6 inches (150 mm) of the bottom flange, then additional blocking shall be placed at each bracket to transmit the resulting force to within 6 inches (150 mm) of the bottom flange of the next interior beam or girder.”

### **Delete the last paragraph of Article 503.06(b).**

**Revise the third paragraph of Article 503.16 to read as follows.**

“Fogging equipment shall be in operation unless the evaporation rate is less than 0.1 lb/sq ft/hour (0.5kg/sq m/hour) and the Engineer gives permission to stop. The evaporation rate shall be determined according to the following formula.

$$E = (T_c^{2.5} - rT_a^{2.5})(1 + 0.4V)x10^{-6} \text{ (English)}$$

$$E = 5[(T_c + 18)^{2.5} - r(T_a + 18)^{2.5}](V + 4)x10^{-6} \text{ (Metric)}$$

Where:

$E$  = Evaporation Rate, lb/ft<sup>2</sup>/h (kg/sq m/h)

$T_c$  = Concrete Temperature, °F (°C)

$T_a$  = Air Temperature, °F (°C)

$r$  = Relative Humidity in percent/100

$V$  = Wind Velocity, mph (km/h)

The Contractor shall provide temperature, relative humidity, and wind speed measuring equipment. Fogging equipment shall be adequate to reach or cover the entire pour from behind the finishing machine or vibrating screed to the point of curing covering application, and shall be operated in a manner which shall not accumulate water on the deck until the curing covering has been placed.”

**Revise the third paragraph of Article 503.16(a)(1) to read as follows.**

“At the Contractor’s option, a vibrating screed may be used in lieu of a finishing machine for superstructures with a pour width less than or equal to 24 ft (7.3 m). After the concrete is placed and consolidated, it shall be struck off with a vibrating screed allowing for camber, if required. The vibrating screed shall be of a type approved by the Engineer. A slight excess of concrete shall be kept in front of the cutting edge at all times during the striking off operation. After screeding, the entire surface shall be finished with hand-operated longitudinal floats having blades not less than 10 ft (3 m) in length and 6 in. (150 mm) in width. Decks so finished need not be straightedge tested as specified in 503.16(a)(2).”

**Delete the fifth paragraph of 503.16(a)(1).**



**Revise Article 503.16(a)(2) to read as follows.**

“(2) Straightedge Testing and Surface Correction. After the finishing has been completed and while the concrete is still plastic, the surface shall be tested for trueness with a 10 ft (3 m) straightedge, or a hand-operated longitudinal float having blades not less than 10 ft (3 m) in length and 6 in. (150 mm) in width. The Contractor shall furnish and use an accurate 10 ft (3 m) straightedge or float which has a handle not less than 3 ft (1 m) longer than 1/2 the pour width. The straightedge or float shall be held in contact with the surface and passed gradually from one side of the superstructure to the other. Advance along the surface shall be in successive stages of not more than 1/2 the length of the straightedge or float. Any depressions found shall be immediately filled with freshly mixed concrete, struck off, consolidated, and refinished. High areas shall be cut down and refinished.”

**Replace the second sentence of the first paragraph of Article 1020.13(a)(5) with the following sentences.**

“Cotton mats in poor condition will not be allowed. The cotton mats shall be placed in a manner which will not create indentations greater than 1/4 inch (6 mm) in the concrete surface. Minor marring of the surface is tolerable and is secondary to the importance of timely curing.”

**Revise Article 1020.14(b) to read as follows.**

“(b) Concrete in Structures. Concrete may be placed when the air temperature is above 40 °F (4 °C) and rising, and concrete placement shall stop when the falling temperature reaches 45 °F (7 °C) or below, unless otherwise approved by the Engineer.

(1) Bridge Deck Concrete. For concrete in bridge decks, slabs, and bridge approach slabs the Contractor shall schedule placing and finishing of the concrete during hours in which the ambient air temperature is forecast to be lower than 85 °F (30 °C). It shall be understood this may require scheduling the deck pour at night in order to utilize the temperature window available. The temperature of the concrete immediately before placement shall be a minimum of 50 °F (10 °C) and a maximum of 85 °F (30 °C).

(2) Non-Bridge Deck Concrete. Except as noted above, the temperature of the concrete immediately before placement shall be a minimum of 50 °F (10 °C) and a maximum of 90 °F (32 °C).

If concrete is pumped, the temperature restrictions above shall be considered at point of placement. When insulated forms are used according to Article 1020.13(d)(1), the maximum temperature of the concrete mixture immediately before placement shall be 80 °F (25 °C). When concrete is placed in contact with previously placed concrete, the temperature of the freshly mixed concrete may be increased by the Contractor to offset anticipated heat loss, but in no case shall the maximum concrete temperature be permitted to exceed the limits stated in this Article.”

**Revise Article 1103.13(a) to read as follows.**

“(a) Bridge Deck. The finishing machine shall be equipped with: (1) a mechanical strike off device; (2) either a rotating cylinder(s) or a longitudinal oscillating screed which transversely finishes the surface of the concrete. The Contractor may attach other equipment to the finishing machine to enhance the final finish when approved by the Engineer. The finishing machine shall produce a deck surface of uniform texture, free from porous areas, and with the required surface smoothness.

The finishing machine shall be operated on rails or other supports that will not deflect under the applied loads. The maximum length of rail segments supported on top of beams and within the pour shall be 10 ft (3 m). The supports shall be adjustable for elevation and shall be completely in place to allow the finishing machine to be used for the full length of the area to be finished. The supports shall be approved by the Engineer before placing of the concrete is started.”

**Revise Article 1103.17(k) to read as follows.**

“(k) Fogging Equipment. Fogging equipment shall be hand held fogging equipment for humidity control. The equipment shall be capable of atomizing water to produce a fog blanket by the use of pressure 2500 psi minimum (17.24 MPa) and an industrial fire hose fogging nozzle or equivalent. Fogging equipment attached to the finishing machine will not be permitted.”

**AGGREGATE SUBGRADE IMPROVEMENT (BDE)**

Effective: April 1, 2012

Revised: January 1, 2013

Add the following Section to the Standard Specifications:

**“SECTION 303. AGGREGATE SUBGRADE IMPROVEMENT**

**303.01 Description.** This work shall consist of constructing an aggregate subgrade improvement.

**303.02 Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Coarse Aggregate .....	1004.06
(b) Reclaimed Asphalt Pavement (RAP) (Notes 1, 2, and 3) .....	1031

Note 1. Crushed RAP, from either full depth or single lift removal, may be mechanically blended with aggregate gradations CS 01, CS 02, and RR 01 but shall not exceed 40 percent of the total product. The top size of the RAP shall be less than 4 in. (100 mm) and well graded.

Note 2. RAP having 100 percent passing the 1 1/2 in. (37.5 mm) sieve and being well graded, may be used as capping aggregate in the top 3 in. (75 mm) when aggregate gradations CS 01, CS 02, or RR 01 are used in lower lifts.

Note 3. The RAP used for aggregate subgrade improvement shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications".

**303.03 Equipment.** The vibratory machine shall be according to Article 1101.01, or as approved by the Engineer.

**303.04 Soil Preparation.** The stability of the soil shall be according to the Department's Subgrade Stability Manual for the aggregate thickness specified.

**303.05 Placing Aggregate.** The maximum nominal lift thickness of aggregate gradations CA 02, CA 06, or CA 10 shall be 12 in. (300 mm). The maximum nominal lift thickness of aggregate gradations CS 01, CS 02, and RR 01 shall be 24 in. (600 mm).

**303.06 Capping Aggregate.** The top surface of the aggregate subgrade shall consist of a minimum 3 in. (75 mm) of aggregate gradations CA 06 or CA 10. When the contract specifies that a granular subbase is to be placed on the aggregate subgrade improvement, the 3 in. (75 mm) of capping aggregate shall be the same gradation and may be placed with the underlying aggregate subgrade improvement material.

**303.07 Compaction.** All aggregate lifts shall be compacted to the satisfaction of the Engineer. If the moisture content of the material is such that compaction cannot be obtained, sufficient water shall be added so that satisfactory compaction can be obtained.

**303.08 Finishing and Maintenance of Aggregate Subgrade Improvement.** The aggregate subgrade improvement shall be finished to the lines, grades, and cross sections shown on the plans, or as directed by the Engineer. The aggregate subgrade improvement shall be maintained in a smooth and compacted condition.

**303.09 Method of Measurement.** This work will be measured for payment according to Article 311.08.

**303.10 Basis of Payment.** This work will be paid for at the contract unit price per cubic yard (cubic meter) or ton (metric ton) for AGGREGATE SUBGRADE IMPROVEMENT or at the contract unit price per square yard (square meter) for AGGREGATE SUBGRADE IMPROVEMENT, of the thickness specified.”

Add the following to Section 1004 of the Standard Specifications:

“**1004.06 Coarse Aggregate for Aggregate Subgrade Improvement.** The aggregate shall be according to Article 1004.01 and the following.

- (a) Description. The coarse aggregate shall be crushed gravel, crushed stone, or crushed concrete.
- (b) Quality. The coarse aggregate shall consist of sound durable particles reasonably free of deleterious materials.
- (c) Gradation.
  - (1) The coarse aggregate gradation for total subgrade thickness less than or equal to 12 in. (300 mm) shall be CA 2, CA 6, CA 10, or CS 01.

The coarse aggregate gradation for total subgrade thickness more than 12 in. (300 mm) shall be CS 01, CS 02 or RR 01(see Article 1005.01(c)).

COARSE AGGREGATE SUBGRADE GRADATIONS					
Grad No.	Sieve Size and Percent Passing				
	8"	6"	4"	2"	#4
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20
CS 02		100	80 ± 10	25 ± 15	

COARSE AGGREGATE SUBGRADE GRADATIONS (Metric)					
Grad No.	Sieve Size and Percent Passing				
	200 mm	150 mm	100 mm	50 mm	4.75 mm
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20
CS 02		100	80 ± 10	25 ± 15	

- (2) The 3 in. (75 mm) capping aggregate shall be gradation CA 6 or CA 10.”

**AUTOMATED FLAGGER ASSISTANCE DEVICES (BDE)**

Effective: January 1, 2008

Description. This work shall consist of furnishing and operating automated flagger assistance devices (AFADs) as part of the work zone traffic control and protection for two-lane highways where two-way traffic is maintained over one lane of pavement. Use of these devices shall be at the option of the Contractor.

Equipment. AFADs shall be according to the FHWA memorandum, "MUTCD - Revised Interim Approval for the use of Automated Flagger Assistance Devices in Temporary Traffic Control Zones (IA-4R)", dated January 28, 2005. The devices shall be mounted on a trailer or a moveable cart and shall meet the requirements of NCHRP 350, Category 4.

The AFAD shall be the Stop/Slow type. This device uses remotely controlled "STOP" and "SLOW" signs to alternately control right-of-way.

Signs for the AFAD shall be according to Article 701.03 of the Standard Specifications and the MUTCD. The signs shall be 24 x 24 in. (600 x 600 mm) having an octagon shaped "STOP" sign on one side and a diamond shaped "SLOW" sign on the opposite side. The letters on the signs shall be 8 in. (200 mm) high. If the "STOP" sign has louvers, the full sign face shall be visible at a distance of 50 ft (15 m) and greater.

The signs shall be supplemented with one of the following types of lights.

- (a) Flashing Lights. When flashing lights are used, white or red flashing lights shall be mounted within the "STOP" sign face and white or yellow flashing lights within the "SLOW" sign face.
- (b) Stop and Warning Beacons. When beacons are used, a stop beacon shall be mounted 24 in. (600 mm) or less above the "STOP" sign face and a warning beacon mounted 24 in. (600 mm) or less above, below, or to the side of the "SLOW" sign face. As an option, a Type B warning light may be used in lieu of the warning beacon.

A "WAIT ON STOP" sign shall be placed on the right hand side of the roadway at a point where drivers are expected to stop. The sign shall be 24 x 30 in. (600 x 750 mm) with a black legend and border on a white background. The letters shall be at least 6 in. (150 mm) high.

This device may include a gate arm or mast arm that descends to a horizontal position when the "STOP" sign is displayed and rises to a vertical position when the "SLOW" sign is displayed. When included, the end of the arm shall reach at least to the center of the lane being controlled. The arm shall have alternating red and white retroreflective stripes, on both sides, sloping downward at 45 degrees toward the side on which traffic will pass. The stripes shall be 6 in. (150 mm) in width and at least 2 in. (50 mm) in height.

Flagging Requirements. Flaggers and flagging requirements shall be according to Article 701.13 of the Standard Specifications and the following.

AFADs shall be placed at each end of the traffic control, where a flagger is shown on the plans. The flaggers shall be able to view the face of the AFAD and approaching traffic during operation.

To stop traffic, the "STOP" sign shall be displayed, the corresponding lights/beacon shall flash, and when included, the gate arm shall descend to a horizontal position. To permit traffic to move, the "SLOW" sign shall be displayed, the corresponding lights/beacon shall flash, and when included, the gate arm shall rise to a vertical position.

If used at night, the AFAD location shall be illuminated according to Section 701 of the Standard Specifications.

When not in use, AFADs will be considered nonoperating equipment and shall be stored according to Article 701.11 of the Standard Specifications.

Basis of Payment. This work will not be paid for separately but shall be considered as included in the cost of the various traffic control items included in the contract.

**COARSE AGGREGATE QUALITY (BDE)**

Effective: July 1, 2015

Revise Article 1004.01(b) of the Standard Specifications to read:

“(b) Quality. The coarse aggregate shall be according to the quality standards listed in the following table.

COARSE AGGREGATE QUALITY				
QUALITY TEST	CLASS			
	A	B	C	D
Na <sub>2</sub> SO <sub>4</sub> Soundness 5 Cycle, ITP 104 <sup>1/</sup> , % Loss max.	15	15	20	25 <sup>2/</sup>
Los Angeles Abrasion, ITP 96 <sup>11/</sup> , % Loss max.	40 <sup>3/</sup>	40 <sup>4/</sup>	40 <sup>5/</sup>	45
Minus No. 200 (75 μm) Sieve Material, ITP 11	1.0 <sup>6/</sup>	---	2.5 <sup>7/</sup>	---
Deleterious Materials <sup>10/</sup>				
Shale, % max.	1.0	2.0	4.0 <sup>8/</sup>	---
Clay Lumps, % max.	0.25	0.5	0.5 <sup>8/</sup>	---
Coal & Lignite, % max.	0.25	---	---	---
Soft & Unsound Fragments, % max.	4.0	6.0	8.0 <sup>8/</sup>	---
Other Deleterious, % max.	4.0 <sup>9/</sup>	2.0	2.0 <sup>8/</sup>	---
Total Deleterious, % max.	5.0	6.0	10.0 <sup>8/</sup>	---
Oil-Stained Aggregate <sup>10/</sup> , % max	5.0	---	---	

1/ Does not apply to crushed concrete.

2/ For aggregate surface course and aggregate shoulders, the maximum percent loss shall be 30.

3/ For portland cement concrete, the maximum percent loss shall be 45.

4/ Does not apply to crushed slag or crushed steel slag.

- 5/ For hot-mix asphalt (HMA) binder mixtures, except when used as surface course, the maximum percent loss shall be 45.
- 6/ For crushed aggregate, if the material finer than the No. 200 (75 µm) sieve consists of the dust from fracture, essentially free from clay or silt, this percentage may be increased to 2.5.
- 7/ Does not apply to aggregates for HMA binder mixtures.
- 8/ Does not apply to Class A seal and cover coats.
- 9/ Includes deleterious chert. In gravel and crushed gravel aggregate, deleterious chert shall be the lightweight fraction separated in a 2.35 heavy media separation. In crushed stone aggregate, deleterious chert shall be the lightweight fraction separated in a 2.55 heavy media separation. Tests shall be run according to ITP 113.
- 10/ Test shall be run according to ITP 203.
- 11/ Does not apply to crushed slag.

All varieties of chert contained in gravel coarse aggregate for portland cement concrete, whether crushed or uncrushed, pure or impure, and irrespective of color, will be classed as chert and shall not be present in the total aggregate in excess of 25 percent by weight (mass).

Aggregates used in Class BS concrete (except when poured on subgrade), Class PS concrete, and Class PC concrete (bridge superstructure products only, excluding the approach slab) shall contain no more than two percent by weight (mass) of deleterious materials. Deleterious materials shall include substances whose disintegration is accompanied by an increase in volume which may cause spalling of the concrete.”

**COATED GALVANIZED STEEL CONDUIT (BDE)**

Effective: January 1, 2013

Revised: January 1, 2015

Revise Article 811.03(b) of the Standard Specifications to read:

“(b) Coated Galvanized Steel Conduit. In addition to the methods described in Article 810.05(a) the following methods shall be observed when installing coated conduit.

Coated conduit pipe vise jaw adapters shall be used when the conduit is being clamped to avoid damaging the coating.

Coated conduit shall be cut with a roller cutter or by other means approved by the conduit manufacturer.

After any cutting or threading operations are completed, the bare steel shall be touched up with the conduit manufacturer’s touch up compound.”

**COILABLE NONMETALLIC CONDUIT (BDE)**

Effective: August 1, 2014

Revised: January 1, 2015

Revise Article 1088.01(c) of the Standard Specifications to read:

“(c) Coilable Nonmetallic Conduit. The conduit shall be a high density polyethylene duct which is intended for underground use can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties or performance. The conduit and its manufacture shall be according to UL 651A for Schedule 40 conduit, except Schedule 80 shall be used under pavement, stabilized shoulder, paved median, paved driveway, curb and/or gutter and sidewalk.

Performance Tests. Testing procedures and test results shall meet the requirements of UL 651A. Certified copies of the test report shall be submitted to the Engineer prior to the installation of the conduit.”

**CONCRETE END SECTIONS FOR PIPE CULVERTS (BDE)**

Effective: January 1, 2013

Description. This work shall consist of constructing cast-in-place concrete and precast concrete end sections for pipe culverts. These end sections are shown on the plans as Highway Standard 542001, 542006, 542011, or 542016. This work shall be according to Section 542 of the Standard Specifications except as modified herein.



Materials. Materials shall be according to the following Articles of Division 1000 – Materials of the Standard Specifications.

Item	Article/Section
(a) Portland Cement Concrete (Note 1) .....	1020
(b) Precast Concrete End Sections (Note 2)	
(c) Coarse Aggregate (Note 3) .....	1004.05
(d) Structural Steel (Note 4) .....	1006.04
(e) Anchor Bolts and Rods (Note 5) .....	1006.09
(f) Reinforcement Bars .....	1006.10(a)
(g) Nonshrink Grout .....	1024.02
(h) Chemical Adhesive Resin System .....	1027
(i) Mastic Joint Sealer for Pipe .....	1055
(j) Hand Hole Plugs .....	1042.16

Note 1. Cast-in-place concrete end sections shall be Class SI, except the 14 day mix design shall have a compressive strength of 5000 psi (34,500 kPa) or a flexural strength of (800 psi) 5500 kPa and a minimum cement factor of 6.65 cwt/cu yd (395 kg/cu m).

Note 2. Precast concrete end sections shall be according to Articles 1042.02 and 1042.03(b)(c)(d)(e) of the Standard Specifications. The concrete shall be Class PC according to Section 1020, and shall have a minimum compressive strength of 5000 psi (34,000 kPa) at 28 days.

Joints between precast sections shall be produced with reinforced tongue and groove ends according to the requirements of ASTM C 1577.

Note 3. The granular bedding placed below a precast concrete end section shall be gradation CA 6, CA 9, CA 10, CA 12, CA 17, CA 18, or CA 19.

Note 4. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable.

Note 5. The anchor rods for the culvert ties shall be according to the requirements of ASTM F 1554, Grade 105 (Grade 725).

CONSTRUCTION REQUIREMENTS

The concrete end sections may be precast or cast-in-place construction. Toe walls shall be either precast or cast-in-place, and shall be in proper position and backfilled according to the applicable paragraphs of Article 502.10 of the Standard Specifications prior to the installation of the concrete end sections. If soil conditions permit, cast-in-place toe walls may be poured directly against the soil. When poured directly against the soil, the clear cover of the sides and bottom of the toe wall shall be increased to 3 in. (75 mm) by increasing the thickness of the toe wall.

- (a) Cast-In-Place Concrete End Sections. Cast-in-place concrete end sections shall be constructed according to the requirements of Section 503 of the Standard Specifications and as shown on the plans.
- (b) Precast Concrete End Sections. When the concrete end sections will be precast, shop drawings detailing the slab thickness and reinforcement layout shall be submitted to the Engineer for review and approval.

The excavation and backfilling for precast concrete end sections shall be according to the requirements of Section 502 of the Standard Specifications, except a layer of granular bedding at least 6 in. (150 mm) in thickness shall be placed below the elevation of the bottom of the end section. The granular bedding shall extend a minimum of 2 ft (600 mm) beyond each side of the end section.

Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional 2/3 turn on one of the nuts. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut.

Method of Measurement. This work will be measured for payment as each, with each end of each culvert being one each.

Basis of Payment. This work will be paid for at the contract unit price per each for CONCRETE END SECTION, STANDARD 542001; CONCRETE END SECTION, STANDARD 542006; CONCRETE END SECTION, 542011; or CONCRETE END SECTION, 542016, of the pipe diameter and slope specified.

**CONCRETE GUTTER, CURB, MEDIAN, AND PAVED DITCH (BDE)**

Effective: April 1, 2014

Revised: August 1, 2014

Add the following to Article 606.02 of the Standard Specifications:

“(i) Polyurethane Joint Sealant ..... 1050.04”

Revise the fifth paragraph of Article 606.07 of the Standard Specifications to read:

“Transverse contraction and longitudinal construction joints shall be sealed according to Article 420.12, except transverse joints in concrete curb and gutter shall be sealed with polysulfide or polyurethane joint sealant.”

Add the following to Section 1050 of the Standard Specifications:

**“1050.04 Polyurethane Joint Sealant.** The joint sealant shall be a polyurethane sealant, Type S, Grade NS, Class 25 or better, Use T (T<sub>1</sub> or T<sub>2</sub>), according to ASTM C 920.”

**CONCRETE MIX DESIGN – DEPARTMENT PROVIDED (BDE)**

Effective: January 1, 2012

Revised: January 1, 2014

For the concrete mix design requirements in Article 1020.05(a) of the Supplemental Specifications and Recurring Special Provisions, the Contractor has the option to request the Engineer determine mix design material proportions for Class PV, PP, RR, BS, DS, SC, and SI concrete. A single mix design for each class of concrete will be provided. Acceptance by the Contractor to use the mix design developed by the Engineer shall not relieve the Contractor from meeting specification requirements.

**CONTRACT CLAIMS (BDE)**

Effective: April 1, 2014

Revise the first paragraph of Article 109.09(a) of the Standard Specifications to read:

“(a) Submission of Claim. All claims filed by the Contractor shall be in writing and in sufficient detail to enable the Department to ascertain the basis and amount of the claim. As a minimum, the following information must accompany each claim submitted.”

Revise Article 109.09(e) of the Standard Specifications to read:

“(e) Procedure. The Department provides two administrative levels for claims review.

Level I Engineer of Construction

Level II Chief Engineer/Director of Highways or Designee

- (1) Level I. All claims shall first be submitted at Level I. Two copies each of the claim and supporting documentation shall be submitted simultaneously to the District and the Engineer of Construction. The Engineer of Construction, in consultation with the District, will consider all information submitted with the claim and render a decision on the claim within 90 days after receipt by the Engineer of Construction. Claims not conforming to this Article will be returned without consideration. The Engineer of Construction may schedule a claim presentation meeting if in the Engineer of Construction’s judgment such a meeting would aid in resolution of the claim, otherwise a decision will be made based on the claim documentation submitted. If a Level I decision is not rendered within 90 days of receipt of the claim, or if the Contractor disputes the decision, an appeal to Level II may be made by the Contractor.

- (2) Level II. An appeal to Level II shall be made in writing to the Engineer of Construction within 45 days after the date of the Level I decision. Review of the claim at Level II shall be conducted as a full evaluation of the claim. A claim presentation meeting may be scheduled if the Chief Engineer/Director of Highways determines that such a meeting would aid in resolution of the claim, otherwise a decision will be made based on the claim documentation submitted. A Level II final decision will be rendered within 90 days of receipt of the written request for appeal.

Full compliance by the Contractor with the provisions specified in this Article is a contractual condition precedent to the Contractor's right to seek relief in the Court of Claims. The Director's written decision shall be the final administrative action of the Department. Unless the Contractor files a claim for adjudication by the Court of Claims within 60 days after the date of the written decision, the failure to file shall constitute a release and waiver of the claim."

#### **DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)**

Effective: September 1, 2000

Revised: January 2, 2015

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract that the Contractor signs with a subcontractor.

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (a) Withholding progress payments;
- (b) Assessing sanctions;
- (c) Liquidated damages; and/or
- (d) Disqualifying the Contractor from future bidding as non-responsible.

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 companies 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. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform **10.00%** 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 only 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 for in this Special Provision:

- (a) The bidder documents that enough 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 shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. 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 website at [www.dot.il.gov](http://www.dot.il.gov).

BIDDING PROCEDURES. Compliance with this Special Provision is a material bidding requirement. The failure of the bidder to comply will render the bid not responsive.

- (a) The bidder shall submit a Disadvantaged Business Utilization Plan on Department forms SBE 2025 and 2026 with the bid.
- (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. For bidding purposes, submission of the completed SBE 2025 forms, signed by the DBEs and faxed to the bidder will be acceptable as long as the original is available and provided upon request. All elements of information indicated on the said form shall be provided, including but not limited to the following:
  - (1) The names and addresses of DBE firms that will participate in the contract;
  - (2) A description, including pay item numbers, of the work each DBE will perform;
  - (3) The dollar amount of the participation of each DBE firm participating. The dollar amount of participation for identified work shall specifically state 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) DBE Participation Commitment Statements, form SBE 2025, signed by the bidder and each participating DBE firm documenting the commitment to use the DBE subcontractors whose participation is submitted to meet the contract goal;
  - (5) If the bidder is a joint venture comprised of DBE companies and non-DBE companies, the plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s); and,

- (6) If the contract goal is not met, evidence of good faith efforts; the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan submitted by the apparent successful bidder is approved. All information submitted by the bidder must be complete, accurate and adequately document that enough DBE participation has been obtained or document that good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work performance to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. The Utilization Plan will not be approved by the Department if the Utilization Plan does not document sufficient DBE participation to meet the contract goal unless the apparent successful bidder documented in the Utilization Plan that it made a good faith effort 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, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts that the bidder has made. Mere *pro forma* efforts, in other words, efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases, and will be considered by the Department.
  - (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.
  - (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime Contractor might otherwise prefer to perform these work items with its own forces.
  - (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

- (4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.
  - b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with Section 6 of the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.
- (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
- (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
- (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
- (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.



- (b) If the Department determines that the apparent successful bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided that it is otherwise eligible for award. If the Department determines that the bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification shall include a statement of reasons for the determination.
- (c) The bidder may request administrative reconsideration of a determination adverse to the bidder within the five working days after the receipt of 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 determination shall become final if a request is not made and delivered. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. 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 documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for consideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

- (a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.

- (b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.
- (c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the prime Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.
- (d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:
  - (1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
  - (2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission is receives as a result of the lease arrangement.
- (e) DBE as a material supplier:
  - (1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
  - (2) 100 percent goal credit for the cost of materials of supplies obtained from a DBE manufacturer.
  - (3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a regular dealer or manufacturer.

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 Utilization 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. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the Participation Statement.

- (a) NO AMENDMENT. 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) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, then a new Request for Approval of Subcontractor shall not be required. However, the Contractor must document efforts to assure that the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.
- (c) SUBCONTRACT. The Contractor must provide DBE subcontracts to IDOT upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.

(d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:

- (1) That the replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or
- (2) That the DBE is aware that its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or
- (3) That the DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

(e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a). Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE listed in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the prime Contractor's reasonable, nondiscriminatory bond requirements;
- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1,200 or applicable state law.
- (6) You have determined that the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides to you written notice of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract;
- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the prime Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the prime Contractor can self-perform the work for which the DBE contractor was engaged or so that the prime Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated, or fails to complete its work on the Contract for any reason the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department shall provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

- (f) PAYMENT RECORDS. 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 therefore to the DBE by the Contractor, but not later than thirty calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Regional Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement 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 Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.
- (g) ENFORCEMENT. 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.
- (h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department.

**EQUAL EMPLOYMENT OPPORTUNITY (BDE)**

Effective: April 1, 2015

FEDERAL AID CONTRACTS. Revise the following section of Check Sheet #1 of the Recurring Special Provisions to read:

"EQUAL EMPLOYMENT OPPORTUNITY

In the event of the Contractor's noncompliance with the provisions of this Equal Employment Opportunity Clause, the Illinois Human Rights Act, or the Illinois Department of Human Rights Rules and Regulations, the Contractor may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political sub-divisions or municipal corporations, and the contract may be cancelled or voided in whole or in part, and such other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation.

During the performance of this Contract, the Contractor agrees as follows:

- (1) That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, marital status, order of protection status, national origin or ancestry, citizenship status, age, physical or mental disability unrelated to ability, military status, or an unfavorable discharge from military service; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.
- (2) That, if it hires additional employees in order to perform this contract or any portion hereof, it will determine the availability (according to the Illinois Department of Human Rights Rules and Regulations) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.
- (3) That, in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, sexual orientation, marital status, order of protection status, national origin or ancestry, citizenship status, age, physical or mental disability unrelated to ability, military status or an unfavorable discharge from military service.

- (4) That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the Contractor's obligations under the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations. If any labor organization or representative fails or refuses to cooperate with the Contractor in its efforts to comply with such Act and Rules and Regulations, the Contractor will promptly so notify the Illinois Department of Human Rights and IDOT and will recruit employees from other sources when necessary to fulfill its obligations thereunder.
- (5) That it will submit reports as required by the Illinois Department of Human Rights Rules and Regulations, furnish all relevant information as may from time to time be requested by the Illinois Department of Human Rights or IDOT, and in all respects comply with the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations.
- (6) That it will permit access to all relevant books, records, accounts, and work sites by personnel of IDOT and the Illinois Department of Human Rights for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations.
- (7) That it will include verbatim or by reference the provisions of this clause in every subcontract it awards under which any portion of the contract obligations are undertaken or assumed, so that the provisions will be binding upon the subcontractor. In the same manner as with other provisions of this contract, the Contractor will be liable for compliance with applicable provisions of this clause by subcontractors; and further it will promptly notify IDOT and the Illinois Department of Human Rights in the event any subcontractor fails or refuses to comply with these provisions. In addition, the Contractor will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations."

STATE CONTRACTS. Revise Section II of Check Sheet #5 of the Recurring Special Provisions to read:

"II. EQUAL EMPLOYMENT OPPORTUNITY

In the event of the Contractor's noncompliance with the provisions of this Equal Employment Opportunity Clause, the Illinois Human Rights Act or the Illinois Department of Human Rights Rules and Regulations, the Contractor may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political sub-divisions or municipal corporations, and the contract may be cancelled or voided in whole or in part, and such other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation.



During the performance of this Contract, the Contractor agrees as follows:

1. That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, marital status, order of protection status, national origin or ancestry, citizenship status, age, physical or mental disability unrelated to ability, military status, or an unfavorable discharge from military service; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.
2. That, if it hires additional employees in order to perform this contract or any portion hereof, it will determine the availability (according to the Illinois Department of Human Rights Rules and Regulations) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.
3. That, in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, sexual orientation, marital status, order of protection status, national origin or ancestry, citizenship status, age, physical or mental disability unrelated to ability, military status, or an unfavorable discharge from military service.
4. That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the Contractor's obligations under the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations. If any labor organization or representative fails or refuses to cooperate with the Contractor in its efforts to comply with such Act and Rules and Regulations, the Contractor will promptly so notify the Illinois Department of Human Rights and IDOT and will recruit employees from other sources when necessary to fulfill its obligations thereunder.
5. That it will submit reports as required by the Illinois Department of Human Rights Rules and Regulations, furnish all relevant information as may from time to time be requested by the Illinois Department of Human Rights or IDOT, and in all respects comply with the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations.
6. That it will permit access to all relevant books, records, accounts and work sites by personnel of IDOT and the Illinois Department of Human Rights for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and the Illinois Department of Human Rights Rules and Regulations.

7. That it will include verbatim or by reference the provisions of this clause in every subcontract it awards under which any portion of the contract obligations are undertaken or assumed, so that the provisions will be binding upon the subcontractor. In the same manner as with other provisions of this contract, the Contractor will be liable for compliance with applicable provisions of this clause by subcontractors; and further it will promptly notify IDOT and the Illinois Department of Human Rights in the event any subcontractor fails or refuses to comply with these provisions. In addition, the Contractor will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.”

**FRICTION AGGREGATE (BDE)**

Effective: January 1, 2011

Revised: November 1, 2014

Revise Article 1004.01(a)(4) of the Standard Specifications to read:

- “(4) Crushed Stone. Crushed stone shall be the angular fragments resulting from crushing undisturbed, consolidated deposits of rock by mechanical means. Crushed stone shall be divided into the following, when specified.
- a. Carbonate Crushed Stone. Carbonate crushed stone shall be either dolomite or limestone. Dolomite shall contain 11.0 percent or more magnesium oxide (MgO). Limestone shall contain less than 11.0 percent magnesium oxide (MgO).
  - b. Crystalline Crushed Stone. Crystalline crushed stone shall be either metamorphic or igneous stone, including but is not limited to, quartzite, granite, rhyolite and diabase.”

Revise Article 1004.03(a) of the Standard Specifications to read:

**“1004.03 Coarse Aggregate for Hot-Mix Asphalt (HMA).** The aggregate shall be according to Article 1004.01 and the following.

(a) Description. The coarse aggregate for HMA shall be according to the following table.

Use	Mixture	Aggregates Allowed
Class A	Seal or Cover	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag Crushed Concrete
HMA Low ESAL	Stabilized Subbase or Shoulders	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag <sup>1/</sup> Crushed Concrete
HMA High ESAL Low ESAL	Binder IL-19.0 or IL-19.0L  SMA Binder	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Crushed Gravel Carbonate Crushed Stone <sup>2/</sup> Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Concrete <sup>3/</sup>
HMA High ESAL Low ESAL	C Surface and Leveling Binder IL-9.5 or IL-9.5L  SMA Ndesign 50 Surface	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Crushed Gravel Carbonate Crushed Stone <sup>2/</sup> Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag <sup>4/</sup> Crushed Concrete <sup>3/</sup>

Use	Mixture	Aggregates Allowed	
HMA High ESAL	D Surface and Leveling Binder IL-9.5  SMA Ndesign 50 Surface	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Crushed Gravel Carbonate Crushed Stone (other than Limestone) <sup>2/</sup> Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag <sup>4/</sup> Crushed Concrete <sup>3/</sup>	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		25% Limestone	Dolomite
		50% Limestone	Any Mixture D aggregate other than Dolomite
75% Limestone	Crushed Slag (ACBF) or Crushed Sandstone		
HMA High ESAL	E Surface IL-9.5  SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Crushed Gravel Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag Crushed Concrete <sup>3/</sup>  No Limestone.	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		50% Dolomite <sup>2/</sup>	Any Mixture E aggregate
		75% Dolomite <sup>2/</sup>	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone
75% Crushed Gravel or Crushed Concrete <sup>3/</sup>	Crushed Sandstone, Crystalline Crushed Stone, Crushed Slag (ACBF), or Crushed Steel Slag		

Use	Mixture	Aggregates Allowed	
HMA High ESAL	F Surface IL-9.5  SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> <sup>5/</sup> :	
		Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag No Limestone.	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		50% Crushed Gravel, Crushed Concrete <sup>3/</sup> , or Dolomite <sup>2/</sup>	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone

- 1/ Crushed steel slag allowed in shoulder surface only.
- 2/ Carbonate crushed stone shall not be used in SMA Ndesign 80. In SMA Ndesign 50, carbonate crushed stone shall not be blended with any of the other aggregates allowed alone in Ndesign 50 SMA binder or Ndesign 50 SMA surface.
- 3/ Crushed concrete will not be permitted in SMA mixes.
- 4/ Crushed steel slag shall not be used as leveling binder.
- 5/ When combinations of aggregates are used, the blend percent measurements shall be by volume.”

### **GROOVING FOR RECESSED PAVEMENT MARKINGS (BDE)**

Effective: November 1, 2012

Revised: August 1, 2014

Description. This work shall consist of grooving the pavement surface in preparation for the application of recessed pavement markings.

Equipment. Equipment shall be according to the following.

- (a) Pavement Marking Tape Installations: The grooving equipment shall have a free-floating saw blade cutting head equipped with gang-stacked diamond saw blades. The diamond saw blades shall be of uniform wear and shall produce a smooth textured surface. Any ridges in the groove shall have a maximum height of 15 mils (0.38 mm).
- (b) Liquid and Thermoplastic Pavement Marking Installations: The grooving equipment shall be equipped with either a free-floating saw blade cutting head or a free-floating grinder cutting head configuration with diamond or carbide tipped cutters and shall produce an irregular textured surface.

## CONSTRUCTION REQUIREMENTS

General. The Contractor shall supply the Engineer with a copy of the pavement marking material manufacturer's recommendations for constructing a groove.

Pavement Grooving Methods. The grooves for recessed pavement markings shall be constructed using the following methods.

- (a) Wet Cutting Head Operation. When water is required or used to cool the cutting head, the groove shall be flushed with high pressure water immediately following the cut to avoid build up and hardening of slurry in the groove. The pavement surface shall be allowed to dry for a minimum of 24 hours prior to the final cleaning of the groove and application of the pavement marking material.
- (b) Dry Cutting Head Operation. When used on HMA pavements, the groove shall be vacuumed or cleaned by blasting with high-pressure air to remove loose aggregate, debris, and dust generated during the cutting operation. When used on PCC pavements, the groove shall be flushed with high pressure water or shot blasted to remove any PCC particles that may have become destabilized during the grooving process. If high pressure water is used, the pavement surface shall be allowed to dry for a minimum of 24 hours prior to the final cleaning of the groove and application of the pavement marking material.

Pavement Grooving. Grooving shall not cause ravel, aggregate fractures, spalling or disturbance of the joints to the underlying surface of the pavement. Grooves shall be cut into the pavement prior to the application of the pavement marking material. Grooves shall be cut such that the width is 1 in. (25 mm) greater than the width of the pavement marking line as specified on the plans. Grooves for letters and symbols shall be cut in a square or rectangular shape so that the entire marking will fit within the limits of the grooved area. The position of the edge of the grooves shall be a minimum of 4 in. (100 mm) from the edge of all longitudinal joints. The depth of the groove shall not be less than the manufacturer's recommendations for the pavement marking material specified, but shall be installed to a minimum depth of 110 mils (2.79 mm) and a maximum depth of 200 mils (5.08 mm) for pavement marking tapes thermoplastic markings and a minimum depth of 40 mils (1.02 mm) and a maximum depth of 80 mils (2.03 mm) for liquid markings. The cutting head shall be operated at the appropriate speed in order to prevent undulation of the cutting head and grooving at an inconsistent depth.

At the start of grooving operations, a 50 ft (16.7 m) test section shall be installed and depth measurements shall be made at 10 ft (3.3 m) intervals within the test section. The individual depth measurements shall be within the allowable ranges according to this Article. If it is determined the test section has not been grooved at the appropriate depth or texture, adjustments shall be made to the cutting head and another 50 ft (16.7 m) test section shall be installed and checked. This process shall continue until the test section meets the requirements of this Article.

For new HMA pavements, grooves shall not be installed within 14 days of the placement of the final course of pavement.

Final Cleaning. Immediately prior to the application of the pavement marking material or primer sealer, the groove shall be cleaned with high-pressure air blast.

Method of Measurement. This work will be measured for payment in place, in feet (meter) for the groove width specified.

Grooving for letter, numbers and symbols will be measured in square feet (square meters).

Basis of Payment. This work will be paid for at the contract unit price per foot (meter) for GROOVING FOR RECESSED PAVEMENT MARKING of the groove width specified, and per square foot (square meter) for GROOVING FOR RECESSED PAVEMENT MARKING, LETTERS AND SYMBOLS.

The following shall only apply when preformed plastic pavement markings are to be recessed:

Add the following paragraph after the first paragraph of Article 780.07 of the Standard Specifications.

“The markings shall be capable of being applied in a grooved slot on new and existing portland cement concrete and HMA surfaces, by means of a pressure-sensitive, precoated adhesive, or liquid contact cement which shall be applied at the time of installation. A primer sealer shall be applied with a roller and shall cover and seal the entire bottom of the groove. The primer sealer shall be recommended by the manufacturer of the pavement marking material and shall be compatible with the material being used. The Contractor shall install the markings in the groove as soon as possible after the primer sealer cures according to the manufacturer’s recommendations. The markings placed in the groove shall be rolled and tamped into the groove with a roller or tamper cart cut to fit the groove and loaded with or weighing at least 200 lb (90kg). Vehicle tires shall not be used for tamping. The Contractor shall roll and tamp the material with a minimum of 6 passes to prevent easy removal or peeling.”

**HOT-MIX ASPHALT – MIXTURE DESIGN COMPOSITION AND VOLUMETRIC REQUIREMENTS (BDE)**

Effective: November 1, 2013

Revised: November 1, 2014

Revise the last sentence of the first paragraph of Article 312.05 of the Standard Specifications to read:

“The minimum compacted thickness of each lift shall be according to Article 406.06(d).”

Delete the minimum compacted lift thickness table in Article 312.05 of the Standard Specifications.

Revise the second paragraph of Article 355.02 of the Standard Specifications to read:

“The mixture composition used shall be IL-19.0.”

Revise Article 355.05(a) of the Standard Specifications to read:

“(a) The top lift thickness shall be 2 1/4 in. (60 mm) for mixture composition IL-19.0.”

Revise the Leveling Binder table and second paragraph of Article 406.05(c) of the Standard Specifications to read:

“Leveling Binder	
Nominal, Compacted, Leveling Binder Thickness, in. (mm)	Mixture Composition
≤ 1 1/4 (32)	IL-4.75, IL-9.5, or IL-9.5L
> 1 1/4 to 2 (32 to 50)	IL-9.5 or IL-9.5L

The density requirements of Article 406.07(c) shall apply for leveling binder, machine method, when the nominal compacted thickness is: 3/4 in. (19 mm) or greater for IL-4.75 mixtures; and 1 1/4 in. (32 mm) or greater for IL-9.5 and IL-9.5L mixtures.”

Revise the table in Article 406.06(d) of the Standard Specifications to read:

“MINIMUM COMPACTED LIFT THICKNESS	
Mixture Composition	Thickness, in. (mm)
IL-4.75	3/4 (19)
IL-9.5, IL-9.5L	1 1/4 (32)
SMA-12.5	2 (51)
IL-19.0, IL-19.0L	2 1/4 (57)”

Revise the ninth paragraph of Article 406.14 of the Standard Specifications to read:

“Test strip mixture will be evaluated at the contract unit price according to the following.”

Revise Article 406.14(a) of the Standard Specifications to read:

“(a) If the HMA placed during the initial test strip is determined to be acceptable the mixture will be paid for at the contract unit price.”

Revise Article 406.14(b) of the Standard Specifications to read:

“(b) If the HMA placed during the initial test strip (1) is determined to be unacceptable to remain in place by the Engineer, and (2) was not produced within 2.0 to 6.0 percent air voids or within the individual control limits of the JMF according to the Department’s test results, the mixture will not be paid for and shall be removed at the Contractor’s expense. An additional test strip shall be constructed and the mixture will be paid for in full, if produced within 2.0 to 6.0 percent air voids and within the individual control limits of the JMF.”



Revise Article 406.14(c) of the Standard Specifications to read:

“(c) If the HMA placed during the initial test strip (1) is determined to be unacceptable to remain in place by the Engineer, and (2) was produced within 2.0 to 6.0 percent air voids and within the individual control limits of the JMF according to the Department’s test results, the mixture shall be removed. Removal will be paid according to Article 109.04. This initial mixture will be paid for at the contract unit price. An additional test strip shall be constructed and the mixture will be paid for in full, if produced within 2.0 to 6.0 percent air voids and within the individual control limits of the JMF.”

Delete Article 406.14(d) of the Standard Specifications.

Delete Article 406.14(e) of the Standard Specifications.

Delete the last sentence of Article 407.06(c) of the Standard Specifications.

Revise Note 2. of Article 442.02 of the Standard Specifications to read:

“Note 2. The mixture composition of the HMA used shall be IL-19.0 binder, designed with the same Ndesign as that specified for the mainline pavement.”

Delete the second paragraph of Article 482.02 of the Standard Specifications.

Revise the first sentence of the sixth paragraph of Article 482.05 of the Standard Specifications to read:

“When the mainline HMA binder and surface course mixture option is used on resurfacing projects, shoulder resurfacing widths of 6 ft (1.8 m) or less may be placed simultaneously with the adjacent traffic lane for both the binder and surface courses.”

Revise the second sentence of the fourth paragraph of Article 601.04 of the Standard Specifications to read:

“The top 5 in. (125 mm) of the trench shall be backfilled with an IL-19.0L Low ESAL mixture meeting the requirements of Section 1030 and compacted to a density of not less than 90 percent of the theoretical density.”

Revise the second sentence of the fifth paragraph of Article 601.04 of the Standard Specifications to read:

“The top 8 in. (200 mm) of the trench shall be backfilled with an IL-19.0L Low ESAL mixture meeting the requirements of Section 1030 and compacted to a density of not less than 90 percent of the theoretical density.”

Revise Article 1003.03(c) of the Standard Specifications to read:

“(c) Gradation. The fine aggregate gradation for all HMA shall be FA 1, FA 2, FA 20, FA 21, or FA 22. The fine aggregate gradation for SMA shall be FA/FM 20.

For mixture IL-4.75 and surface mixtures with an Ndesign = 90, at least 50 percent of the required fine aggregate fraction shall consist of either stone sand, slag sand, or steel slag meeting the FA 20 gradation.

For mixture IL-19.0, Ndesign = 90 the fine aggregate fraction shall consist of at least 67 percent manufactured sand meeting FA 20 or FA 22 gradation. For mixture IL-19.0, Ndesign = 50 or 70 the fine aggregate fraction shall consist of at least 50 percent manufactured sand meeting FA 20 or FA 22 gradation. The manufactured sand shall be stone sand, slag sand, steel slag sand, or combinations thereof.

Gradation FA 1, FA 2, or FA 3 shall be used when required for prime coat aggregate application for HMA.”

Remove footnote 3/ from the tables and at the end of the tables in Article 1004.01(c) of the Standard Specifications.

Delete the last sentence of the first paragraph of Article 1004.03(b) of the Standard Specifications.

Revise the table in Article 1004.03(c) of the Standard Specifications to read:

“Use	Size/Application	Gradation No.
Class A-1, 2, & 3	3/8 in. (10 mm) Seal	CA 16
Class A-1	1/2 in. (13 mm) Seal	CA 15
Class A-2 & 3	Cover	CA 14
HMA High ESAL	IL-19.0 IL-9.5	CA 11 <sup>1/</sup> CA 16 and/or CA 13 CA 16
HMA Low ESAL	IL-19.0L IL-9.5L Stabilized Subbase or Shoulders	CA 11 <sup>1/</sup> CA 16

1/ CA 16 or CA 13 may be blended with the gradations listed.”

Revise the nomenclature table in Article 1030.01 of the Standard Specifications to read:

“High ESAL	IL-19.0 binder; IL-9.5 surface
Low ESAL	IL-19.0L binder; IL-9.5L surface; Stabilized Subbase (HMA) <sup>1/</sup> ; HMA Shoulders <sup>2/</sup>

1/ Uses 19.0L binder mix.

2/ Uses 19.0L for lower lifts and 9.5L for surface lift.”

Revise Article 1030.02 of the Standard Specifications and Supplemental Specifications to read:

“**1030.02 Materials.** Materials shall be according to the following.

Item .....	Article/Section
(a) Coarse Aggregate .....	1004.03
(b) Fine Aggregate .....	1003.03
(c) RAP Material .....	1031
(d) Mineral Filler .....	1011
(e) Hydrated Lime .....	1012.01
(f) Slaked Quicklime (Note 1)	
(g) Performance Graded Asphalt Binder (Note 2) .....	1032
(h) Fibers (Note 3)	
(i) Warm Mix Asphalt (WMA) Technologies (Note 4)	

Note 1. Slaked quicklime shall be according to ASTM C 5.

Note 2. The asphalt binder shall be an SBS PG 76-28 when the SMA is used on a full-depth asphalt pavement and SBS PG 76-22 when used as an overlay.

Note 3. A stabilizing additive such as cellulose or mineral fiber shall be added to the SMA mixture according to Illinois Modified AASHTO M 325. The stabilizing additive shall meet the Fiber Quality Requirements listed in Illinois Modified AASHTO M 325. Prior to approval and use of fibers, the Contractor shall submit a notarized certification by the producer of these materials stating they meet these requirements.

Note 4. Warm mix additives or foaming processes shall be selected from the current Bureau of Materials and Physical Research Approved List, “Warm Mix Asphalt Technologies”.

Revise Article 1030.04(a)(1) of the Standard Specifications and the Supplemental Specifications to read:

“(1) High ESAL Mixtures. The Job Mix Formula (JMF) shall fall within the following limits.

High ESAL, MIXTURE COMPOSITION (% PASSING) <sup>1/</sup>								
Sieve Size	IL-19.0 mm		SMA 12.5 <sup>4/</sup>		IL-9.5 mm		IL-4.75 mm	
	min	max	min	max	min	max	min	max
1 1/2 in. (37.5 mm)								
1 in. (25 mm)		100						
3/4 in. (19 mm)	90	100		100				
1/2 in. (12.5 mm)	75	89	90	99		100		100
3/8 in. (9.5 mm)			50	85	90	100		100
#4 (4.75 mm)	40	60	20	40	32	69	90	100
#8 (2.36 mm)	26	42	16	24 <sup>5/</sup>	32	52 <sup>2/</sup>	70	90
#16 (1.18 mm)	15	30			10	32	50	65
#50 (300 μm)	6	15			4	15	15	30
#100 (150 μm)	4	9			3	10	10	18
#200 (75 μm)	3	6	8.0	11.0 <sup>3/</sup>	4	6	7	9
Ratio Dust/Asphalt Binder		1.0				1.0		1.0 <sup>3/</sup>

- 1/ Based on percent of total aggregate weight.
- 2/ The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with Ndesign = 90.
- 3/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer.
- 4/ The maximum percent passing the #635 (20 μm) sieve shall be ≤ 3 percent.
- 5/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted above 24 percent.”

Delete Article 1030.04(a)(3) of the Standard Specifications.

Delete Article 1030.04(a)(4) of the Standard Specifications.

Revise the table in Article 1030.04(b)(1) of the Standard Specifications to read:

"VOLUMETRIC REQUIREMENTS High ESAL				
	Voids in the Mineral Aggregate (VMA), % minimum			Voids Filled with Asphalt Binder (VFA), %
N <sub>design</sub>	IL-19.0	IL-9.5	IL-4.75 <sup>1/</sup>	
50	13.5	15.0	18.5	65 – 78 <sup>2/</sup>
70				65 - 75
90				

1/ Maximum Draindown for IL-4.75 shall be 0.3 percent

2/ VFA for IL-4.75 shall be 76-83 percent"

Revise the table in Article 1030.04(b)(2) of the Standard Specifications to read:

"VOLUMETRIC REQUIREMENTS Low ESAL				
Mixture Composition	Design Compactive Effort	Design Air Voids Target %	VMA (Voids in the Mineral Aggregate), % min.	VFA (Voids Filled with Asphalt Binder), %
IL-9.5L	N <sub>DES</sub> =30	4.0	15.0	65-78
IL-19.0L	N <sub>DES</sub> =30	4.0	13.5	N/A"

Replace Article 1030.04(b)(3) of the Standard Specifications with the following:

"(3) SMA Mixtures.

ESALs (million)	N <sub>design</sub>	Design Air Voids Target %	Voids in the Mineral Aggregate (VMA), % min.	Voids Filled with Asphalt (VFA), %
≤ 10	50	4.0	16.0	75 – 80
> 10	80	4.0	17.0	75 – 80"

Delete Article 1030.04(b)(4) of the Standard Specifications.

Delete Article 1030.04(b)(5) from the Supplemental Specifications.

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

"Parameter	Frequency of Tests		Test Method See Manual of Test Procedures for Materials
	High ESAL Mixture	Low ESAL Mixture	
Aggregate Gradation  % passing sieves: 1/2 in. (12.5 mm), No. 4 (4.75 mm), No. 8 (2.36 mm), No. 30 (600 µm) No. 200 (75 µm)	1 washed ignition oven test on the mix per half day of production	Note 3.	Illinois Procedure
Asphalt Binder Content by Ignition Oven  Note 1.	1 per half day of production		Illinois-Modified AASHTO T 308
VMA  Note 2.	Day's production ≥ 1200 tons:  1 per half day of production		Illinois-Modified AASHTO R 35
	Day's production < 1200 tons:  1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)		
Air Voids  Bulk Specific Gravity of Gyratory Sample  Note 4.	Day's production ≥ 1200 tons:  1 per half day of production		Illinois-Modified AASHTO T 312
	Day's production < 1200 tons:  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	Day's production ≥ 1200 tons:  1 per half day of production		Illinois-Modified AASHTO T 209
	Day's production < 1200 tons:  1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)		

Note 1. The Engineer may waive the ignition oven requirement for asphalt binder content if the aggregates to be used are known to have ignition asphalt binder 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 asphalt binder content.

Note 2. The  $G_{sb}$  used in the voids in the mineral aggregate (VMA) calculation shall be the same average  $G_{sb}$  value listed in the mix design.

Note 3. The Engineer reserves the right to require additional hot bin gradations for batch plants if control problems are evident.

Note 4. The WMA compaction temperature for mixture volumetric testing shall be  $270 \pm 5$  °F ( $132 \pm 3$  °C) for quality control testing. The WMA compaction temperature for quality assurance testing will be  $270 \pm 5$  °F ( $132 \pm 3$  °C) if the mixture is not allowed to cool to room temperature. If the mixture is allowed to cool to room temperature, it shall be reheated to standard HMA compaction temperatures.”

Revise the table in Article 1030.05(d)(2)b. of the Standard Specifications to read:

“Parameter	High ESAL Mixture Low ESAL Mixture
Ratio Dust/Asphalt Binder	0.6 to 1.2
Moisture	0.3 %”

Revise the Article 1030.05(d)(4) of the Supplemental Specifications to read:

“(4) Control Limits. Target values shall be determined by applying adjustment factors to the AJMF where applicable. The target values shall be plotted on the control charts within the following control limits.

CONTROL LIMITS						
Parameter	High ESAL Low ESAL		SMA		IL-4.75	
	Individual Test	Moving Avg. of 4	Individual Test	Moving Avg. of 4	Individual Test	Moving Avg. of 4
% Passing: <sup>1/</sup>						
1/2 in. (12.5 mm)	± 6 %	± 4 %	± 6 %	± 4 %		
3/8 in. (9.5mm)			± 4 %	± 3 %		
No. 4 (4.75 mm)	± 5 %	± 4 %	± 5 %	± 4 %		
No. 8 (2.36 mm)	± 5 %	± 3 %	± 4 %	± 2 %		
No. 16 (1.18 mm)			± 4 %	± 2 %	± 4 %	± 3 %
No. 30 (600 µm)	± 4 %	± 2.5 %	± 4 %	± 2.5 %		
Total Dust Content No. 200 (75 µm)	± 1.5 %	± 1.0 %			± 1.5 %	± 1.0 %
Asphalt Binder Content	± 0.3 %	± 0.2 %	± 0.2 %	± 0.1 %	± 0.3 %	± 0.2 %
Voids	± 1.2 %	± 1.0 %	± 1.2 %	± 1.0 %	± 1.2 %	± 1.0 %
VMA	-0.7 % <sup>2/</sup>	-0.5 % <sup>2/</sup>	-0.7 % <sup>2/</sup>	-0.5 % <sup>2/</sup>	-0.7 % <sup>2/</sup>	-0.5 % <sup>2/</sup>

1/ Based on washed ignition oven

2/ Allowable limit below minimum design VMA requirement

DENSITY CONTROL LIMITS		
Mixture Composition	Parameter	Individual Test
IL-4.75	N <sub>design</sub> = 50	93.0 - 97.4 % <sup>1/</sup>
IL-9.5	N <sub>design</sub> = 90	92.0 - 96.0 %
IL-9.5,IL-9.5L	N <sub>design</sub> < 90	92.5 - 97.4 %
IL-19.0	N <sub>design</sub> = 90	93.0 - 96.0 %
IL-19.0, IL-19.0L	N <sub>design</sub> < 90	93.0 <sup>2/</sup> - 97.4 %
SMA	N <sub>design</sub> = 50 & 80	93.5 - 97.4 %

1/ Density shall be determined by cores or by correlated, approved thin lift nuclear gauge.

2/ 92.0 % when placed as first lift on an unimproved subgrade.”



Revise the table in Article 1030.05(d)(5) of the Supplemental Specifications to read:

“CONTROL CHART REQUIREMENTS	High ESAL, Low ESAL, SMA & IL-4.75
Gradation <sup>1/3/</sup>	% Passing Sieves: 1/2 in. (12.5 mm) <sup>2/</sup> No. 4 (4.75 mm) No. 8 (2.36 mm) No. 30 (600 µm)
Total Dust Content <sup>1/</sup>	No. 200 (75 µm)
	Asphalt Binder Content
	Bulk Specific Gravity
	Maximum Specific Gravity of Mixture
	Voids
	Density
	VMA

1/ Based on washed ignition oven.

2/ Does not apply to IL-4.75.

3/ SMA also requires the 3/8 in. (9.5 mm) sieve.”

Delete Article 1030.05(d)(6)a.1.(b.) of the Standard Specifications.

Delete Article 1030.06(b) of the Standard Specifications.

Delete Article 1102.01(e) of the Standard Specifications.

**HOT-MIX ASPHALT – MIXTURE DESIGN VERIFICATION AND PRODUCTION (BDE)**

Effective: November 1, 2013

Revised: November 1, 2014

Description. This special provision provides the requirements for Hamburg Wheel and tensile strength testing for High ESAL, IL-4.75, and Stone Matrix Asphalt (SMA) hot-mix asphalt (HMA) mixes during mix design verification and production. This special provision also provides the plant requirements for hydrated lime addition systems used in the production of High ESAL, IL-4.75, and SMA mixes.

Mix Design Testing. Add the following below the referenced AASHTO standards in Article 1030.04 of the Standard Specifications:

AASHTO T 324 Hamburg Wheel Test

AASHTO T 283 Tensile Strength Test

Add the following to Article 1030.04 of the Standard Specifications:

“(d) Verification Testing. High ESAL, IL-4.75, and SMA mix designs submitted for verification will be tested to ensure that the resulting mix designs will pass the required criteria for the Hamburg Wheel Test (Illinois Modified AASHTO T 324) and the Tensile Strength Test (Illinois Modified AASHTO T 283). The Department will perform a verification test on gyratory specimens compacted by the Contractor. If the mix fails the Department’s verification test, the Contractor shall make necessary changes to the mix and provide passing Hamburg Wheel and tensile strength test results from a private lab. The Department will verify the passing results.

All new and renewal mix designs shall meet the following requirements for verification testing.

(1) Hamburg Wheel Test Criteria. The maximum allowable rut depth shall be 0.5 in. (12.5 mm). The minimum number of wheel passes at the 0.5 in. (12.5 mm) rut depth criteria shall be based on the high temperature binder grade of the mix as specified in the mix requirements table of the plans.

Illinois Modified AASHTO T 324 Requirements <sup>1/</sup>

PG Grade	Number of Passes
PG 58-xx (or lower)	5,000
PG 64-xx	7,500
PG 70-xx	15,000
PG 76-xx (or higher)	20,000

1/ When produced at temperatures of 275 ± 5 °F (135 ± 3 °C) or less, loose Warm Mix Asphalt shall be oven aged at 270 ± 5 °F (132 ± 3 °C) for two hours prior to gyratory compaction of Hamburg Wheel specimens.

(2) Tensile Strength Criteria. The minimum allowable conditioned tensile strength shall be 60 psi (415 kPa) for non-polymer modified performance graded (PG) asphalt binder and 550 kPa (80 psi) for polymer modified PG asphalt binder. The maximum allowable unconditioned tensile strength shall be 200 psi (1380 kPa).”

Production Testing. Revise Article 1030.06(a) of the Standard Specifications to read:

“(a) High ESAL, IL-4.75, WMA, and SMA Mixtures. For each contract, a 300 ton (275 metric tons) test strip will be required at the beginning of HMA production for each mixture with a quantity of 3000 tons (2750 metric tons) or more according to the Manual of Test Procedures for Materials “Hot Mix Asphalt Test Strip Procedures”.

Before start-up, target values shall be determined by applying gradation correction factors to the JMF when applicable. These correction factors shall be determined from previous experience. The target values, when approved by the Engineer, shall be used to control HMA production. Plant settings and control charts shall be set according to target values.

Before constructing the test strip, target values shall be determined by applying gradation correction factors to the JMF when applicable. After any JMF adjustment, the JMF shall become the Adjusted Job Mix Formula (AJMF). Upon completion of the first acceptable test strip, the JMF shall become the AJMF regardless of whether or not the JMF has been adjusted. If an adjustment/plant change is made, the Engineer may require a new test strip to be constructed. If the HMA placed during the initial test strip is determined to be unacceptable to remain in place by the Engineer, it shall be removed and replaced.

The limitations between the JMF and AJMF are as follows.

Parameter	Adjustment
1/2 in. (12.5 mm)	± 5.0 %
No. 4 (4.75 mm)	± 4.0 %
No. 8 (2.36 mm)	± 3.0 %
No. 30 (600 µm)	*
No. 200 (75 µm)	*
Asphalt Binder Content	± 0.3 %

\* In no case shall the target for the amount passing be greater than the JMF.

Any adjustments outside the above limitations will require a new mix design.

Mixture sampled to represent the test strip shall include additional material sufficient for the Department to conduct Hamburg Wheel testing according to Illinois Modified AASHTO T324 (approximately 60 lb (27 kg) total).

The Contractor shall immediately cease production upon notification by the Engineer of failing Hamburg Wheel test. All prior produced material may be paved out provided all other mixture criteria is being met. No additional mixture shall be produced until the Engineer receives passing Hamburg Wheel tests.

The Department may conduct additional Hamburg Wheel tests on production material as determined by the Engineer.”

Revise the title of Article 1030.06(b) of the Standard Specifications to read:

“(b) Low ESAL Mixtures.”

System for Hydrated Lime Addition. Revise the fourth sentence of the third paragraph of Article 1030.04(c) of the Standard Specifications to read:

“The method of application shall be according to Article 1102.01(a)(10).”

Replace the first three sentences of the second paragraph of Article 1102.01(a)(10) of the Standard Specifications to read:

“When hydrated lime is used as the anti-strip additive, a separate bin or tank and feeder system shall be provided to store and accurately proportion the lime onto the aggregate either as a slurry, as dry lime applied to damp aggregates, or as dry lime injected onto the hot aggregates prior to adding the liquid asphalt cement. If the hydrated lime is added either as a slurry or as dry lime on damp aggregates, the lime and aggregates shall be mixed by a power driven pugmill to provide a uniform coating of the lime prior to entering the dryer. If dry hydrated lime is added to the hot dry aggregates in a dryer-drum plant, the lime shall be added in such a manner that the lime will not become entrained into the air stream of the dryer-drum and that thorough dry mixing shall occur prior to the injection point of the liquid asphalt. When a batch plant is used, the hydrated lime shall be added to the mixture in the weigh hopper or as approved by the Engineer.”

Basis of Payment. Replace the seventh paragraph of Article 406.14 of the Standard Specifications with the following:

“For mixes designed and verified under the Hamburg Wheel criteria, the cost of furnishing and introducing anti-stripping additives in the HMA will not be paid for separately, but shall be considered as included in the contract unit price of the HMA item involved.

If an anti-stripping additive is required for any other HMA mix, the cost of the additive will be paid for according to Article 109.04. The cost incurred in introducing the additive into the HMA will not be paid for separately, but shall be considered as included in the contract unit price of the HMA item involved.

No additional compensation will be awarded to the Contractor because of reduced production rates associated with the addition of the anti-stripping additive.”

**HOT MIX ASPHALT – PRIME COAT (BDE)**

Effective: November 1, 2014

Revise Note 1 of Article 406.02 of the Standard Specifications to read:

“Note 1. The bituminous material used for prime coat shall be one of the types listed in the following table.

When emulsified asphalts are used, any dilution with water shall be performed by the emulsion producer. The emulsified asphalt shall be thoroughly agitated within 24 hours of application and show no separation of water and emulsion.

Application	Bituminous Material Types
Prime Coat on Brick, Concrete, or HMA Bases	SS-1, SS-1h, SS-1hP, SS-1vh, RS-1, RS-2, CSS-1, CSS-1h, CSS-1hp, CRS-1, CRS-2, HFE-90, RC-70
Prime Coat on Aggregate Bases	MC-30, PEP”

Add the following to Article 406.03 of the Standard Specifications.

- “(i) Vacuum Sweeper ..... 1101.19  
 (j) Spray Paver ..... 1102.06”

Revise Article 406.05(b) of the Standard Specifications to read:

“(b) Prime Coat. The bituminous material shall be prepared according to Article 403.05 and applied according to Article 403.10. The use of RC-70 shall be limited to air temperatures less than 60 °F (15 °C).

- (1) Brick, Concrete or HMA Bases. The base shall be cleaned of all dust, debris and any substance that will prevent the prime coat from adhering to the base. Cleaning shall be accomplished by sweeping to remove all large particles and air blasting to remove dust. As an alternative to air blasting, a vacuum sweeper may be used to accomplish the dust removal. The base shall be free of standing water at the time of application. The prime coat shall be applied uniformly and at a rate that will provide a residual asphalt rate on the prepared surface as specified in the following table.

Type of Surface to be Primed	Residual Asphalt Rate lb/sq ft (kg/sq m)
Milled HMA, Aged Non-Milled HMA, Milled Concrete, Non-Milled Concrete & Tined Concrete	0.05 (0.244)
Fog Coat between HMA Lifts, IL-4.75 & Brick	0.025 (0.122)

The bituminous material for the prime coat shall be placed one lane at a time. If a spray paver is not used, the primed lane shall remain closed until the prime coat is fully cured and does not pickup under traffic. When placing prime coat through an intersection where it is not possible to keep the lane closed, the prime coat may be covered immediately following its application with fine aggregate mechanically spread at a uniform rate of 2 to 4 lb/sq yd (1 to 2 kg/sq m).

- (2) Aggregate Bases. The prime coat shall be applied uniformly and at a rate that will provide a residual asphalt rate on the prepared surface of 0.25 lb/sq ft ± 0.01 (1.21 kg/sq m ±0.05).

The prime coat shall be permitted to cure until the penetration has been approved by the Engineer, but at no time shall the curing period be less than 24 hours for MC-30 or four hours for PEP. Pools of prime occurring in the depressions shall be broomed or squeegeed over the surrounding surface the same day the prime coat is applied.

The base shall be primed 1/2 width at a time. The prime coat on the second half/width shall not be applied until the prime coat on the first half/width has cured so that it will not pickup under traffic.

The residual asphalt rate will be verified a minimum of once per type of surface to be primed as specified herein for which at least 2000 tons (1800 metric tons) of HMA will be placed. The test will be according to the “Determination of Residual Asphalt in Prime and Tack Coat Materials” test procedure.

Prime coat shall be fully cured prior to placement of HMA to prevent pickup by haul trucks or paving equipment. If pickup occurs, paving shall cease in order to provide additional cure time, and all areas where the pickup occurred shall be repaired.

If after five days, loss of prime coat is evident prior to covering with HMA, additional prime coat shall be placed as determined by the Engineer at no additional cost to the Department.”

Revise the last sentence of the first paragraph of Article 406.13(b) of the Standard Specifications to read:

“Water added to emulsified asphalt, as allowed in Article 406.02, will not be included in the quantities measured for payment.”

Revise the second paragraph of Article 406.13(b) of the Standard Specifications to read:

“Aggregate for covering prime coat will not be measured for payment.”

Revise the first paragraph of Article 406.14 of the Standard Specifications to read:

**“406.14 Basis of Payment.** Prime Coat will be paid for at the contract unit price per pound (kilogram) of residual asphalt applied for BITUMINOUS MATERIALS (PRIME COAT), or POLYMERIZED BITUMINOUS MATERIALS (PRIME COAT).”

Revise Article 407.02 of the Standard Specifications to read:

**“407.02 Materials.** Materials shall be according to Article 406.02, except as follows.

Item	Article/Section
(a) Packaged Rapid Hardening Mortar or Concrete .....	1018”

Revise Article 407.06(b) of the Standard Specifications to read:

“(b) A bituminous prime coat shall be applied between each lift of HMA according to Article 406.05(b).”

Delete the second paragraph of Article 407.12 of the Standard Specifications.

Revise the first paragraph of Article 408.04 of the Standard Specifications to read:

**“408.04 Method of Measurement.** Bituminous priming material will be measured for payment according to Article 406.13.”

Revise the first paragraph of Article 408.05 of the Standard Specifications to read:

**“408.05 Basis of Payment.** This work will be paid for at the contract unit price per pound (kilogram) of residual asphalt applied for BITUMINOUS MATERIALS (PRIME COAT) or POLYMERIZED BITUMINOUS MATERIALS (PRIME COAT) and at the contract unit price per ton (metric ton) for INCIDENTAL HOT-MIX ASPHALT SURFACING.”

Revise Article 1032.02 of the Standard Specifications to read:

**“1032.02 Measurement.** Asphalt binders, emulsified asphalts, rapid curing liquid asphalt, medium curing liquid asphalts, slow curing liquid asphalts, asphalt fillers, and road oils will be measured by weight.”

A weight ticket for each truck load shall be furnished to the inspector. The truck shall be weighed at a location approved by the Engineer. The ticket shall show the weight of the empty truck (the truck being weighed each time before it is loaded), the weight of the loaded truck, and the net weight of the bituminous material.

When an emulsion or cutback is used for prime coat, the percentage of asphalt residue of the actual certified product shall be shown on the producer’s bill of lading or attached certificate of analysis. If the producer adds extra water to an emulsion at the request of the purchaser, the amount of water shall also be shown on the bill of lading.

Payment will not be made for bituminous materials in excess of 105 percent of the amount specified by the Engineer.”

Add the following to the table in Article 1032.04 of the Standard Specifications.

“SS-1vh	160-180	70-80
RS-1, CRS-1	75-130	25-55”

Add the following to Article 1032.06 of the Standard Specifications.

“(g) Non Tracking Emulsified Asphalt SS-1vh shall be according to the following.

Requirements for SS-1vh			
Test		SPEC	AASHTO Test Method
Saybolt Viscosity @ 25C,	SFS	20-200	T 72
Storage Stability, 24hr.,	%	1 max.	T 59
Residue by Evaporation,	%	50 min.	T 59
Sieve Test,	%	0.3 max.	T 59
Tests on Residue from Evaporation			
Penetration @25°C, 100g., 5 sec.,	dmm	20 max.	T 49
Softening Point,	°C	65 min.	T 53
Solubility,	%	97.5 min.	T 44
Orig. DSR @ 82°C,	kPa	1.00 min.	T 315”

Revise the last table in Article 1032.06(f)(2)d. of the Standard Specifications to read:

"Grade	Use
SS-1, SS-1h, RS-1, RS-2, CSS-1, CRS-1, CRS-2, CSS-1h, HFE-90, SS-1hP, CSS-1hP, SS-1vh	Prime or fog seal
PEP	Bituminous surface treatment prime
RS-2, HFE-90, HFE-150, HFE- 300, CRSP, HFP, CRS-2, HFRS-2	Bituminous surface treatment
CSS-1h Latex Modified	Microsurfacing"

Add the following to Article 1101 of the Standard Specifications.

**"1101.19 Vacuum Sweeper.** The vacuum sweeper shall have a minimum sweeping path of 52 in. (1.3 m) and a minimum blower rating of 20,000 cu ft per minute (566 cu m per minute)."

Add the following to Article 1102 of the Standard Specifications:

**"1102.06 Spray Paver.** The spreading and finishing machine shall be capable of spraying a rapid setting emulsion tack coat, paving a layer of HMA, and providing a smooth HMA mat in one pass. The HMA shall be spread over the tack coat in less than five seconds after the application of the tack coat during normal paving speeds. No wheel or other part of the paving machine shall come into contact with the tack coat before the HMA is applied. In addition to meeting the requirements of Article 1102.03, the spray paver shall also meet the requirements of Article 1102.05 for the tank, heating system, pump, thermometer, tachometer or synchronizer, and calibration. The spray bar shall be equipped with properly sized and spaced nozzles to apply a uniform application of tack coat at the specified rate for the full width of the mat being placed."



**LRFD PIPE CULVERT BURIAL TABLES (BDE)**

Effective: November 1, 2013

Revised: April 1, 2015

Revise Article 542.02 of the Standard Specifications to read as follows:

“Item	Article/Section
(a) Galvanized Corrugated Steel Pipe .....	1006.01
(b) Galvanized Corrugated Steel Pipe Arch .....	1006.01
(c) Bituminous Coated Corrugated Steel Pipe .....	1006.01
(d) Bituminous Coated Corrugated Steel Pipe Arch .....	1006.01
(e) Reserved	
(f) Aluminized Steel Type 2 Corrugated Pipe .....	1006.01
(g) Aluminized Steel Type 2 Corrugated Pipe Arch .....	1006.01
(h) Precoated Galvanized Corrugated Steel Pipe .....	1006.01
(i) Precoated Galvanized Corrugated Steel Pipe Arch .....	1006.01
(j) Corrugated Aluminum Alloy Pipe .....	1006.03
(k) Corrugated Aluminum Alloy Pipe Arch .....	1006.03
(l) Extra Strength Clay Pipe .....	1040.02
(m) Concrete Sewer, Storm Drain, and Culvert Pipe .....	1042
(n) Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe .....	1042
(o) Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe.....	1042
(p) Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe .....	1042
(q) Polyvinyl Chloride (PVC) Pipe .....	1040.03
(r) Corrugated Polyvinyl Chloride (PVC) Pipe with a Smooth Interior .....	1040.03
(s) Corrugated Polypropylene (CPP) pipe with smooth Interior .....	1040.08
(t) Corrugated Polyethylene (PE) Pipe with a Smooth Interior .....	1040.04
(u) Polyethylene (PE) Pipe with a Smooth Interior .....	1040.04
(v) Rubber Gaskets and Preformed Flexible Joint Sealants for Concrete Pipe .....	1056
(w) Mastic Joint Sealer for Pipe .....	1055
(x) External Sealing Band .....	1057
(y) Fine Aggregate (Note 1) .....	1003.04
(z) Coarse Aggregate (Note 2) .....	1004.05
(aa) Packaged Rapid Hardening Mortar or Concrete .....	1018
(bb) Nonshrink Grout .....	1024.02
(cc) Reinforcement Bars and Welded Wire Fabric .....	1006.10
(dd) Handling Hole Plugs .....	1042.16

Note 1. The fine aggregate shall be moist.

Note 2. The coarse aggregate shall be wet.”

Revise the table for permitted materials in Article 542.03 of the Standard Specifications as follows:

"Class	Materials
A	Rigid Pipes: Extra Strength Clay Pipe Concrete Sewer Storm Drain and Culvert Pipe, Class 3 Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe
C	Rigid Pipes: Extra Strength Clay Pipe Concrete Sewer Storm Drain and Culvert Pipe, Class 3 Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe Flexible Pipes: Aluminized Steel Type 2 Corrugated Pipe Aluminized Steel Type 2 Corrugated Pipe Arch Precoated Galvanized Corrugated Steel Pipe Precoated Galvanized Corrugated Steel Pipe Arch Corrugated Aluminum Alloy Pipe Corrugated Aluminum Alloy Pipe Arch Polyvinyl Chloride (PVC) Pipe Corrugated Polyvinyl Chloride (PVC) Pipe with a Smooth Interior Polyethylene (PE) Pipe with a Smooth Interior Corrugated Polypropylene (CPP) Pipe with Smooth Interior
D	Rigid Pipes: Extra Strength Clay Pipe Concrete Sewer Storm Drain and Culvert Pipe, Class 3 Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe Flexible Pipes: Galvanized Corrugated Steel Pipe Galvanized Corrugated Steel Pipe Arch Bituminous Coated Corrugated Steel Pipe Bituminous Coated Corrugated Steel Pipe Arch Aluminized Steel Type 2 Corrugated Pipe Aluminized Steel Type 2 Corrugated Pipe Arch Precoated Galvanized Corrugated Steel Pipe Precoated Galvanized Corrugated Steel Pipe Arch Corrugated Aluminum Alloy Pipe Corrugated Aluminum Alloy Pipe Arch Polyvinyl Chloride (PVC) Pipe Corrugated Polyvinyl Chloride (PVC) Pipe with a Smooth Interior Corrugated Polyethylene (PE) Pipe with a Smooth Interior Polyethylene (PE) Pipe with a Smooth Interior" Corrugated Polypropylene (CPP) Pipe with Smooth Interior

Revise Articles 542.03(b) and (c) of the Standard Specifications to read:

- “(b) Extra strength clay pipe will only be permitted for pipe culverts Type 1, for 10 in., 12 in., 42 in. and 48 in. (250 mm, 300 mm, 1050 mm and 1200 mm), Types 2, up to and including 48 in. (1200 mm), Type 3, up to and including 18 in. (450 mm), Type 4 up to and including 10 in. (250 mm), for all pipe classes.
- (c) Concrete sewer, storm drain, and culvert pipe Class 3 will only be permitted for pipe culverts Type 1, up to and including 10 in (250 mm), Type 2, up to and including 30 in. (750 mm), Type 3, up to and including 15 in. (375 mm); Type 4, up to and including 10 in. (250 mm), for all pipe classes.”

Replace the pipe tables in Article 542.03 of the Standard Specifications with the following:

"Table IA: Classes of Reinforced Concrete Pipe for the Respective Diameters of Pipe and Fill Heights over the Top of the Pipe							
Nominal Diameter in.	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7
	Fill Height: 3' and less 1' min cover	Fill Height: Greater than 3' not exceeding 10'	Fill Height: Greater than 10' not exceeding 15'	Fill Height: Greater than 15' not exceeding 20'	Fill Height: Greater than 20' not exceeding 25'	Fill Height: Greater than 25' not exceeding 30'	Fill Height: Greater than 30' not exceeding 35'
12	IV	II	III	IV	IV	V	V
15	IV	II	III	IV	IV	V	V
18	IV	II	III	IV	IV	V	V
21	III	II	III	IV	IV	V	V
24	III	II	III	IV	IV	V	V
30	IV	II	III	IV	IV	V	V
36	III	II	III	IV	IV	V	V
42	II	II	III	IV	IV	V	V
48	II	II	III	IV	IV	V	V
54	II	II	III	IV	IV	V	V
60	II	II	III	IV	IV	V	V
66	II	II	III	IV	IV	V	V
72	II	II	III	IV	V	V	V
78	II	II	III	IV	2020	2370	2730
84	II	II	III	IV	2020	2380	2740
90	II	II	III	1680	2030	2390	2750
96	II	III	III	1690	2040	2400	2750
102	II	III	III	1700	2050	2410	2760
108	II	III	1360	1710	2060	2410	2770

Notes:

A number indicates the D-Load for the diameter and depth of fill and that a special design is required.  
 Design assumptions; Water filled pipe, Type 2 bedding and Class C Walls

Table IA: Classes of Reinforced Concrete Pipe for the Respective Diameters of Pipe and Fill Heights over the Top of the Pipe (Metric)							
Nominal Diameter mm	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7
	Fill Height: 1 m and less 0.3 m min cover	Fill Height: Greater than 1 m not exceeding 3 m	Fill Height: Greater than 3 m not exceeding 4.5 m	Fill Height: Greater than 4.5 m not exceeding 6 m	Fill Height: Greater than 6 m not exceeding 7.5 m	Fill Height: Greater than 7.5 m not exceeding 9 m	Fill Height: Greater than 9 m not exceeding 10.5 m
300	IV	II	III	IV	IV	V	V
375	IV	II	III	IV	IV	V	V
450	IV	II	III	IV	IV	V	V
525	III	II	III	IV	IV	V	V
600	III	II	III	IV	IV	V	V
750	IV	II	III	IV	IV	V	V
900	III	II	III	IV	IV	V	V
1050	II	II	III	IV	IV	V	V
1200	II	II	III	IV	IV	V	V
1350	II	II	III	IV	IV	V	V
1500	II	II	III	IV	IV	V	V
1650	II	II	III	IV	IV	V	V
1800	II	II	III	IV	V	V	V
1950	II	II	III	IV	100	110	130
2100	II	II	III	IV	100	110	130
2250	II	II	III	80	100	110	130
2400	II	III	III	80	100	110	130
2550	II	III	III	80	100	120	130
2700	II	III	70	80	100	120	130

Notes:

A number indicates the D-Load for the diameter and depth of fill and that a special design is required.

Design assumptions; Water filled pipe, Type 2 bedding and Class C Walls

TABLE IB: THICKNESS OF CORRUGATED STEEL PIPE  
 FOR THE RESPECTIVE DIAMETER OF PIPE AND FILL HEIGHTS OVER THE TOP OF THE PIPE FOR 2 2/3"x1/2", 3"x1" AND 5"x1" CORRUGATIONS

Nominal Diameter in.*	Type 1			Type 2			Type 3			Type 4			Type 5			Type 6			Type 7		
	Fill Height: 3' and less 1' min. cover			Fill Height: Greater than 3' not exceeding 10'			Fill Height: Greater than 10' not exceeding 15'			Fill Height: Greater than 15' not exceeding 20'			Fill Height: Greater than 20' not exceeding 25'			Fill Height: Greater than 25' not exceeding 30'			Fill Height: Greater than 30' not exceeding 35'		
	2 2/3" x 1/2"	3"x1"	5"x1"	2 2/3" x 1/2"	3"x1"	5"x1"	2 2/3" x 1/2"	3"x1"	5"x1"	2 2/3" x 1/2"	3"x1"	5"x1"	2 2/3" x 1/2"	3"x1"	5"x1"	2 2/3" x 1/2"	3"x1"	5"x1"	2 2/3" x 1/2"	3"x1"	5"x1"
12	0.064			0.064			0.064			0.064			0.064			0.064			0.064		
15	0.064			0.064			0.064			0.064			0.064			0.064			0.064		
18	(0.079)			0.064			0.064			0.064			0.064			(0.079)			(0.079)		
21	(0.079)			0.064			0.064			0.064			(0.079)			(0.079)			(0.079)		
24	(0.079)			0.064			0.064			0.064			(0.079)			(0.079)			(0.079)		
30	(0.109E)			0.064			0.064			0.064			(0.079)			(0.109)			(0.109)		
36	(0.109E)			0.064			(0.079)			(0.079)			(0.109)			0.109			(0.138E)		
42	0.079			0.064			(0.079)			(0.079)			(0.109)			(0.109E)			(0.109E)		
48	0.109	(0.109)	0.109	(0.109)	0.079	0.079	(0.109)	0.079	(0.109)	0.109	(0.109)	0.109	(0.138)	(0.109)	0.109	(0.138E)	0.109	0.109	(0.138E)	0.109	(0.138)
54	0.109	(0.109)	0.109	(0.109)	0.079	0.079	0.109	(0.109)	0.109	0.109	(0.109)	0.109	(0.138)	0.109	0.109	(0.138E)	0.109	(0.138)	(0.138E)	0.138	0.138
60	0.109	0.109	0.109	0.109	0.079	(0.109)	0.109	(0.109)	0.109	0.109	(0.109)	0.109	(0.138)	0.109	0.109	(0.138E)	(0.138)	(0.138)	0.138E	(0.138E)	(0.138E)
66	(0.138)	0.109	0.109	0.109	0.079	(0.109)	0.109	(0.109)	0.109	0.109	0.109	0.109	(0.138)	0.109	(0.138)	(0.138E)	0.138	0.138	0.138E	(0.138E)	0.138E
72	0.138	0.109	(0.138)	0.138	(0.109)	(0.109)	0.138	(0.109)	0.109	0.138	0.109	0.109	0.138	(0.138)	(0.138)	(0.168E)	(0.138E)	0.138E	(0.168E)	(0.138E)	0.138E
78	0.168	0.109	(0.138)	0.168	(0.109)	0.109	0.168	0.109	0.109	0.168	0.109	(0.138)	0.168	(0.138)	(0.138)	H0.168E	(0.138E)	0.138E	H0.168E	0.138E	(0.168E)
84	0.168	(0.138)	(0.138)	0.168	(0.109)	0.109	0.168	0.109	0.109	0.168	0.109	(0.138)	0.168	(0.138)	0.138	H0.168E	(0.138E)	0.138E	H0.168E	(0.168E)	(0.168E)
90		(0.138)	(0.138)		(0.109)	0.109		0.109	0.109		(0.138)	(0.138)		(0.138)	0.138		0.138E	(0.168E)		(0.168E)	(0.168E)
96		(0.138)	(0.138)		(0.109)	0.109		0.109	0.109		(0.138)	(0.138)		(0.138)	0.138		(0.168E)	(0.168E)		(0.168E)	(0.168E)
102		0.109Z	0.109Z		(0.109)	0.109		0.109	0.109		(0.138)	(0.138)		(0.138)	0.138		(0.168E)	(0.168E)		H0.138E	H0.168E
108		0.109Z	(0.138Z)		0.109	0.109		0.109	(0.138)		(0.138)	0.138		0.138	(0.168)		(0.168E)	(0.168E)		H0.138E	H0.168E
114		0.109Z	(0.138Z)		0.109	0.109		0.109	(0.138)		(0.138)	0.138		(0.168)	(0.168)		(0.168E)	0.168E		H0.138E	H0.168E
120		0.109Z	(0.138Z)		0.109	0.109		(0.138)	(0.138)		(0.138)	0.138		(0.168)	(0.168)		H0.138E	H0.168E		H0.168E	H0.168E
126		0.138Z	0.138Z		0.138	0.138		0.138	0.138		0.138	(0.168)		(0.168)	(0.168)		H0.138E	H0.168E		H0.168E	H0.168E
132		0.138Z	0.138Z		0.138	0.138		0.138	0.138		(0.168)	(0.168)		0.168	0.168		H0.138E	H0.168E		H0.168E	H0.168E
138		0.138Z	0.138Z		0.138	0.138		0.138	0.138		(0.168)	(0.168)		(0.168E)	H0.168E		H0.168E	H0.168E		H0.168E	
144		0.168Z	0.168Z		0.168	0.168		0.168	0.168		0.168	0.168		H0.168E	H0.168E		H0.168E	H0.168E		H0.168E	

Notes:

- \* Aluminized Type 2 Steel or Precoated Galvanized Steel shall be required for diameters up to 42" according to Article 1006.01, 1 1/2" x 1/4" corrugations shall be used for diameters less than 12".
- Thicknesses are based on longitudinal riveted seam fabrication, values in "( )" can be reduced by one gage thickness if helical seam fabrication is utilized.
- A thickness preceded by "H" indicates only helical seam fabrication is allowed.
- E Elongation according to Article 542.04(e)
- Z 1'-6" Minimum fill

TABLE IB: THICKNESS OF CORRUGATED STEEL PIPE  
 FOR THE RESPECTIVE DIAMETER OF PIPE AND FILL HEIGHTS OVER THE TOP OF THE PIPE FOR 68 mm x 13 mm, 75 mm x 25 mm AND 125 mm x 25 mm CORRUGATIONS  
 (Metric)

Nominal Diameter mm *	Type 1 Fill Height:			Type 2 Fill Height:			Type 3 Fill Height:			Type 4 Fill Height:			Type 5 Fill Height:			Type 6 Fill Height:			Type 7 Fill Height:		
	1 m and less 0.3 m min. cover			Greater than 1 m not exceeding 3 m			Greater than 3 m not exceeding 4.5 m			Greater than 4.5 m not exceeding 6 m			Greater than 6 m not exceeding 7.5 m			Greater than 7.5 m not exceeding 9 m			Greater than 9 m not exceeding 10.5 m		
	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm
300	1.63			1.63			1.63			1.63			1.63			1.63			1.63		
375	1.63			1.63			1.63			1.63			1.63			1.63			(2.01)		
450	(2.01)			1.63			1.63			1.63			1.63			(2.01)			(2.01)		
525	(2.01)			1.63			1.63			1.63			(2.01)			(2.01)			(2.01)		
600	(2.01)			1.63			1.63			1.63			(2.01)			(2.01)			(2.01)		
750	(2.77E)			1.63			1.63			1.63			(2.01)			(2.01)			(2.77)		
900	(2.77E)			1.63			(2.01)			(2.01)			(2.77)			2.77			(3.51E)		
1050	2.01			1.63			(2.01)			(2.01)			(2.77)			(2.77E)			(2.77E)		
1200	2.77	(2.77)	2.77	(2.77)	2.01	2.01	(2.77)	2.01	(2.77)	2.77	(2.77)	2.77	(3.51)	(2.77)	2.77	(3.51E)	2.77	2.77	(3.51E)	2.77	(3.51)
1350	2.77	(2.77)	2.77	(2.77)	2.01	2.01	2.77	(2.77)	2.77	2.77	(2.77)	2.77	(3.51)	2.77	2.77	(3.51E)	2.77	(3.51)	(3.51E)	3.51	3.51
1500	2.77	2.77	2.77	2.77	2.01	(2.77)	2.77	(2.77)	2.77	2.77	(2.77)	2.77	(3.51)	2.77	2.77	(3.51E)	(3.51)	(3.51)	3.51E	(3.51E)	(3.51E)
1650	(3.51)	2.77	2.77	2.77	2.01	(2.77)	2.77	(2.77)	2.77	2.77	(2.77)	2.77	(3.51)	2.77	(3.51)	(3.51E)	3.51	3.51	3.51E	(3.51E)	3.51E
1800	3.51	2.77	(3.51)	3.51	(2.77)	(2.77)	3.51	(2.77)	2.77	3.51	2.77	2.77	3.51	(3.51)	(3.51)	(4.27E)	(3.51E)	3.51E	(4.27E)	(3.51E)	3.51E
1950	4.27	2.77	(3.51)	4.27	(2.77)	2.77	4.27	2.77	2.77	4.27	2.77	(3.51)	4.27	(3.51)	(3.51)	H 4.27E	(3.51E)	3.51E	H 4.27E	3.51E	(4.27E)
2100	4.27	(3.51)	(3.51)	4.27	(2.77)	2.77	4.27	2.77	2.77	4.27	2.77	(3.51)	4.27	(3.51)	3.51	H 4.27E	(3.51E)	3.51E	H 4.27E	(4.27E)	(4.27E)
2250		(3.51)	(3.51)		(2.77)	2.77		2.77	2.77		(3.51)	(3.51)		(3.51)	3.51		3.51E	(4.27E)		(4.27E)	(4.27E)
2400		(3.51)	(3.51)		(2.77)	2.77		2.77	2.77		(3.51)	(3.51)		(3.51)	3.51		(4.27E)	(4.27E)		(4.27E)	(4.27E)
2550		2.77Z	2.77Z		(2.77)	2.77		2.77	(3.51)		(3.51)	(3.51)		(3.51)	3.51		(4.27E)	(4.27E)		H 3.51E	H 4.27E
2700		2.77Z	(3.51Z)		2.77	2.77		2.77	(3.51)		(3.51)	3.51		3.51	(4.27)		(4.27E)	(4.27E)		H 3.51E	H 4.27E
2850		2.77Z	(3.51Z)		2.77	2.77		2.77	(3.51)		(3.51)	3.51		(4.27)	(4.27)		(4.27E)	4.27E		H 3.51E	H 4.27E
3000		2.77Z	(3.51Z)		2.77	2.77		(3.51)	(3.51)		(3.51)	3.51		(4.27)	(4.27)		H 3.51E	H 4.27E		H 4.27E	H 4.27E
3150		3.51Z	3.51Z		3.51	3.51		3.51	3.51		3.51	(4.27)		(4.27)	(4.27)		H 3.51E	H 4.27E		H 4.27E	H 4.27E
3300		3.51Z	3.51Z		3.51	3.51		3.51	3.51		(4.27)	(4.27)		4.27	4.27		H 3.51E	H 4.27E		H 4.27E	H 4.27E
3450		3.51Z	3.51Z		3.51	3.51		3.51	3.51		(4.27)	(4.27)		(4.27E)	H 4.27E		H 4.27E	H 4.27E		H 4.27E	H 4.27E
3600		4.27Z	4.27Z		4.27	4.27		4.27	4.27		4.27	4.27		H 4.27E	H 4.27E		H 4.27E	H 4.27E		H 4.27E	H 4.27E

Notes:

\* Aluminized Type 2 Steel or Precoated Galvanized Steel shall be required for diameters up to 1050 mm according to Article 1006.01, 38 mm x 6.5 mm corrugations shall be used for diameters less than 300 mm.

Thicknesses are based on longitudinal riveted seam fabrication, values in "( )" can be reduced by one gage thickness if helical seam fabrication is utilized.

A thickness preceded by an "H" indicates only helical seam fabrication is allowed.

E Elongation according to Article 542.04(e)

Z 450 mm Minimum Fill

TABLE IC: THICKNESS OF CORRUGATED ALUMINUM ALLOY PIPE  
 FOR THE RESPECTIVE DIAMETER OF PIPE AND FILL HEIGHTS OVER THE TOP OF THE PIPE FOR 2 2/3"x1/2" AND 3"x1" CORRUGATIONS

Nominal Diameter in.	Type 1		Type 2		Type 3		Type 4		Type 5		Type 6		Type 7	
	Fill Height: 3' and less 1' min. cover		Fill Height: Greater than 3' not exceeding 10'		Fill Height: Greater than 10' not exceeding 15'		Fill Height: Greater than 15' not exceeding 20'		Fill Height: Greater than 20' not exceeding 25'		Fill Height: Greater than 25' not exceeding 30'		Fill Height: Greater than 30' not exceeding 35'	
	2 2/3"x1/2"	3"x1"	2 2/3"x1/2"	3"x1"	2 2/3"x1/2"	3"x1"	2 2/3"x1/2"	3"x1"	2 2/3"x1/2"	3"x1"	2 2/3"x1/2"	3"x1"	2 2/3"x1/2"	3"x1"
12	(0.075)		0.060		0.060		0.060		0.060		0.060		0.060	
15	(0.075)		0.060		0.060		0.060		0.060		0.060		0.060	(0.075)
18	(0.075)		0.060		0.060		0.060		0.060		(0.075)		H 0.060	
21	H 0.060E		0.060		0.060		0.060		(0.075)		H 0.060		H 0.060E	
24	(0.105E)		0.060		0.060		(0.075)		(0.105)		(0.105)		(0.105E)	
30	H 0.075E	H 0.060	0.075	H 0.060	0.075	H 0.060	(0.105)	H 0.060	(0.105)	H 0.060	H 0.075E	H 0.060	H 0.075E	H 0.060
36	(0.135E)	H 0.060E	0.075	H 0.060	(0.105)	H 0.060	(0.105)	H 0.060	(0.135)	H 0.060	H 0.075E	H 0.060	H 0.075E	H 0.060E
42	0.105E	(0.075)	0.105	0.060	0.105	0.060	0.105	0.060	0.105	(0.075)	0.105E	0.105	0.105E	(0.105E)
48	0.105E	(0.075)	0.105	0.060	0.105	0.060	0.105	(0.075)	0.105	(0.105)	0.105E	(0.105E)	0.105E	(0.135E)
54	0.105E	(0.105)	0.105	0.060	0.105	0.060	0.105	(0.075)	0.105	(0.105)	0.105E	(0.105E)	(0.135E)	(0.135E)
60	0.135E	(0.105)	0.135	0.060	0.135	(0.075)	0.135	(0.105)	0.135	(0.105)	0.135E	(0.135E)	(0.164E)	(0.135E)
66	0.164E	(0.105)	0.164	0.060	0.164	(0.075)	0.164	(0.105)	0.164	(0.135)	0.164E	(0.135E)	H 0.164E	(0.135E)
72	0.164E	(0.105)	0.164	0.060	0.164	(0.075)	0.164	(0.105)	0.164	(0.135)	H 0.164E	(0.135E)	H 0.164E	(0.164E)
78		(0.135)		0.075		(0.105)		(0.105)		(0.135)		(0.135E)		(0.164E)
84		(0.135)		0.105		0.105		(0.135)		(0.135)		(0.164E)		(0.164E)
90		(0.135)		0.105		0.105		(0.135)		(0.135)		(0.164E)		(0.164E)
96		(0.135)		0.105		0.105		(0.135)		(0.135)		(0.164E)		H 0.135E
102		0.135Z		0.135		0.135		0.135		(0.164)		(0.164E)		H 0.135E
108		0.135Z		0.135		0.135		0.135		(0.164)		(0.164E)		H 0.164E
114		0.164Z		0.164		0.164		0.164		0.164		H 0.164E		H 0.164E
120		0.164Z		0.164		0.164		0.164		0.164		H 0.164E		

Notes:

Thicknesses are based on longitudinal riveted seam fabrication, values in "( )" can be reduced by one gage thickness if helical seam fabrication is utilized.

A thickness preceded by an "H" indicates only helical seam fabrication is allowed.

E Elongation according to Article 542.04(e), the elongation requirement for Type 1 fill heights may be eliminated for fills above 1'-6"

Z 1"-6" Minimum fill



TABLE IC: THICKNESS OF CORRUGATED ALUMINUM ALLOY PIPE  
 FOR THE RESPECTIVE DIAMETER OF PIPE AND FILL HEIGHTS OVER THE TOP OF THE PIPE  
 FOR 68 mm x 13 mm AND 75 mm x 25 mm CORRUGATIONS  
 (Metric)

Nominal Diameter mm	Type 1		Type 2		Type 3		Type 4		Type 5		Type 6		Type 7	
	Fill Height: 1 m and less 0.3 m min. cover		Fill Height: Greater than 1 m not exceeding 3 m		Fill Height: Greater than 3 m not exceeding 4.5 m		Fill Height: Greater than 4.5 m not exceeding 6 m		Fill Height: Greater than 6 m not exceeding 7.5 m		Fill Height: Greater than 7.5 m not exceeding 9 m		Fill Height: Greater than 9 m not exceeding 10.5 m	
	68 x 13 mm	75 x 25 mm	68 x 13 mm	75 x 25 mm	68 x 13 mm	75 x 25 mm	68 x 13 mm	75 x 25 mm	68 x 13 mm	75 x 25 mm	68 x 13 mm	75 x 25 mm	68 x 13 mm	75 x 25 mm
300	(1.91)		1.52		1.52		1.52		1.52		1.52		1.52	
375	(1.91)		1.52		1.52		1.52		1.52		1.52		(1.91)	
450	(1.91)		1.52		1.52		1.52		1.52		(1.91)		H 1.52	
525	H 1.52E		1.52		1.52		1.52		(1.91)		H 1.52		H 1.52E	
600	(2.67E)		1.52		1.52		(1.91)		(2.67)		(2.67)		(2.67E)	
750	H 1.91E	H 1.52	1.91	H 1.52	1.91	H 1.52	(2.67)	H 1.52	(2.67)	H 1.52	H 1.91E	H 1.52	H 1.91E	H 1.52
900	(3.43E)	H 1.52E	1.91	H 1.52	(2.67)	H 1.52	(2.67)	H 1.52	(3.43)	H 1.52	H 1.91E	H 1.52	H 1.91E	H 1.52E
1050	2.67E	(1.91)	2.67	1.52	2.67	1.52	2.67	1.52	2.67	(1.91)	2.67E	2.67	2.67E	(2.67E)
1200	2.67E	(1.91)	2.67	1.52	2.67	1.52	2.67	(1.91)	2.67	(2.67)	2.67E	(2.67E)	2.67E	(3.43E)
1350	2.67E	(2.67)	2.67	1.52	2.67	1.52	2.67	(1.91)	2.67	(2.67)	2.67E	(2.67E)	(3.43E)	(3.43E)
1500	3.43E	(2.67)	3.43	1.52	3.43	(1.91)	3.43	(2.67)	3.43	(2.67)	3.43E	(3.43E)	(4.17E)	(3.43E)
1650	4.17E	(2.67)	4.17	1.52	4.17	(1.91)	4.17	(2.67)	4.17	(3.43)	4.17E	(3.43E)	H 4.17E	(3.43E)
1800	4.17E	(2.67)	4.17	1.52	4.17	(1.91)	4.17	(2.67)	4.17	(3.43)	H 4.17E	(3.43E)	H 4.17E	(4.17E)
1950		(3.43)		1.91		(2.67)		(2.67)		(3.43)		(3.43E)		(4.17E)
2100		(3.43)		2.67		2.67		(3.43)		(3.43)		(4.17E)		(4.17E)
2250		(3.43)		2.67		2.67		(3.43)		(3.43)		(4.17E)		(4.17E)
2400		(3.43)		2.67		2.67		(3.43)		(3.43)		(4.17E)		H 3.43E
2550		3.43Z		3.43		3.43		3.43		(4.17)		(4.17E)		H 3.43E
2700		3.43Z		3.43		3.43		3.43		(4.17)		(4.17E)		H 4.17E
2850		4.17Z		4.17		4.17		4.17		4.17		H 4.17E		H 4.17E
3000		4.17Z		4.17		4.17		4.17		4.17		H 4.17E		H 4.17E

Notes:

Thicknesses are based on longitudinal riveted seam fabrication, values in “( )” can be reduced by one gage thickness if helical seam fabrication is utilized.

A thickness preceded by an “H” indicates only helical seam fabrication is allowed.

E Elongation according to Article 542.04(e), the elongation requirement for Type 1 fill heights may be eliminated for fills above 450 mm.

Z 450 mm Minimum fill

Table IIA: THICKNESS FOR CORRUGATED STEEL PIPE ARCHES AND CORRUGATED ALUMINUM ALLOY PIPE ARCHES FOR THE RESPECTIVE EQUIVALENT ROUND SIZE OF PIPE AND FILL HEIGHTS OVER THE TOP OF PIPE																									
Equivalent Round Size in.	Corrugated Steel & Aluminum Pipe Arch 2 2/3" x 1/2"		Corrugated Steel & Aluminum Pipe Arch 3" x 1"		Corrugated Steel Pipe Arch 5" x 1"		Min. Cover	Type 1						Type 2						Type 3					
	Span Rise (in.)*		Span Rise (in.)		Span Rise (in.)			Steel & Aluminum	Fill Height: 3' and less			Fill Height: Greater than 3' not exceeding 10'			Fill Height: Greater than 10' not exceeding 15'			Steel			Aluminum				
	Span (in.)	Rise (in.)	Span (in.)	Rise (in.)	Span (in.)	Rise (in.)	Steel			Aluminum			Steel			Aluminum			Steel			Aluminum			
							2 2/3" x 1/2"	3"x1"	5" x 1"	2 2/3" x 1/2"	3"x1"	2 2/3" x 1/2"	3"x1"	5" x 1"	2 2/3" x 1/2"	3"x1"	5" x 1"	2 2/3" x 1/2"	3"x1"	5" x 1"	2 2/3" x 1/2"	3"x1"	5" x 1"	2 2/3" x 1/2"	3"x1"
15	17	13					1'-6"	0.064			0.060			0.064			0.060			0.064			0.060		
18	21	15					1'-6"	0.064			0.060			0.064			0.060			0.064			0.060		
21	24	18					1'-6"	0.064			(0.075)			0.064			0.060			0.064			0.060		
24	28	20					1'-6"	(0.079)			(0.105)			0.064			0.075			0.064			0.075		
30	35	24					1'-6"	(0.079)			(0.105)			0.064			0.075			(0.079)			(0.105)		
36	42	29					1'-6"	(0.079)			0.105			0.064			0.105			0.064			0.105		
42	49	33					1'-6"	0.109			0.105			(0.109)			0.105			(0.109)			0.105		
48	57	38	53	41	53	41	1'-6"	0.109	(0.109)	(0.109)	0.135	0.060	0.109	0.079	0.079	0.135	0.060	0.109	0.079	(0.109)	0.135	0.060	0.109	0.079	(0.109)
54	64	43	60	46	60	46	1'-6"	0.109	(0.109)	0.109	0.164	(0.075)	0.109	0.079	0.079	0.164	0.060	0.109	(0.109)	0.109	0.164	0.060	0.109	(0.109)	0.109
60	71	47	66	51	66	51	1'-6"	0.138	(0.109)	0.109	0.164	(0.075)	0.138	0.079	(0.109)	0.164	0.060	0.138	(0.109)	0.109	0.164	(0.075)	0.138	(0.109)	0.109
66	77	52	73	55	73	55	1'-6"	0.168	(0.109)	0.109		0.075	0.168	0.079	(0.109)		0.075	0.168	(0.109)	0.109		0.075	(0.109)	0.109	0.075
72	83	57	81	59	81	59	1'-6"	0.168	(0.109)	0.109		0.105	0.168	0.079	(0.109)		0.105	0.168	(0.109)	0.109		0.105	(0.109)	0.109	0.105
78			87	63	87	63	1'-6"		0.109	0.109		0.105		(0.109)	0.109		0.105		(0.109)	0.109		0.105		(0.109)	0.109
84			95	67	95	67	1'-6"		0.109	0.109		0.105		(0.109)	0.109		0.105		(0.109)	0.109		0.105		(0.109)	0.109
90			103	71	103	71	1'-6"		0.109	0.109		0.135		(0.109)	0.109		0.135		(0.109)	0.109		0.135		(0.109)	0.109
96			112	75	112	75	1'-6"		0.109	(0.138)		0.164		0.109	0.109		0.164		0.109	(0.138)		0.164		0.109	(0.138)
102			117	79	117	79	1'-6"		0.109	(0.138)		0.164		0.109	0.109		0.164		0.109	(0.138)		0.164		0.109	(0.138)
108			128	83	128	83	1'-6"		0.138	0.138				0.138	0.138				0.138	0.138				0.138	0.138
114			137	87	137	87	1'-6"		0.138	0.138				0.138	0.138				0.138	0.138				0.138	0.138
120			142	91	142	91	1'-6"		0.168	0.168				0.168	0.168				0.168	0.168				0.168	0.168

Notes:

\* Aluminized Type 2 Steel or Precoated Galvanized Steel shall be required for steel spans up to 42" according to Article 1006.01.

Thicknesses are based on longitudinal riveted seam fabrication, values in "( )" can be reduced by one gage thickness if helical seam fabrication is utilized.

The Type 1 corrugated steel or aluminum pipe arches shall be placed on soil having a minimum bearing capacity of 3 tons per square foot.

The Type 2 and 3 corrugated steel or aluminum pipe arches shall be placed on soil having a minimum bearing capacity of 2 tons per square foot.

This minimum bearing capacity will be determined by the Engineer in the field.

Table IIA: THICKNESS FOR CORRUGATED STEEL PIPE ARCHES AND CORRUGATED ALUMINUM ALLOY PIPE ARCHES  
 FOR THE RESPECTIVE EQUIVALENT ROUND SIZE OF PIPE AND FILL HEIGHTS OVER THE TOP OF PIPE  
 (Metric)

Equivalent Round Size (mm)	Corrugated Steel & Aluminum Pipe Arch 68 x 13 mm		Corrugated Steel & Aluminum Pipe Arch 75 x 25 mm		Corrugated Steel Pipe Arch 125 x 25 mm		Min. Cover	Type 1			Type 2			Type 3								
	Span Rise (mm)* (mm)		Span Rise (mm) (mm)		Span Rise (mm) (mm)			Fill Height:  1 m and less			Fill Height:  Greater than 1 m not exceeding 3 m			Fill Height:  Greater than 3 m not exceeding 4.5 m								
	Steel & Aluminum	Steel		Aluminum		Steel		Aluminum		Steel		Aluminum		Steel		Aluminum						
		68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm		68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm	125 x 25 mm	68 x 13 mm	75 x 25 mm				
375	430	330					0.5 m	1.63			1.52			1.63			1.52					
450	530	380					0.5 m	1.63			1.52			1.63			1.52					
525	610	460					0.5 m	1.63			(1.91)			1.63			1.52					
600	710	510					0.5 m	(2.01)			(2.67)			1.63			1.91					
750	870	630					0.5 m	(2.01)			(2.67)			1.63			1.91		(2.67)			
900	1060	740					0.5 m	(2.01)			2.67			1.63			2.67		2.67			
1050	1240	840					0.5 m	2.77			2.67		(2.77)	2.67		(2.77)	2.67		2.67			
1200	1440	970	1340	1050	1340	1050	0.5 m	2.77	(2.77)	(2.77)	3.43	1.52	2.77	2.01	2.01	3.43	1.52	2.77	2.01	(2.77)	3.43	1.52
1350	1620	1100	1520	1170	1520	1170	0.5 m	2.77	(2.77)	2.77	4.17	(1.91)	2.77	2.01	2.01	4.17	1.52	2.77	(2.77)	2.77	4.17	(1.91)
1500	1800	1200	1670	1300	1670	1300	0.5 m	3.51	(2.77)	2.77	4.17	(1.91)	3.51	2.01	(2.77)	4.17	1.52	3.51	(2.77)	2.77	4.17	(1.91)
1650	1950	1320	1850	1400	1850	1400	0.5 m	4.27	(2.77)	2.77		1.91	4.27	2.01	(2.77)		1.91	4.27	(2.77)	2.77		1.91
1800	2100	1450	2050	1500	2050	1500	0.5 m	4.27	(2.77)	2.77		2.67	4.27	2.01	(2.77)		2.67	4.27	(2.77)	2.77		2.67
1950			2200	1620	2200	1620	0.5 m		2.77	2.77		2.67		(2.77)	2.77		2.67		2.77	2.77		2.67
2100			2400	1720	2400	1720	0.5 m		2.77	2.77		2.67		(2.77)	2.77		2.67		2.77	2.77		2.67
2250			2600	1820	2600	1820	0.5 m		2.77	2.77		3.43		(2.77)	2.77		3.43		2.77	2.77		3.43
2400			2840	1920	2840	1920	0.5 m		2.77	(3.51)		4.17		2.77	2.77		4.17		2.77	(3.51)		4.17
2550			2970	2020	2970	2020	0.5 m		2.77	(3.51)		4.17		2.77	2.77		4.17		2.77	(3.51)		4.17
2700			3240	2120	3240	2120	0.5 m		3.51	3.51				3.51	3.51				3.51	3.51		
2850			3470	2220	3470	2220	0.5 m		3.51	3.51				3.51	3.51				3.51	3.51		
3000			3600	2320	3600	2320	0.5 m		4.27	4.27				4.27	4.27				4.27	4.27		

Notes:

\* Aluminized Type 2 Steel or Precoated Galvanized Steel shall be required for steel spans up to 1060 mm according to Article 1006.01.

Thicknesses are based on longitudinal riveted seam fabrication, values in "( )" can be reduced by one gage thickness if helical seam fabrication is utilized.

The Type 1 corrugated steel or aluminum pipe arches shall be placed on soil having a minimum bearing capacity of 290 kN per square meter.

The Type 2 and 3 corrugated steel or aluminum pipe arches shall be placed on soil having a minimum bearing capacity of 192 kN per square meter.

This minimum bearing capacity will be determined by the Engineer in the field.

Table IIB: CLASSES OF REINFORCED CONCRETE ELLIPTICAL AND REINFORCED CONCRETE ARCH PIPE FOR THE RESPECTIVE EQUIVALENT ROUND SIZE OF PIPE AND FILL HEIGHTS OVER THE TOP OF PIPE											
Equivalent Round Size (in.)	Reinforced Concrete Elliptical pipe (in.)		Reinforced Concrete Arch pipe (in.)		Minimum Cover	Type 1		Type 2		Type 3	
	Span	Rise	Span	Rise	RCCP HE & A	Fill Height: 3' and less		Fill Height: Greater than 3' not exceeding 10'		Fill Height: Greater than 10' not exceeding 15'	
						HE	Arch	HE	Arch	HE	Arch
15	23	14	18	11	1' -0"	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
18	23	14	22	13 1/2	1' -0"	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
21	30	19	26	15 1/2	1' -0"	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
24	30	19	28 1/2	18	1' -0"	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
27	34	22	36 1/4	22 1/2	1' -0"	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
30	38	24	36 1/4	22 1/2	1' -0"	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
36	45	29	43 3/4	26 5/8	1' -0"	HE-II	A-II	HE-III	A-III	HE-IV	A-IV
42	53	34	51 1/8	31 5/16	1' -0"	HE-I	A-II	HE-III	A-III	HE-IV	A-IV
48	60	38	58 1/2	36	1' -0"	HE-I	A-II	HE-III	A-III	1460	1450
54	68	43	65	40	1' -0"	HE-I	A-II	HE-III	A-III	1460	1460
60	76	48	73	45	1' -0"	HE-I	A-II	HE-III	A-III	1460	1470
66	83	53	88	54	1' -0"	HE-I	A-II	HE-III	A-III	1470	1480
72	91	58	88	54	1' -0"	HE-I	A-II	HE-III	A-III	1470	1480

Notes:

A number indicates the D-Load for the diameter and depth of fill and that a special design is required.

Design assumptions; Water filled pipe, AASHTO Type 2 installation per AASHTO LRFD Table 12.10.2.1-1

Table IIB: CLASSES OF REINFORCED CONCRETE ELLIPTICAL AND REINFORCED CONCRETE ARCH PIPE FOR THE RESPECTIVE EQUIVALENT ROUND SIZE OF PIPE AND FILL HEIGHTS OVER THE TOP OF PIPE (Metric)											
Equivalent Round Size (mm)	Reinforced Concrete Elliptical pipe (mm)		Reinforced Concrete Arch pipe (mm)		Minimum Cover RCCP HE & A	Type 1		Type 2		Type 3	
	Span	Rise	Span	Rise		Fill Height: 1 m and less		Fill Height: Greater than 1 m not exceeding 3 m		Fill Height: Greater than 3 m not exceeding 4.5 m	
					HE	Arch	HE	Arch	HE	Arch	
375	584	356	457	279	0.3 m	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
450	584	356	559	343	0.3 m	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
525	762	483	660	394	0.3 m	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
600	762	483	724	457	0.3 m	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
686	864	559	921	572	0.3 m	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
750	965	610	921	572	0.3 m	HE-III	A-III	HE-III	A-III	HE-IV	A-IV
900	1143	737	1111	676	0.3 m	HE-II	A-II	HE-III	A-III	HE-IV	A-IV
1050	1346	864	1299	795	0.3 m	HE-I	A-II	HE-III	A-III	HE-IV	A-IV
1200	1524	965	1486	914	0.3 m	HE-I	A-II	HE-III	A-III	70	70
1350	1727	1092	1651	1016	0.3 m	HE-I	A-II	HE-III	A-III	70	70
1500	1930	1219	1854	1143	0.3 m	HE-I	A-II	HE-III	A-III	70	70
1676	2108	1346	2235	1372	0.3 m	HE-I	A-II	HE-III	A-III	70	70
1800	2311	1473	2235	1372	0.3 m	HE-I	A-II	HE-III	A-III	70	70

Notes:

A number indicates the D-Load for the diameter and depth of fill and that a special design is required.  
 Design assumptions; Water filled pipe, AASHTO Type 2 installation per AASHTO LRFD Table 12.10.2.1-1

TABLE IIIA: PLASTIC PIPE PERMITTED  
 FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE

Nominal Diameter (in.)	Type 1 Fill Height: 3' and less, with 1' min					Type 2 Fill Height: Greater than 3', not exceeding 10'					Type 3 Fill Height: Greater than 10', not exceeding 15'					Type 4 Fill Height: Greater than 15', not exceeding 20'			
	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPP
	10	X	X	X	X	NA	X	X	X	X	NA	X	X	X	X	NA	X	X	X
12	X	X	X	X	X	X	X	X	X	X	X	X	X	NA	X	X	X	X	NA
15	X	X	NA	X	X	X	X	NA	X	X	X	X	NA	NA	X	X	X	NA	X
18	X	X	X	X	X	X	X	X	X	X	X	X	X	NA	X	X	X	X	NA
21	X	X	NA	NA	NA	X	X	NA	NA	NA	X	X	NA	NA	NA	X	X	NA	NA
24	X	X	X	X	X	X	X	X	X	X	X	X	NA	NA	NA	X	X	X	NA
30	X	X	X	X	X	X	X	X	X	X	X	X	X	NA	X	X	X	X	NA
36	X	X	X	X	X	X	X	X	X	X	X	X	X	NA	NA	X	X	X	NA
42	X	NA	X	X	NA	X	NA	X	NA	NA	X	NA	X	NA	NA	X	NA	X	NA
48	X	NA	X	X	X	X	NA	X	NA	NA	X	NA	X	NA	NA	X	NA	X	NA

Notes:

- PVC Polyvinyl Chloride (PVC) pipe with a smooth interior
- CPVC Corrugated Polyvinyl Chloride (CPVC) pipe with a smooth interior
- PE Polyethylene (PE) pipe with a smooth interior
- CPE Corrugated Polyethylene (PE) pipe with a smooth interior
- CPP Corrugated Polypropylene (CPP) pipe with a smooth interior
- X This material may be used for the given pipe diameter and fill height
- NA Not Available

TABLE IIIA: PLASTIC PIPE PERMITTED  
 FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE  
 (Metric)

Nominal Diameter (mm)	Type 1					Type 2					Type 3					Type 4			
	Fill Height: 1 m and less, with 0.3 m min. cover					Fill Height: Greater than 1 m, not exceeding 3 m					Fill Height: Greater than 3 m, not exceeding 4.5 m					Fill Height: Greater than 4.5 m, not exceeding 6 m			
	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPP
250	X	X	X	X	NA	X	X	X	X	NA	X	X	X	X	NA	X	X	X	NA
300	X	X	X	X	X	X	X	X	X	X	X	X	X	NA	X	X	X	X	NA
375	X	X	NA	X	X	X	X	NA	X	X	X	X	NA	NA	X	X	X	NA	X
450	X	X	X	X	X	X	X	X	X	X	X	X	X	NA	X	X	X	X	NA
525	X	X	NA	NA	NA	X	X	NA	NA	NA	X	X	NA	NA	NA	X	X	NA	NA
600	X	X	X	X	X	X	X	X	X	X	X	X	NA	NA	NA	X	X	X	NA
750	X	X	X	X	X	X	X	X	X	X	X	X	X	NA	X	X	X	X	NA
900	X	X	X	X	X	X	X	X	X	X	X	X	X	NA	NA	X	X	X	NA
1000	X	NA	X	X	NA	X	NA	X	NA	NA	X	NA	X	NA	NA	X	NA	X	NA
1200	X	NA	X	X	X	X	NA	X	NA	NA	X	NA	X	NA	NA	X	NA	X	NA

Notes:

- PVC Polyvinyl Chloride (PVC) pipe with a smooth interior
- CPVC Corrugated Polyvinyl Chloride (CPVC) pipe with a smooth interior
- PE Polyethylene (PE) pipe with a smooth interior
- CPE Corrugated Polyethylene (PE) pipe with a smooth interior
- CPP Corrugated Polypropylene (CPP) pipe with a smooth interior
- X This material may be used for the given pipe diameter and fill height
- NA Not Available

TABLE IIIB: PLASTIC PIPE PERMITTED								
FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE								
Nominal Diameter (in.)	Type 5			Type 6			Type 7	
	Fill Height: Greater than 20', not exceeding 25'			Fill Height: Greater than 25', not exceeding 30'			Fill Height: Greater than 30', not exceeding 35'	
	PVC	CPVC		PVC	CPVC		CPVC	
10	X	X		X	X		X	
12	X	X		X	X		X	
15	X	X		X	X		X	
18	X	X		X	X		X	
21	X	X		X	X		X	
24	X	X		X	X		X	
30	X	X		X	X		X	
36	X	X		X	X		X	
42	X	NA		X	NA		NA	
48	X	NA		X	NA		NA	

Notes:

- PVC Polyvinyl Chloride (PVC) pipe with a smooth interior
- CPVC Corrugated Polyvinyl Chloride (CPVC) pipe with a smooth interior
- X This material may be used for the given pipe diameter and fill height
- NA Not Available



TABLE IIIB: PLASTIC PIPE PERMITTED FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE (metric)								
Nominal Diameter (mm)	Type 5			Type 6			Type 7	
	Fill Height: Greater than 6 m, not exceeding 7.5 m			Fill Height: Greater than 7.5 m, not exceeding 9 m			Fill Height: Greater than 9 m, not exceeding 10.5 m	
	PVC	CPVC		PVC	CPVC		CPVC	
250	X	X		X	X		X	
300	X	X		X	X		X	
375	X	X		X	X		X	
450	X	X		X	X		X	
525	X	X		X	X		X	
600	X	X		X	X		X	
750	X	X		X	X		X	
900	X	X		X	X		X	
1000	X	NA		X	NA		NA	
1200	X	NA		X	NA		NA	

Notes:

- PVC Polyvinyl Chloride (PVC) pipe with a smooth interior
- CPVC Corrugated Polyvinyl Chloride (CPVC) pipe with a smooth interior
- PE Polyethylene (PE) pipe with a smooth interior
- X This material may be used for the given pipe diameter and fill height
- NA Not Available

Revise the first sentence of the first paragraph of Article 542.04(c) of the Standard Specifications to read:

“Compacted aggregate, at least 4 in. (100 mm) in depth below the pipe culvert, shall be placed the entire width of the trench and for the length of the pipe culvert, except compacted impervious material shall be used for the outer 3 ft (1 m) at each end of the pipe culvert.”

Revise the seventh paragraph of Article 542.04(d) of the Standard Specifications to read:

“PVC, PE and CPP pipes shall be joined according to the manufacturer’s specifications.”

Replace the third sentence of the first paragraph of Article 542.04(h) of the Standard Specifications with the following:

“The total cover required for various construction loadings shall be the responsibility of the Contractor.”

Delete “Table IV : Wheel Loads and Total Cover” in Article 542.04(h) of the Standard Specifications.

Revise the first and second paragraphs of Article 542.04(i) of the Standard Specifications to read:

“(i) Deflection Testing for Pipe Culverts. All PE, PVC and CPP pipe culverts shall be tested for deflection not less than 30 days after the pipe is installed and the backfill compacted. The testing shall be performed in the presence of the Engineer.

For PVC, PE, and CPP pipe culverts with diameters 24 in. (600 mm) or smaller, a mandrel drag shall be used for deflection testing. For PVC, PE, and CPP pipe culverts with diameters over 24 in. (600 mm), deflection measurements other than by a mandrel shall be used.”

Revise Articles 542.04(i)(1) and (2) of the Standard Specifications to read:

“(1) For all PVC pipe: as defined using ASTM D 3034 methodology.

(2) For all PE and CPP pipe: the average inside diameter based on the minimum and maximum tolerances specified in the corresponding ASTM or AASHTO material specifications.”

Revise the second sentence of the second paragraph of Article 542.07 of the Standard Specifications to read:

“When a prefabricated end section is used, it shall be of the same material as the pipe culvert, except for polyethylene (PE), polyvinylchloride (PVC), and polypropylene (PP) pipes which shall have metal end sections.”

Revise the first paragraph of Article 1040.03 of the Standard Specifications to read:

**“1040.03 Polyvinyl Chloride (PVC) Pipe.** Acceptance testing of PVC pipe and fittings shall be accomplished during the same construction season in which they are installed. The section properties shall be according to the manufacturer pre-submitted geometric properties on file with the Department. The manufacturer shall submit written certification that the material meets those properties. The pipe shall meet the following additional requirements.”

Delete Articles 1040.03(e) and (f) of the Standard Specifications.

Revise Articles 1040.04(c) and (d) of the Standard Specifications to read:

“(c) PE Profile Wall Pipe for Insertion Lining. The pipe shall be according to ASTM F 894. When used for insertion lining of pipe culverts, the pipe liner shall have a minimum pipe stiffness of 46 psi (317 kPa) at five percent deflection for nominal inside diameters of 42 in. (1050 mm) or less. For nominal inside diameters of greater than 42 in. (1050 mm), the pipe liner shall have a minimum pipe stiffness of 32.5 psi (225 kPa) at five percent deflection. All sizes shall have wall construction that presents essentially smooth internal and external surfaces.

(d) PE Pipe with a Smooth Interior. The pipe shall be according to ASTM F 714 (DR 32.5) with a minimum cell classification of PE 335434 as defined in ASTM D 3350. The section properties shall be according to the manufacturer pre-submitted geometric properties on file with the Department. The manufacturer shall submit written certification that the material meets those properties and the resin used to manufacture the pipe meets or exceeds the minimum cell classification requirements.”

Add the following to Section 1040 of the Standard Specifications:

**“1040.08 Polypropylene (PP) Pipe.** Storage and handling shall be according to the manufacturer's recommendations, except in no case shall the pipe be exposed to direct sunlight for more than six months. Acceptance testing of the pipe shall be accomplished during the same construction season in which it is installed. The section properties shall be according to the manufacturer pre-submitted geometric properties on file with the Department. The manufacturer shall submit written certification that the material meets those properties. The pipe shall meet the following additional requirements.

(a) Corrugated PP Pipe with a Smooth Interior. The pipe shall be according to AAHSTO M 330 (nominal size – 12 to 60 in. (300 to 1500 mm)). The pipe shall be Type S or D.

(b) Perforated Corrugated PP Pipe with A Smooth Interior. The pipe shall be according to AASHTO M 330 (nominal size – 12 to 60 in. (300 to 1500 mm)). The pipe shall be Type SP. In addition, the top centerline of the pipe shall be marked so that it is readily visible from the top of the trench before backfilling, and the upper ends of the slot perforations shall be a minimum of ten degrees below the horizontal.”

**LRFD STORM SEWER BURIAL TABLES (BDE)**

Effective: November 1, 2013

Revised: April 1, 2015

Revise Article 550.02 of the Standard Specifications to read as follows:

“Item	Article Section
(a) Clay Sewer Pipe .....	1040.02
(b) Extra Strength Clay Pipe .....	1040.02
(c) Concrete Sewer, Storm Drain, and Culvert Pipe .....	1042
(d) Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe .....	1042
(e) Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe (Note 1) .....	1042
(f) Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe (Note 1) .....	1042
(g) Polyvinyl Chloride (PVC) Pipe .....	1040.03
(h) Corrugated Polyvinyl Chloride (PVC) Pipe with a Smooth Interior .....	1040.03
(i) Corrugated Polypropylene (CPP) Pipe with Smooth Interior .....	1040.08
(j) Rubber Gaskets and Preformed Flexible Joint Sealants for Concrete Pipe .....	1056
(k) Mastic Joint Sealer for Pipe .....	1055
(l) External Sealing Band .....	1057
(m) Fine Aggregate (Note 2) .....	1003.04
(n) Coarse Aggregate (Note 3) .....	1004.05
(o) Reinforcement Bars and Welded Wire Fabric .....	1006.10
(p) Handling Hole Plugs .....	1042.16
(q) Polyethylene (PE) Pipe with a Smooth Interior .....	1040.04
(r) Corrugated Polyethylene (PE) Pipe with a Smooth Interior .....	1040.04

Note 1. The class of elliptical and arch pipe used for various storm sewer sizes and heights of fill shall conform to the requirements for circular pipe.

Note 2. The fine aggregate shall be moist.

Note 3. The coarse aggregate shall be wet.”

Revise the table for permitted materials in Article 550.03 of the Standard Specifications as follows:

"Class	Materials
A	Rigid Pipes: Clay Sewer Pipe Extra Strength Clay Pipe Concrete Sewer, Storm Drain, and Culvert Pipe Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe
B	Rigid Pipes: Clay Sewer Pipe Extra Strength Clay Pipe Concrete Sewer, Storm Drain, and Culvert Pipe Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe Flexible Pipes: Polyvinyl Chloride (PVC) Pipe Corrugated Polyvinyl Chloride Pipe (PVC) with a Smooth Interior Polyethylene (PE) Pipe with a Smooth Interior Corrugated Polyethylene (PE) Pipe with a Smooth Interior Corrugated Polypropylene (CPP) Pipe with a Smooth Interior"

Replace the storm sewers tables in Article 550.03 of the Standard Specifications with the following:

STORM SEWERS KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE																
Nominal Diameter in.	Type 1								Type 2							
	Fill Height: 3' and less With 1' minimum cover								Fill Height: Greater than 3' not exceeding 10'							
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP
10	NA	3	X	X	X	X	X	NA	NA	1	*X	X	X	X	X	NA
12	IV	NA	X	X	X	X	X	X	II	1	*X	X	X	X	X	X
15	IV	NA	NA	X	X	NA	X	X	II	1	*X	X	X	NA	X	X
18	IV	NA	NA	X	X	X	X	X	II	2	X	X	X	X	X	X
21	III	NA	NA	X	X	NA	NA	NA	II	2	X	X	X	NA	NA	NA
24	III	NA	NA	X	X	X	X	X	II	2	X	X	X	X	X	X
27	III	NA	NA	NA	NA	NA	NA	NA	II	3	X	NA	NA	NA	NA	NA
30	IV	NA	NA	X	X	X	X	X	II	3	X	X	X	X	X	X
33	III	NA	NA	NA	NA	NA	NA	NA	II	NA	X	NA	NA	NA	NA	NA
36	III	NA	NA	X	X	X	X	X	II	NA	X	X	X	X	X	X
42	II	NA	X	X	NA	X	X	NA	II	NA	X	X	NA	X	NA	NA
48	II	NA	X	X	NA	X	X	X	II	NA	X	X	NA	X	NA	NA
54	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
60	II	NA	NA	NA	NA	NA	NA	X	II	NA	NA	NA	NA	NA	NA	X
66	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
72	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
78	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
84	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
90	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
96	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA
102	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA
108	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA

- RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
- CSP Concrete Sewer, Storm drain, and Culvert Pipe
- PVC Polyvinyl Chloride Pipe
- CPVC Corrugated Polyvinyl Chloride Pipe
- ESCP Extra Strength Clay Pipe
- PE Polyethylene Pipe with a Smooth Interior
- CPE Corrugated Polyethylene Pipe with a Smooth Interior
- CPP Corrugated Polypropylene pipe with a Smooth Interior
- X This material may be used for the given pipe diameter and fill height.
- NA This material is Not Acceptable for the given pipe diameter and fill height.
- \* May also use Standard Strength Clay Pipe

STORM SEWERS (Metric)																
KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED																
FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE																
Nominal Diameter in.	Type 1								Type 2							
	Fill Height: 1 m and less With 300 mm minimum cover								Fill Height: Greater than 1 m not exceeding 3 m							
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP
250	NA	3	X	X	X	X	X	NA	NA	1	*X	X	X	X	X	NA
300	IV	NA	X	X	X	X	X	X	II	1	*X	X	X	X	X	X
375	IV	NA	NA	X	X	NA	X	X	II	1	*X	X	X	NA	X	X
450	IV	NA	NA	X	X	X	X	X	II	2	X	X	X	X	X	X
525	III	NA	NA	X	X	NA	NA	NA	II	2	X	X	X	NA	NA	NA
600	III	NA	NA	X	X	X	X	X	II	2	X	X	X	X	X	X
675	III	NA	NA	NA	NA	NA	NA	NA	II	3	X	NA	NA	NA	NA	NA
750	IV	NA	NA	X	X	X	X	X	II	3	X	X	X	X	X	X
825	III	NA	NA	NA	NA	NA	NA	NA	II	NA	X	NA	NA	NA	NA	NA
900	III	NA	NA	X	X	X	X	X	II	NA	X	X	X	X	X	X
1050	II	NA	X	X	NA	X	X	NA	II	NA	X	X	NA	X	NA	NA
1200	II	NA	X	X	NA	X	X	X	II	NA	X	X	NA	X	NA	NA
1350	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
1500	II	NA	NA	NA	NA	NA	NA	X	II	NA	NA	NA	NA	NA	NA	X
1650	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
1800	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
1950	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
2100	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
2250	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
2400	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA
2550	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA
2700	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA

- RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
- CSP Concrete Sewer, Storm drain, and Culvert Pipe
- PVC Polyvinyl Chloride Pipe
- CPVC Corrugated Polyvinyl Chloride Pipe
- ESCP Extra Strength Clay Pipe
- PE Polyethylene Pipe with a Smooth Interior
- CPE Corrugated Polyethylene Pipe with a Smooth Interior
- CPP Corrugated Polypropylene pipe with a Smooth Interior
- X This material may be used for the given pipe diameter and fill height.
- NA This material is Not Acceptable for the given pipe diameter and fill height.
- \* May also use Standard Strength Clay Pipe

STORM SEWERS KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE															
Nominal Diameter in.	Type 3								Type 4						
	Fill Height: Greater than 10' not exceeding 15'								Fill Height: Greater than 15' not exceeding 20'						
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPP
10	NA	2	X	X	X	X	X	NA	NA	3	X	X	X	X	NA
12	III	2	X	X	X	X	NA	X	IV	NA	NA	X	X	X	NA
15	III	3	X	X	X	NA	NA	X	IV	NA	NA	X	X	NA	X
18	III	NA	X	X	X	X	NA	X	IV	NA	NA	X	X	X	NA
21	III	NA	NA	X	X	NA	NA	NA	IV	NA	NA	X	X	NA	NA
24	III	NA	NA	X	X	X	NA	NA	IV	NA	NA	X	X	X	NA
27	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
30	III	NA	NA	X	X	X	NA	X	IV	NA	NA	X	X	X	NA
33	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
36	III	NA	NA	X	X	X	NA	NA	IV	NA	NA	X	X	X	NA
42	III	NA	NA	X	NA	X	NA	NA	IV	NA	NA	X	NA	X	NA
48	III	NA	NA	X	NA	X	NA	NA	IV	NA	NA	X	NA	X	NA
54	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
60	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
66	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
72	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
78	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
84	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
90	III	NA	NA	NA	NA	NA	NA	NA	1680	NA	NA	NA	NA	NA	NA
96	III	NA	NA	NA	NA	NA	NA	NA	1690	NA	NA	NA	NA	NA	NA
102	III	NA	NA	NA	NA	NA	NA	NA	1700	NA	NA	NA	NA	NA	NA
108	1360	NA	NA	NA	NA	NA	NA	NA	1710	NA	NA	NA	NA	NA	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe

CSP Concrete Sewer, Storm drain, and Culvert Pipe

PVC Polyvinyl Chloride Pipe

CPVC Corrugated Polyvinyl Chloride Pipe

ESCP Extra Strength Clay Pipe

PE Polyethylene Pipe with a Smooth Interior

CPE Corrugated Polyethylene Pipe with a Smooth Interior

CPP Corrugated Polypropylene pipe with a Smooth Interior

X This material may be used for the given pipe diameter and fill height.

NA This material is Not Acceptable for the given pipe diameter and fill height.

\* May also use Standard Strength Clay Pipe

Note RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the D-load to produce a 0.01 in crack.



STORM SEWERS (metric) KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE															
Nominal Diameter in.	Type 3								Type 4						
	Fill Height: Greater than 3 m not exceeding 4.5 m								Fill Height: Greater than 4.5 m not exceeding 6 m						
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPP
250	NA	2	X	X	X	X	X	NA	NA	3	X	X	X	X	NA
300	III	2	X	X	X	X	NA	X	IV	NA	NA	X	X	X	NA
375	III	3	X	X	X	NA	NA	X	IV	NA	NA	X	X	NA	X
450	III	NA	X	X	X	X	NA	X	IV	NA	NA	X	X	X	NA
525	III	NA	NA	X	X	NA	NA	NA	IV	NA	NA	X	X	NA	NA
600	III	NA	NA	X	X	X	NA	NA	IV	NA	NA	X	X	X	NA
675	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
750	III	NA	NA	X	X	X	NA	X	IV	NA	NA	X	X	X	NA
825	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
900	III	NA	NA	X	X	X	NA	NA	IV	NA	NA	X	X	X	NA
1050	III	NA	NA	X	NA	X	NA	NA	IV	NA	NA	X	NA	X	NA
1200	III	NA	NA	X	NA	X	NA	NA	IV	NA	NA	X	NA	X	NA
1350	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
1500	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
1650	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
1800	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
1950	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
2100	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA
2250	III	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA
2400	III	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA
2550	III	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA
2700	70	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe

CSP Concrete Sewer, Storm drain, and Culvert Pipe

PVC Polyvinyl Chloride Pipe

CPVC Corrugated Polyvinyl Chloride Pipe

ESCP Extra Strength Clay Pipe

PE Polyethylene Pipe with a Smooth Interior

CPE Corrugated Polyethylene Pipe with a Smooth Interior

CPP Corrugated Polypropylene pipe with a Smooth Interior

X This material may be used for the given pipe diameter and fill height.

NA This material is Not Acceptable for the given pipe diameter and fill height.

\* May also use Standard Strength Clay Pipe

Note RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the metric D-load to produce a 25.4 micro-meter crack.

STORM SEWERS KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE								
Nominal Diameter in.	Type 5			Type 6			Type 7	
	Fill Height: Greater than 20' not exceeding 25'			Fill Height: Greater than 25' not exceeding 30'			Fill Height: Greater than 30' not exceeding 35'	
	RCCP	PVC	CPVC	RCCP	PVC	CPVC	RCCP	CPVC
10	NA	X	X	NA	X	X	NA	X
12	IV	X	X	V	X	X	V	X
15	IV	X	X	V	X	X	V	X
18	IV	X	X	V	X	X	V	X
21	IV	X	X	V	X	X	V	X
24	IV	X	X	V	X	X	V	X
27	IV	NA	NA	V	NA	NA	V	NA
30	IV	X	X	V	X	X	V	X
33	IV	NA	NA	V	NA	NA	V	NA
36	IV	X	X	V	X	X	V	X
42	IV	X	NA	V	X	NA	V	NA
48	IV	X	NA	V	X	NA	V	NA
54	IV	NA	NA	V	NA	NA	V	NA
60	IV	NA	NA	V	NA	NA	V	NA
66	IV	NA	NA	V	NA	NA	V	NA
72	V	NA	NA	V	NA	NA	V	NA
78	2020	NA	NA	2370	NA	NA	2730	NA
84	2020	NA	NA	2380	NA	NA	2740	NA
90	2030	NA	NA	2390	NA	NA	2750	NA
96	2040	NA	NA	2400	NA	NA	2750	NA
102	2050	NA	NA	2410	NA	NA	2760	NA
108	2060	NA	NA	2410	NA	NA	2770	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe

PVC Polyvinyl Chloride Pipe

CPVC Corrugated Polyvinyl Chloride Pipe

ESCP Extra Strength Clay Pipe

X This material may be used for the given pipe diameter and fill height.

NA This material is Not Acceptable for the given pipe diameter and fill height.

Note RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the D-load to produce a 0.01 in crack.

STORM SEWERS (metric)								
KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED								
FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE								
Nominal Diameter in.	Type 5			Type 6			Type 7	
	Fill Height: Greater than 20' not exceeding 25'			Fill Height: Greater than 25' not exceeding 30'			Fill Height: Greater than 30' not exceeding 35'	
	RCCP	PVC	CPVC	RCCP	PVC	CPVC	RCCP	CPVC
250	NA	X	X	NA	X	X	NA	X
300	IV	X	X	V	X	X	V	X
375	IV	X	X	V	X	X	V	X
450	IV	X	X	V	X	X	V	X
525	IV	X	X	V	X	X	V	X
600	IV	X	X	V	X	X	V	X
675	IV	NA	NA	V	NA	NA	V	NA
750	IV	X	X	V	X	X	V	X
825	IV	NA	NA	V	NA	NA	V	NA
900	IV	X	X	V	X	X	V	X
1050	IV	X	NA	V	X	NA	V	NA
1200	IV	X	NA	V	X	NA	V	NA
1350	IV	NA	NA	V	NA	NA	V	NA
1500	IV	NA	NA	V	NA	NA	V	NA
1650	IV	NA	NA	V	NA	NA	V	NA
1800	V	NA	NA	V	NA	NA	V	NA
1950	100	NA	NA	110	NA	NA	130	NA
2100	100	NA	NA	110	NA	NA	130	NA
2250	100	NA	NA	110	NA	NA	130	NA
2400	100	NA	NA	120	NA	NA	130	NA
2550	100	NA	NA	120	NA	NA	130	NA
2700	100	NA	NA	120	NA	NA	130	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe

PVC Polyvinyl Chloride Pipe

CPVC Corrugated Polyvinyl Chloride Pipe

ESCP Extra Strength Clay Pipe

X This material may be used for the given pipe diameter and fill height.

NA This material is Not Acceptable for the given pipe diameter and fill height.

Note RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the metric D-load to produce a 25.4 micro-meter crack.

Revise the sixth paragraph of Article 550.06 of the Standard Specifications to read:

“PVC, PE and CPP pipes shall be joined according to the manufacturer’s specifications.”

Revise the first and second paragraphs of Article 550.08 of the Standard Specifications to read:

**“550.08 Deflection Testing for Storm Sewers.** All PVC, PE, and CPP storm sewers shall be tested for deflection not less than 30 days after the pipe is installed and the backfill compacted. The testing shall be performed in the presence of the Engineer.

For PVC, PE, and CPP storm sewers with diameters 24 in. (600 mm) or smaller, a mandrel drag shall be used for deflection testing. For PVC, PE, and CPP storm sewers with diameters over 24 in. (600 mm), deflection measurements other than by a mandrel shall be used.”

Revise the fifth paragraph of Article 550.08 to read as follows.

“The outside diameter of the mandrel shall be 95 percent of the base inside diameter. For all PVC pipe the base inside diameter shall be defined using ASTM D 3034 methodology. For all PE and CPP pipe, the base inside diameter shall be defined as the average inside diameter based on the minimum and maximum tolerances specified in the corresponding ASTM or AASHTO material specifications.”

Revise the first paragraph of Article 1040.03 of the Standard Specifications to read:

**“1040.03 Polyvinyl Chloride (PVC) Pipe.** Acceptance testing of PVC pipe and fittings shall be accomplished during the same construction season in which they are installed. The section properties shall be according to the manufacturer pre-submitted geometric properties on file with the Department. The manufacturer shall submit written certification that the material meets those properties. The pipe shall meet the following additional requirements.”

Delete Articles 1040.03(e) and (f) of the Standard Specifications.

Revise Articles 1040.04(c) and (d) of the Standard Specifications to read:

“(c) PE Profile Wall Pipe for Insertion Lining. The pipe shall be according to ASTM F 894. When used for insertion lining of pipe culverts, the pipe liner shall have a minimum pipe stiffness of 46 psi (317 kPa) at five percent deflection for nominal inside diameters of 42 in. (1050 mm) or less. For nominal inside diameters of greater than 42 in. (1050 mm), the pipe liner shall have a minimum pipe stiffness of 32.5 psi (225 kPa) at five percent deflection. All sizes shall have wall construction that presents essentially smooth internal and external surfaces.

(d) PE Pipe with a Smooth Interior. The pipe shall be according to ASTM F 714 (DR 32.5) with a minimum cell classification of PE 335434 as defined in ASTM D 3350. The section properties shall be according to the manufacturer pre-submitted geometric properties on file with the Department. The manufacturer shall submit written certification that the material meets those properties and the resin used to manufacture the pipe meets or exceeds the minimum cell classification requirements.”

Add the following to Section 1040 of the Standard Specifications:

**“1040.08 Polypropylene (PP) Pipe.** Storage and handling shall be according to the manufacturer's recommendations, except in no case shall the pipe be exposed to direct sunlight for more than six months. Acceptance testing of the pipe shall be accomplished during the same construction season in which it is installed. The section properties shall be according to the manufacturer pre-submitted geometric properties on file with the Department. The manufacturer shall submit written certification that the material meets those properties. The pipe shall meet the following additional requirements.

- (a) Corrugated PP Pipe with a Smooth Interior. The pipe shall be according to AAHSTO M 330 (nominal size – 12 to 60 in. (300 to 1500 mm)). The pipe shall be Type S or D.
- (b) Perforated Corrugated PP Pipe with A Smooth Interior. The pipe shall be according to AASHTO M 330 (nominal size – 12 to 60 in. (300 to 1500 mm)). The pipe shall be Type SP. In addition, the top centerline of the pipe shall be marked so that it is readily visible from the top of the trench before backfilling, and the upper ends of the slot perforations shall be a minimum of ten degrees below the horizontal.”

#### **PAVED SHOULDER REMOVAL (BDE)**

Effective: April 1, 2014

Revise the first paragraph of Article 440.07(b) of the Standard Specifications to read:

- “(b) Measured Quantities. Pavement removal, driveway pavement removal, and paved shoulder removal will be measured for payment in place and the area computed in square yards (square meters).”

Revise Article 440.07(c) of the Standard Specifications to read:

“(c) Adjustment of Quantities. The quantity of pavement removal and paved shoulder removal will be adjusted if their respective thickness varies more than 15 percent from that shown on the plans. The quantity will be either increased or decreased according to the following table.

% change of thickness	% change of quantity
0 to less than 15	0
15 to less than 20	10
20 to less than 30	15
30 to less than 50	20

If the thickness of the existing pavement varies by 50 percent or more from that shown on the plans, the character of the work will be considered significantly changed and an adjustment to the contract will be made according to Article 104.02.

When an adjustment is made for variations in pavement or shoulder thickness a resulting adjustment will also be made in the earthwork quantities when applicable.

No adjustment will be made for variations in the amount of reinforcement.”

**PAVEMENT PATCHING (BDE)**

Effective: January 1, 2010

Revise the first sentence of the second paragraph of Article 701.17(e)(1) of the Standard Specifications to read:

“In addition to the traffic control and protection shown elsewhere in the contract for pavement, two devices shall be placed immediately in front of each open patch, open hole, and broken pavement where temporary concrete barriers are not used to separate traffic from the work area.”

**PAVEMENT STRIPING - SYMBOLS (BDE)**

Effective: January 1, 2015

Revise the Symbol Table of Article 780.14 of the Supplemental Specifications to read:

“SYMBOLS

Symbol	Large Size sq ft (sq m)	Small Size sq ft (sq m)
Through Arrow	11.5 (1.07)	6.5 (0.60)
Left or Right Arrow	15.6 (1.47)	8.8 (0.82)
2 Arrow Combination Left (or Right) and Through	26.0 (2.42)	14.7 (1.37)
3 Arrow Combination Left, Right, and Through	38.4 (3.56)	20.9 (1.94)
Lane Drop Arrow	41.5 (3.86)	--
Wrong Way Arrow	24.3 (2.26)	--
Railroad "R" 6 ft (1.8 m)	3.6 (0.33)	--
Railroad "X" 20 ft (6.1 m)	54.0 (5.02)	--
International Symbol of Accessibility	3.1 (0.29)	--
Bike Symbol	4.7 (0.44)	--
Shared Lane Symbol	8.0 (0.74)	--“

**PORTLAND CEMENT CONCRETE BRIDGE DECK CURING (BDE)**

Effective: April 1, 2015

Replace the table in Article 1020.13 of the Supplemental Specifications with the following:

"INDEX TABLE OF CURING AND PROTECTION OF CONCRETE CONSTRUCTION			
TYPE OF CONSTRUCTION	CURING METHODS	CURING PERIOD DAYS	LOW AIR TEMPERATURE PROTECTION METHODS
Cast-in-Place Concrete <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>2/</sup>	3	1020.13(c)
Driveway Median Barrier Curb Gutter Curb & Gutter Sidewalk Slope Wall Paved Ditch	1020.13(a)(1)(2)(3)(4)(5) <sup>4/ 5/</sup>	3	1020.13(c) <sup>16/</sup>
Catch Basin Manhole Inlet Valve Vault	1020.13(a)(1)(2)(3)(4)(5) <sup>4/</sup>	3	1020.13(c)
Pavement Patching	1020.13(a)(1)(2)(3)(4)(5) <sup>2/</sup>	3 <sup>12/</sup>	1020.13(c)
Bridge Deck Patching	1020.13(a)(3)(5)	3 or 7 <sup>12/</sup>	1020.13(c)
Railroad Crossing	1020.13(a)(3)(5)	1	1020.13(c)
Piles and Drilled Shafts	1020.13(a)(3)(5)	7	1020.13(d)(1)(2)(3)
Foundations & Footings Seal Coat	1020.13(a)(1)(2)(3)(4)(5) <sup>4/ 6/</sup>	7	1020.13(d)(1)(2)(3)
Substructure	1020.13(a)(1)(2)(3)(4)(5) <sup>1/ 7/</sup>	7	1020.13(d)(1)(2)(3)
Superstructure (except deck)	1020.13(a)(1)(2)(3)(5) <sup>8/</sup>	7	1020.13(d)(1)(2)
Deck Bridge Approach Slab	1020.13(a)(5)(6) <sup>19/</sup>	7	1020.13(d)(1)(2) <sup>17/</sup>
Retaining Walls	1020.13(a)(1)(2)(3)(4)(5) <sup>1/ 7/</sup>	7	1020.13(d)(1)(2)
Pump Houses	1020.13(a)(1)(2)(3)(4)(5) <sup>1/</sup>	7	1020.13(d)(1)(2)
Culverts	1020.13(a)(1)(2)(3)(4)(5) <sup>4/ 6/</sup>	7	1020.13(d)(1)(2) <sup>18/</sup>
Other Incidental Concrete	1020.13(a)(1)(2)(3)(5)	3	1020.13(c)



Precast Concrete <sup>11/</sup>			
Bridge Slabs Piles and Pile Caps Other Structural Members	1020.13(a)(3)(5) <sup>9/ 10/</sup>	As Required <sup>13/</sup>	9/
All Other Precast Items	1020.13(a)(3)(4)(5) <sup>2/ 9/ 10/</sup>	As Required <sup>14/</sup>	9/
Precast, Prestressed Concrete <sup>11/</sup>			
All Items	1020.13(a)(3)(5) <sup>9/ 10/</sup>	Until Strand Tensioning is Released <sup>15/</sup>	9/”

Add the following footnote to the end of the Index Table of Curing and Protection of Concrete Construction in Article 1020.13 of the Supplemental Specifications:

“19/ The cellulose polyethylene blanket method shall not be used on latex modified concrete.”

Add the following to Article 1020.13(a) of the Standard Specifications.

“(6) Cellulose Polyethylene Blanket Method. The cellulose polyethylene blanket shall consist of a white polyethylene sheeting with cellulose fiber backing. After the surface of concrete has been textured or finished, it shall be covered immediately with a cellulose polyethylene blanket. The blankets shall be installed with the white perforated polyethylene side facing up. Adjoining blankets shall overlap a minimum of 4 in. (100 mm). On pours wider than 20 ft (6 m), a foot bridge shall be used to place the blankets and to spray water on the blankets immediately after placement on the concrete surface. The blankets shall be placed in a manner which will not create indentations greater than 1/4 in. (6 mm) in the concrete surface. Any air bubbles trapped during placement shall be removed without tearing the blanket. The blankets shall then be immediately flooded with a gentle spray of water to ensure complete saturation of the cellulose. The overlaps and outside edges of the cellulose polyethylene blankets, as well as tears in the blanket, shall be weighted down to prevent displacement as needed with care taken not to indent the concrete surface. Soaker hoses shall be placed along the length of the bridge so 100 percent of the deck surface is continuously saturated for the duration of the cure. Damaged cellulose polyethylene blankets shall be repaired or replaced at the direction of the Engineer.”

Revise the first paragraph of Article 1022.03 of the Standard Specifications to read:

“**1022.03 Waterproof Paper Blankets, White Polyethylene Sheeting, Burlap-Polyethylene Blankets, and Cellulose Polyethylene Blankets.** These materials shall be white and according to ASTM C 171, except moisture loss test specimens shall be made according to Illinois Modified AASHTO T 155. Cellulose polyethylene blankets shall be limited to single use only. The cellulose polyethylene blankets shall be delivered to the jobsite unused and in the manufacturer's unopened packaging until ready for installation. Each roll shall be clearly labeled with product name, manufacturer, and manufacturer's certification of compliance with ASTM C 171.”

**PROGRESS PAYMENTS (BDE)**

Effective: November 2, 2013

Revise Article 109.07(a) of the Standard Specifications to read:

“(a) Progress Payments. At least once each month, the Engineer will make a written estimate of the quantity 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.

Progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics’ Lien Act, 770 ILCS 60/23(c).

If a Contractor or subcontractor has defaulted on a loan issued under the Department’s Disadvantaged Business Revolving Loan Program (20 ILCS 2705/2705-610), progress payments may be reduced pursuant to the terms of that loan agreement. In such cases, the amount of the estimate related to the work performed by the Contractor or subcontractor, in default of the loan agreement, will be offset, in whole or in part, and vouchered by the Department to the Working Capital Revolving Fund or designated escrow account. Payment for the work shall be considered as issued and received by the Contractor or subcontractor on the date of the offset voucher. Further, the amount of the offset voucher shall be a credit against the Department’s obligation to pay the Contractor, the Contractor’s obligation to pay the subcontractor, and the Contractor’s or subcontractor’s total loan indebtedness to the Department. The offset shall continue until such time as the entire loan indebtedness is satisfied. The Department will notify the Contractor and Fund Control Agent in a timely manner of such offset. The Contractor or subcontractor shall not be entitled to additional payment in consideration of the offset.

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.”

**RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (BDE)**

Effective: November 1, 2012

Revise: January 2, 2015

Revise Section 1031 of the Standard Specifications to read:

**“SECTION 1031. RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES**

**1031.01 Description.** Reclaimed asphalt pavement and reclaimed asphalt shingles shall be according to the following.

- (a) Reclaimed Asphalt Pavement (RAP). RAP is the material produced by cold milling or crushing an existing hot-mix asphalt (HMA) pavement. The Contractor shall supply written documentation that the RAP originated from routes or airfields under federal, state, or local agency jurisdiction.
- (b) Reclaimed Asphalt Shingles (RAS). Reclaimed asphalt shingles (RAS). RAS is from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material, as defined in Bureau of Materials and Physical Research Policy Memorandum “Reclaimed Asphalt Shingle (RAS) Sources”, by weight of RAS. All RAS used shall come from a Bureau of Materials and Physical Research approved processing facility where it shall be ground and processed to 100 percent passing the 3/8 in. (9.5 mm) sieve and 93 percent passing the #4 (4.75 mm) sieve based on a dry shake gradation. RAS shall be uniform in gradation and asphalt binder content and shall meet the testing requirements specified herein. In addition, RAS shall meet the following Type 1 or Type 2 requirements.
  - (1) Type 1. Type 1 RAS shall be processed, preconsumer asphalt shingles salvaged from the manufacture of residential asphalt roofing shingles.
  - (2) Type 2. Type 2 RAS shall be processed post-consumer shingles only, salvaged from residential, or four unit or less dwellings not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP).

**1031.02 Stockpiles.** RAP and RAS stockpiles shall be according to the following.

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

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

- (1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures. The coarse aggregate in FRAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least C quality. All FRAP shall be fractionated prior to testing by screening into a minimum of two size fractions with the separation occurring on or between the #4 (4.75 mm) and 1/2 in. (12.5 mm) sieves. Agglomerations shall be minimized such that 100 percent of the RAP shall pass the sieve size specified below for the mix into which the FRAP will be incorporated.

Mixture FRAP will be used in:	Sieve Size that 100% of FRAP Shall Pass
IL-25.0	2 in. (50 mm)
IL-19.0	1 1/2 in. (40 mm)
IL-12.5	1 in. (25 mm)
IL-9.5	3/4 in. (20 mm)
IL-4.75	1/2 in. (13 mm)

- (2) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures and represent: 1) the same aggregate quality, but shall be at least C quality; 2) the same type of crushed aggregate (either crushed natural aggregate, ACBF slag, or steel slag); 3) similar gradation; and 4) similar asphalt binder content. If approved by the Engineer, combined single pass surface/binder millings may be considered "homogenous" with a quality rating dictated by the lowest coarse aggregate quality present in the mixture.
- (3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate RAP shall be processed prior to testing by crushing to where all RAP shall pass the 5/8 in. (16 mm) or smaller screen. Conglomerate RAP stockpiles shall not contain steel slag.
- (4) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from Class I, HMA (High or Low ESAL), or "All Other" (as defined by Article 1030.04(a)(3)) mixtures. The coarse aggregate in this RAP may be crushed or round but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ RAP stockpiles shall not contain steel slag.
- (5) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

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

- (b) RAS Stockpiles. Type 1 and Type 2 RAS shall be stockpiled separately and shall not be intermingled. Each stockpile shall be signed indicating what type of RAS is present.

Unless otherwise specified by the Engineer, mechanically blending manufactured sand (FM 20 or FM 22) up to an equal weight of RAS with the processed RAS will be permitted to improve workability. The sand shall be "B Quality" or better from an approved Aggregate Gradation Control System source. The sand shall be accounted for in the mix design and during HMA production.

Records identifying the shingle processing facility supplying the RAS, RAS type and lot number shall be maintained by project contract number and kept for a minimum of three years.

**1031.03 Testing.** RAP/FRAP and RAS testing shall be according to the following.

- (a) RAP/FRAP Testing. When used in HMA, the RAP/FRAP shall be sampled and tested either during or after stockpiling.

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

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

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

- (b) RAS Testing. RAS or RAS blended with manufactured sand shall be sampled and tested during stockpiling according to Illinois Department of Transportation Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Source".

Samples shall be collected during stockpiling at the minimum frequency of one sample per 200 tons (180 metric tons) for the first 1000 tons (900 metric tons) and one sample per 250 tons (225 metric tons) thereafter. A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). Once a  $\leq 1000$  ton (900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS or RAS blended with manufactured sand shall be stockpiled in a separate working pile as designated in the Quality Control plan and only added to the sealed stockpile when the test results of the working pile are complete and are found to meet the tolerances specified herein for the original sealed RAS stockpile.

Before testing, each sample shall be split to obtain two test samples. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall perform a washed extraction and test for unacceptable materials on the other test sample according to Department procedures. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

If the sampling and testing was performed at the shingle processing facility in accordance with the QC Plan, the Contractor shall obtain and make available all of the test results from start of the initial stockpile.

**1031.04 Evaluation of Tests.** Evaluation of tests results shall be according to the following.

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

Parameter	FRAP/Homogeneous /Conglomerate	Conglomerate "D" Quality
1 in. (25 mm)		$\pm 5 \%$
1/2 in. (12.5 mm)	$\pm 8 \%$	$\pm 15 \%$
No. 4 (4.75 mm)	$\pm 6 \%$	$\pm 13 \%$
No. 8 (2.36 mm)	$\pm 5 \%$	
No. 16 (1.18 mm)		$\pm 15 \%$
No. 30 (600 $\mu\text{m}$ )	$\pm 5 \%$	
No. 200 (75 $\mu\text{m}$ )	$\pm 2.0 \%$	$\pm 4.0 \%$
Asphalt Binder	$\pm 0.4 \%$ <sup>1/</sup>	$\pm 0.5 \%$
$G_{mm}$	$\pm 0.03$	

1/ The tolerance for FRAP shall be  $\pm 0.3 \%$ .

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

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

- (b) Evaluation of RAS and RAS Blended with Manufactured Sand Test Results. All of the test results, with the exception of percent unacceptable materials, shall be compiled and averaged for asphalt binder content and gradation. Individual test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	RAS
No. 8 (2.36 mm)	± 5 %
No. 16 (1.18 mm)	± 5 %
No. 30 (600 µm)	± 4 %
No. 200 (75 µm)	± 2.0 %
Asphalt Binder Content	± 1.5 %

If more than 20 percent of the individual sieves and/or asphalt binder content tests are out of the above tolerances, or if the percent unacceptable material exceeds 0.5 percent by weight of material retained on the # 4 (4.75 mm) sieve, the RAS or RAS blend shall not be used in Department projects. All test data and acceptance ranges shall be sent to the District for evaluation.

### 1031.05 Quality Designation of Aggregate in RAP/FRAP.

- (a) RAP. The aggregate quality of the RAP for homogenous, conglomerate, and conglomerate "D" quality stockpiles shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.
- (1) RAP from Class I, Superpave/HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.
  - (2) RAP from Superpave/HMA (Low ESAL) IL-19.0L binder mixture is designated as Class D quality coarse aggregate.
  - (3) RAP from Class I, Superpave/HMA (High ESAL) binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate.
  - (4) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate.

- (b) FRAP. If the Engineer has documentation of the quality of the FRAP aggregate, the Contractor shall use the assigned quality provided by the Engineer.

If the quality is not known, the quality shall be determined as follows. Coarse and fine FRAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum tonnage of 5,000 tons (4,500 metric tons). The Contractor shall obtain a representative sample witnessed by the Engineer. The sample shall be a minimum of 50 lb (25 kg). The sample shall be extracted according to Illinois Modified AASHTO T 164 by a consultant prequalified by the Department for the specified testing. The consultant shall submit the test results along with the recovered aggregate to the District Office. The cost for this testing shall be paid by the Contractor. The District will forward the sample to the BMPR Aggregate Lab for MicroDeval Testing, according to Illinois Modified AASHTO T 327. A maximum loss of 15.0 percent will be applied for all HMA applications.

**1031.06 Use of RAP/FRAP and/or RAS in HMA.** The use of RAP/FRAP and/or RAS shall be a Contractor's option when constructing HMA in all contracts.

- (a) RAP/FRAP. The use of RAP/FRAP in HMA shall be as follows.

- (1) Coarse Aggregate Size. The coarse aggregate in all RAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.
- (2) Steel Slag Stockpiles. Homogeneous RAP stockpiles containing steel slag will be approved for use in all HMA (High ESAL and Low ESAL) Surface and Binder Mixture applications.
- (3) Use in HMA Surface Mixtures (High and Low ESAL). RAP/FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall be FRAP or homogeneous in which the coarse aggregate is Class B quality or better. RAP/FRAP from Conglomerate stockpiles shall be considered equivalent to limestone for frictional considerations. Known frictional contributions from plus #4 (4.75 mm) homogeneous RAP and FRAP stockpiles will be accounted for in meeting frictional requirements in the specified mixture.
- (4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. RAP/FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP, homogeneous, or conglomerate, in which the coarse aggregate is Class C quality or better.
- (5) Use in Shoulders and Subbase. RAP/FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be FRAP, homogeneous, conglomerate, or conglomerate DQ.
- (6) When the Contractor chooses the RAP option, the percentage of RAP shall not exceed the amounts indicated in Article 1031.06(c)(1) below for a given N Design.



- (b) RAS. RAS meeting Type 1 or Type 2 requirements will be permitted in all HMA applications as specified herein.
- (c) RAP/FRAP and/or RAS Usage Limits. Type 1 or Type 2 RAS may be used alone or in conjunction with RAP or FRAP in HMA mixtures up to a maximum of 5.0% by weight of the total mix.
- (1) RAP/RAS. When RAP is used alone or RAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement shall not exceed the amounts listed in the Max RAP/RAS ABR table listed below for the given Ndesign.

**RAP/RAS Maximum Asphalt Binder Replacement (ABR) Percentage**

HMA Mixtures <sup>1/, 2/</sup> Ndesign	RAP/RAS Maximum ABR %		
	Binder/Leveling Binder	Surface	Polymer Modified
30	30	30	10
50	25	15	10
70	15	10	10
90	10	10	10
105	10	10	10

- 1/ For HMA "All Other" (shoulder and stabilized subbase) N-30, the RAP/RAS ABR shall not exceed 50 percent of the mixture.
- 2/ When RAP/RAS ABR exceeds 20 percent, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG64-22 to be reduced to a PG58-28). If warm mix asphalt (WMA) technology is utilized, and production temperatures do not exceed 275 °F (135 °C) the high and low virgin asphalt binder grades shall each be reduced by one grade when RAP/RAS ABR exceeds 25 percent (i.e. 26 percent RAP/RAS ABR would require a virgin asphalt binder grade of PG64-22 to be reduced to a PG58-28).

- (2) FRAP/RAS. When FRAP is used alone or FRAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement shall not exceed the amounts listed in the FRAP/RAS table listed below for the given N design.

**FRAP/RAS Maximum Asphalt Binder Replacement (ABR) Percentage**

HMA Mixtures <i>1/, 2/</i>	FRAP/RAS Maximum ABR %		
Ndesign	Binder/Leveling Binder	Surface	Polymer Modified <sup>3/, 4/</sup>
30	50	40	10
50	40	35	10
70	40	30	10
90	40	30	10
105	40	30	10

- 1/ For HMA “All Other” (shoulder and stabilized subbase) N30, the FRAP/RAS ABR shall not exceed 50 percent of the mixture.
- 2/ When FRAP/RAS ABR exceeds 20 percent for all mixes the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG64-22 to be reduced to a PG58-28). If warm mix asphalt (WMA) technology is utilized, and production temperatures do not exceed 275 °F (135 °C) the high and low virgin asphalt binder grades shall each be reduced by one grade when FRAP/RAS ABR exceeds 25 percent (i.e. 26 percent ABR would require a virgin asphalt binder grade of PG64-22 to be reduced to a PG58-28).
- 3/ For SMA the FRAP/RAS ABR shall not exceed 20 percent.
- 4/ For IL-4.75 mix the FRAP/RAS ABR shall not exceed 30 percent.

**1031.07 HMA Mix Designs.** At the Contractor’s option, HMA mixtures may be constructed utilizing RAP/FRAP and/or RAS material meeting the detailed requirements specified herein.

- (a) RAP/FRAP and/or RAS. RAP/FRAP and/or RAS mix designs shall be submitted for verification. If additional RAP/FRAP 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/FRAP stockpile and HMA mix design, and meets all of the requirements herein, the additional RAP/FRAP stockpiles may be used in the original mix design at the percent previously verified.
- (b) RAS. Type 1 and Type 2 RAS are not interchangeable in a mix design. A RAS stone bulk specific gravity (Gsb) of 2.300 shall be used for mix design purposes.

**1031.08 HMA Production.** HMA production utilizing RAP/FRAP and/or RAS shall be as follows.

- (a) RAP/FRAP. The coarse aggregate in all RAP/FRAP used shall be equal to or less than the nominal maximum size requirement for the HMA mixture being produced.

To remove or reduce agglomerated material, a scalping screen, gator, 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/FRAP control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAP/FRAP and either switch to the virgin aggregate design or submit a new RAP/FRAP design.

- (b) RAS. RAS shall be incorporated into the HMA mixture either by a separate weight depletion system or by using the RAP weigh belt. Either feed system shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes. The portion of RAS shall be controlled accurately to within  $\pm 0.5$  percent of the amount of RAS utilized. When using the weight depletion system, flow indicators or sensing devices shall be provided and interlocked with the plant controls such that the mixture production is halted when RAS flow is interrupted.

- (c) RAP/FRAP and/or RAS. HMA plants utilizing RAP/FRAP and/or RAS shall be capable of automatically recording and printing the following information.

(1) Dryer Drum Plants.

- a. Date, month, year, and time to the nearest minute for each print.
- b. HMA mix number assigned by the Department.
- c. Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
- d. Accumulated dry weight of RAP/FRAP/RAS in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
- e. Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.
- f. Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.

- g. Residual asphalt binder in the RAP/FRAP material as a percent of the total mix to the nearest 0.1 percent.
- h. Aggregate and RAP/FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAP/FRAP are printed in wet condition.)

(2) Batch Plants.

- a. Date, month, year, and time to the nearest minute for each print.
- b. HMA mix number assigned by the Department.
- c. Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).
- d. Mineral filler weight to the nearest pound (kilogram).
- e. RAP/FRAP/RAS weight to the nearest pound (kilogram).
- f. Virgin asphalt binder weight to the nearest pound (kilogram).
- g. Residual asphalt binder in the RAP/FRAP/RAS material as a percent of the total mix to the nearest 0.1 percent.

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

**1031.09 RAP in Aggregate Surface Course and Aggregate Shoulders.** The use of RAP in aggregate surface course (temporary access entrances only) and aggregate wedge shoulders Type B shall be as follows.

- (a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except "Non-Quality" and "FRAP". The testing requirements of Article 1031.03 shall not apply. RAP used to construct aggregate surface course and aggregate shoulders shall be according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications".
- (b) Gradation. One hundred percent of the RAP material shall pass the 1 1/2 in. (37.5 mm) sieve. The RAP material shall be reasonably well graded from coarse to fine. RAP material that is gap-graded or single sized will not be accepted."

**RETROREFLECTIVE SHEETING FOR HIGHWAY SIGNS (BDE)**

Effective: November 1, 2014

Revise the first sentence of the first paragraph of Article 1091.03(a)(3) of the Standard Specifications to read:

“When tested according to ASTM E 810, with averaging, the sheeting shall have a minimum coefficient of retroreflection as show in the following tables.”

Replace the Tables for Type AA sheeting, Type AP sheeting, Type AZ sheeting and Type ZZ sheeting in Article 1091.03(a)(3) with the following.

Type AA Sheeting  
 Minimum Coefficient of Retroreflection  
 Candelas/foot candle/sq ft (candelas/lux/sq m) of material

Type AA (Average of 0 and 90 degree rotation)

Observation Angle (deg.)	Entrance Angle (deg.)	White	Yellow	Red	Green	Blue	FO
0.2	-4	800	600	120	80	40	200
0.2	+30	400	300	60	35	20	100
0.5	-4	200	150	30	20	10	75
0.5	+30	100	75	15	10	5	35

Type AA (45 degree rotation)

Observation Angle (deg.)	Entrance Angle (deg.)	Yellow	FO
0.2	-4	500	165
0.2	+30	115	40
0.5	-4	140	65
0.5	+30	60	30

Type AP Sheeting  
 Minimum Coefficient of Retroreflection  
 Candelas/foot candle/sq ft (candelas/lux/sq m) of material

Type AP (Average of 0 and 90 degree rotation)

Observation Angle (deg.)	Entrance Angle (deg.)	White	Yellow	Red	Green	Blue	Brown	FO
0.2	-4	500	380	75	55	35	25	150
0.2	+30	180	135	30	20	15	10	55
0.5	-4	300	225	50	30	20	15	90
0.5	+30	90	70	15	10	7.5	5	30

Type AZ Sheeting  
 Minimum Coefficient of Retroreflection  
 Candelas/foot candle/sq ft (candelas/lux/sq m) of material

Type AZ (Average of 0 and 90 degree rotation)

Observation Angle (deg.)	Entrance Angle (deg.)	White	Yellow	Red	Green	Blue	FYG	FY
0.2	-4	375	280	75	45	25	300	230
0.2	+30	235	170	40	25	15	190	150
0.5	-4	245	180	50	30	20	200	155
0.5	+30	135	100	25	15	10	100	75
1.0	-4	50	37.5	8.5	5	2	45	25
1.0	+30	22.5	20	5	3	1	25	12.5

Type ZZ Sheeting  
 Minimum Coefficient of Retroreflection  
 Candelas/foot candle/sq ft (candelas/lux/sq m) of material

Type ZZ (Average of 0 and 90 degree rotation)

Observation Angle (deg.)	Entrance Angle (deg.)	White	Yellow	Red	Green	Blue	FYG	FY	FO
0.2	-4	570	425	90	60	30	460	340	170
0.2	+30	190	140	35	20	10	150	110	65
0.5	-4	400	300	60	40	20	320	240	120
0.5	+30	130	95	20	15	7	100	80	45
1.0	-4	115	90	17	12	5	95	70	35
1.0	+30	45	35	7	5	2	35	25	15

## **REINFORCEMENT BARS (BDE)**

Effective: November 1, 2013

Revise the first and second paragraphs of Article 508.05 of the Standard Specifications to read:

**“508.05 Placing and Securing.** All reinforcement bars shall be placed and tied securely at the locations and in the configuration shown on the plans prior to the placement of concrete. Manual welding of reinforcement may only be permitted or precast concrete products as indicated in the current Bureau of Materials and Physical Research Policy Memorandum “Quality Control / Quality Assurance Program for Precast Concrete Products”, and for precast prestressed concrete products as indicated in the Department’s current “Manual for Fabrication of Precast Prestressed Concrete Products”. Reinforcement bars shall not be placed by sticking or floating into place or immediately after placement of the concrete.

Bars shall be tied at all intersections, except where the center to center dimension is less than 1 ft (300 mm) in each direction, in which case alternate intersections shall be tied. Molded plastic clips may be used in lieu of wire to secure bar intersections, but shall not be permitted in horizontal bar mats subject to construction foot traffic or to secure longitudinal bar laps. Plastic clips shall adequately secure the reinforcement bars, and shall permit the concrete to flow through and fully encase the reinforcement. Plastic clips may be recycled plastic, and shall meet the approval of the Engineer. The number of ties as specified shall be doubled for lap splices at the stage construction line of concrete bridge decks when traffic is allowed on the first completed stage during the pouring of the second stage.”

Revise the fifth paragraph of Article 508.05 of the Standard Specifications to read:

“Supports for reinforcement in bridge decks shall be metal. For all other concrete construction the supports shall be metal or plastic. Metal bar supports shall be made of cold-drawn wire, or other approved material and shall be either epoxy coated, galvanized or plastic tipped. When the reinforcement bars are epoxy coated, the metal supports shall be epoxy coated. Plastic supports may be recycled plastic. Supports shall be provided in sufficient number and spaced to provide the required clearances. Supports shall adequately support the reinforcement bars, and shall permit the concrete to flow through and fully encase the reinforcement. The legs of supports shall be spaced to allow an opening that is a minimum 1.33 times the nominal maximum aggregate size used in the concrete. Nominal maximum aggregate size is defined as the largest sieve which retains any of the aggregate sample particles. All supports shall meet the approval of the Engineer.”

Revise the first sentence of the eighth paragraph of Article 508.05 of the Standard Specifications to read:

“Epoxy coated reinforcement bars shall be tied with plastic coated wire, epoxy coated wire, or molded plastic clips where allowed.”

Add the following sentence to the end of the first paragraph of Article 508.06(c) of the Standard Specifications:

“In addition, the total slip of the bars within the splice sleeve of the connector after loading in tension to 30 ksi (207 MPa) and relaxing to 3 ksi (20.7 MPa) shall not exceed 0.01 in. (254 microns).”

Revise Article 1042.03(d) of the Standard Specifications to read:

“(d) Reinforcement and Accessories: The concrete cover over all reinforcement shall be within  $\pm 1/4$  in. ( $\pm 6$  mm) of the specified cover.

Welded wire fabric shall be accurately bent and tied in place.

Miscellaneous accessories to be cast into the concrete or for forming holes and recesses shall be carefully located and rigidly held in place by bolts, clamps, or other effective means. If paper tubes are used for vertical dowel holes, or other vertical holes which require grouting, they shall be removed before transportation to the construction site.”

#### **RIGID METAL CONDUIT (BDE)**

Effective: August 1, 2014

Add the following to Article 1088.01(a) of the Standard Specifications:

“(6) Stainless Steel Conduit. The conduit shall be Type 304 or Type 316 stainless steel, shall be manufactured according to UL Standard 6A, and shall meet ANSI Standard C80.1. Conduit fittings shall be Type 304 or Type 316 stainless steel and shall be manufactured according to UL Standard 514B.

All conduit supports, straps, clamps. And other attachments shall be Type 304 or Type 316 stainless steel. Attachment hardware shall be stainless steel according to Article 1006.31.”

#### **SIDEWALK, CORNER, OR CROSSWALK CLOSURE (BDE)**

Effective: January 1, 2015

Revised: April 1, 2015

Revise the first sentence of Article 1106.02(m) of the Supplemental Specifications to read:

“The top and bottom panels shall have alternating white and orange stripes sloping 45 degrees on both sides.”



**TEMPORARY CONCRETE BARRIER (BDE)**

Effective: January 1, 2015

Revised: July 1, 2015

Revise Article 704.02 of the Standard Specifications to read:

**“704.02 Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Precast Temporary Concrete Barrier .....	1042
(b) Reinforcement Bars .....	1006.10(a)
(c) Connecting Pins and Anchor Pins (Note 1)	
(d) Connecting Loop Bars (Note 2)	
(e) Packaged Rapid Hardening Mortar or Concrete .....	1018

Note 1. Connecting Pins and Anchor Pins shall be according to the requirements of ASTM F 1554 Grade 36 (Grade 250).

Note 2. Connecting loop bars shall be smooth bars according to the requirements of ASTM A 36 (A 36M).”

Revise Article 704.04 of the Standard Specifications to read:

**“704.04 Installation.** The barriers shall be seated on bare, clean pavement or paved shoulder and connected together in a smooth, continuous line at the locations provided by the Engineer.

Except on bridge decks, or where alternate anchoring details are shown on the plans, the barrier unit at each end of an installation shall be anchored to the pavement or paved shoulder using six anchor pins and protected with an impact attenuator as shown on the plans. When pinning of additional barrier units within the installation is specified, three anchor pins shall be installed in the traffic side holes of the required barriers.

Where both pinned and unpinned barrier units are used in a continuous installation, a transition shall be provided between them. The transition from pinned to unpinned barrier shall consist of two anchor pins installed in the end holes on the traffic side of the first barrier beyond the pinned section and one anchor pin installed in the middle hole on the traffic side of the second barrier beyond the pinned section. The third barrier beyond the pinned section shall then be unpinned.

Barriers located on bridge decks shall be restrained as shown on the plans. Anchor pins shall not be installed through bridge decks, unless otherwise noted.

Barriers or attachments damaged during transportation or handling, or by traffic during the life of the installation, shall be repaired or replaced. The Engineer will be the sole judge in determining which units or attachments require repair or replacement.

The barriers shall be removed when no longer required by the contract. After removal, all anchor holes in the pavement or paved shoulder shall be filled with a rapid hardening mortar or concrete. Only enough water to permit placement and consolidation by rodding shall be used and the material shall be struck-off flush.”

Add the following after the first paragraph of Article 704.05 of the Standard Specifications:

“Anchor pins, except for the six anchor pins for the barrier unit at each end of an installation, will be measured for payment as each, per anchor pin installed.”

Add the following after the second paragraph of Article 704.06 of the Standard Specifications:

“Anchor pins, except for the six anchor pins for the barrier unit at each end of an installation, will be paid for at the contract unit price per each for PINNING TEMPORARY CONCRETE BARRIER.”

**TRACKING THE USE OF PESTICIDES (BDE)**

Effective: August 1, 2012

Add the following paragraph after the first paragraph of Article 107.23 of the Standard Specifications:

“Within 48 hours of the application of pesticides, including but not limited to herbicides, insecticides, algaecides, and fungicides, the Contractor shall complete and return to the Engineer, Operations form “OPER 2720”.”

**TRAFFIC BARRIER TERMINALS TYPE 6 OR 6B (BDE)**

Effective: January 1, 2015

Add the following to the Article 631.02 of the Standard Specifications:

“(h) Chemical Adhesive ..... 1027.01”

### **TRAINING SPECIAL PROVISIONS (BDE)**

Effective: October 15, 1975

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 shall 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.

### **IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION (TPG)**

Effective: August 1, 2012

Revised: February 1, 2014

In addition to the Contractor's equal employment opportunity affirmative action efforts undertaken as elsewhere required by this Contract, the Contractor is encouraged to participate in the incentive program to provide additional on-the-job training to certified graduates of IDOT funded pre-apprenticeship training programs outlined by this Special Provision.

It is the policy of IDOT to fund IDOT pre-apprenticeship training programs throughout Illinois to provide training and skill-improvement opportunities to assure the increased participation of minority groups, disadvantaged persons and women in all phases of the highway construction industry. The intent of this IDOT Training Program Graduate (TPG) Special Provision is to place certified graduates of these IDOT funded pre-apprentice training programs on IDOT project sites when feasible, and provide the graduates with meaningful on-the-job training intended to lead to journey-level employment. IDOT and its sub-recipients, in carrying out the responsibilities of a state contract, shall determine which construction contracts shall include "Training Program Graduate Special Provisions." To benefit from the incentives to encourage the participation in the additional on-the-job training under this Training Program Graduate Special Provision, the Contractor shall make every reasonable effort to employ certified graduates of IDOT funded Pre-apprenticeship Training Programs to the extent such persons are available within a reasonable recruitment area.

Participation pursuant to IDOT's requirements by the Contractor or subcontractor in this Training Program Graduate (TPG) Special Provision entitles the Contractor or subcontractor to be reimbursed at \$15.00 per hour for training given a certified TPG on this contract. As approved by the Department, reimbursement will be made for training persons as specified herein. This reimbursement will be made even though the Contractor or subcontractor may receive additional training program funds from other sources for other trainees, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving other reimbursement. For purposes of this Special Provision the Contractor is not relieved of requirements under applicable federal law, the Illinois Prevailing Wage Act, and is not eligible for other training fund reimbursements in addition to the Training Program Graduate (TPG) Special Provision reimbursement.

No payment shall be made to the Contractor if the Contractor or subcontractor fails to provide the required training. It is normally expected that a TPG will begin training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project through completion of the contract, so long as training opportunities exist in his work classification or until he has completed his training program. Should the TPG's employment end in advance of the completion of the contract, the Contractor shall promptly notify the designated IDOT staff member under this Special Provision that the TPG's involvement in the contract has ended and supply a written report of the reason for the end of the involvement, the hours completed by the TPG under the Contract and the number of hours for which the incentive payment provided under this Special Provision will be or has been claimed for the TPG.

The Contractor will provide for the maintenance of records and furnish periodic reports documenting its performance under this 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 \$15.00 per hour for certified TRAINEES TRAINING PROGRAM GRADUATE. The estimated total number of hours, unit price and total price have been included in the schedule of prices.

The Contractor shall provide training opportunities aimed at developing full journeyworker in the type of trade or job classification involved. The initial number of TPGs for which the incentive is available under this contract is 8. During the course of performance of the Contract the Contractor may seek approval from the Department for additional incentive eligible TPGs. In the event the Contractor subcontracts a portion of the contract work, it shall determine how many, if any, of the TPGs 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 Program Graduate Special Provision is made applicable to such subcontract if the TPGs are to be trained by a subcontractor and that the incentive payment is passed on to each subcontractor.

For the Contractor to meet the obligations for participation in this TPG incentive program under this Special Provision, the Department has contracted with several entities to provide screening, tutoring and pre-training to individuals interested in working in the applicable construction classification and has certified those students who have successfully completed the program and are eligible to be TPGs. A designated IDOT staff member, the Director of the Office of Business and Workforce Diversity (OBWD), will be responsible for providing assistance and referrals to the Contractor for the applicable TPGs. For this contract, the Director of OBWD is designated as the responsible IDOT staff member to provide the assistance and referral services related to the placement for this Special Provision. For purposes of this Contract, contacting the Director of OBWD and interviewing each candidate he/she recommends constitutes reasonable recruitment.

Prior to commencing construction, the Contractor shall submit to the Department for approval the TPGs to be trained in each selected classification. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. No employee shall be employed as a TPG in any classification in which he/she has successfully completed a training course leading to journeyman status or in which he/she has been employed as a journeyman. Notwithstanding the on-the-job training purpose of this TPG Special Provision, some offsite training is permissible as long as the offsite training is an integral part of the work of the contract and does not comprise a significant part of the overall training.

Training and upgrading of TPGs of IDOT pre-apprentice training programs is intended to move said TPGs toward journeyman status and is the primary objective of this Training Program Graduate Special Provision. Accordingly, the Contractor shall make every effort to enroll TPGs by recruitment through the IDOT funded TPG programs to the extent such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps that it has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance and entitled to the Training Program Graduate Special Provision \$15.00 an hour incentive.

The Contractor or subcontractor shall provide each TPG with a certificate showing the type and length of training satisfactorily completed.

**TRAVERSABLE PIPE GRATE (BDE)**

Effective: January 1, 2013

Revised: April 1, 2014

Description. This work shall consist of constructing a traversable pipe grate on a concrete end section.

Materials. Materials shall be according to the following Articles of Division 1000 – Materials of the Standard Specifications.

Item	Article/Section
(a) Traversable Pipe Grate Components (Note 1)	
(b) Chemical Adhesive Resin System .....	1027
(c) High Strength Steel Bolts, Nuts, and Washers (Note 2) .....	1006.08

Note 1. All steel pipe shall be according to ASTM A 53 (Type E or S), Grade B, or ASTM A 500 Grade B, standard weight (SCH. 40). Structural steel shapes and plates shall be according to AASHTO M270 Grade 50 (M 270M Grade 345) and the requirements of Article 1006.04 of the Standard Specifications. All steel components of the grating system shall be galvanized according to AASHTO M 111 or M 232 as applicable.

Anchor rods shall be according to ASTM F 1554, Grade 36 (Grade 250).

Note 2. Threaded rods conforming to the requirements of ASTM F 1554, Grade 105 (Grade 725) may be used for the thru bolts.

**CONSTRUCTION REQUIREMENTS**

Fabrication of the traversable pipe grate shall be according to the requirements of Section 505 of the Standard Specifications and as shown on the plans.

Anchor rods shall be set according to Article 509.06 of the Standard Specifications. Bolts and anchor rods shall be snug tightened by a few impacts of an impact wrench or the full force of a worker using an ordinary spud wrench. Thru bolts shall be snug tightened and shall be brought to a snug tight condition followed by an additional 2/3 turn on one of the nuts. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut.

Splicing of pipes shall be made by utilizing full penetration butt welds according to Article 505.04(q) of the Standard Specifications. In lieu of welding, bolted or sleeve type splices may be utilized, provided the splices are located over intermediate supports with no more than one splice per pipe run with the exception that no splice may occur in pipe runs under 30 ft (9 m) in length.



Method of Measurement. This work will be measured for payment in place in feet (meters). The length measured shall be along the pipe grate elements from end to end for both longitudinal and intermediate support pipes.

Basis of Payment. This work will be paid for at the contract unit price per foot (meter) for TRAVERSABLE PIPE GRATE.

### **WATERWAY OBSTRUCTION WARNING LUMINAIRE (BDE)**

Effective: August 1, 2014

Revised: April 1, 2015

Revise the second paragraph of Article 1067.07(a) of the Standard Specifications to read:

“The luminaire shall have a bronze housing and shall meet the requirements set forth by the United States Coast Guard in Title 33, Part 118 of the Code of Federal Regulations. Nuts, bolts, thumb screws, hardware, thread rods, and mounting bases which are exterior, shall be stainless steel (300 series) or bronze. Hardware on the interior of the lamp cavity shall be stainless steel or bronze.”

Add the following paragraphs after the third paragraph of Article 1067.07(a) of the Standard Specifications:

“The pivot type mounting assembly shall be bronze and shall be mounted on an external vibration isolator. The pivot assembly shall include a greased bearing. A grease fitting shall be positioned such that the bearing can be lubricated from the bridge deck. A stainless steel extension tube shall run from the grease fitting to the bearing. A locking rod assembly made of aluminum or stainless steel shall secure the luminaire in the operating position and shall include padlock provisions. Stainless steel pipes shall be used to attach the pivot assembly to both the luminaire housing and the counterweights. A stainless steel locknut shall be used at all threaded connections to the pipes.

Stainless steel hook, ring, and connecting plates shall be attached to the bridge railing with stainless steel hardware or shall be anchored in the parapet. The connecting plate shall include a vandal-resistant rod locking mechanism. The service chain shall be stainless steel.”

Add the following to the end of the first paragraph of Article 1067.07(a)(3) of the Standard Specifications:

“Surge protection for the luminaire shall be integral to the fixture housing.”

**WARM MIX ASPHALT (BDE)**

Effective: January 1, 2012

Revised: November 1, 2014

Description. This work shall consist of designing, producing and constructing Warm Mix Asphalt (WMA) in lieu of Hot Mix Asphalt (HMA) at the Contractor's option. Work shall be according to Sections 406, 407, 408, 1030, and 1102 of the Standard Specifications, except as modified herein. In addition, any references to HMA in the Standard Specifications, or the special provisions shall be construed to include WMA.

WMA is an asphalt mixture which can be produced at temperatures lower than allowed for HMA utilizing approved WMA technologies. WMA technologies are defined as the use of additives or processes which allow a reduction in the temperatures at which HMA mixes are produced and placed. WMA is produced by the use of additives, a water foaming process, or combination of both. Additives include minerals, chemicals or organics incorporated into the asphalt binder stream in a dedicated delivery system. The process of foaming injects water into the asphalt binder stream, just prior to incorporation of the asphalt binder with the aggregate.

Approved WMA technologies may also be used in HMA provided all the requirements specified herein, with the exception of temperature, are met. However, asphalt mixtures produced at temperatures in excess of 275 °F (135 °C) will not be considered WMA when determining the grade reduction of the virgin asphalt binder grade.

Equipment.

Revise the first paragraph of Article 1102.01 of the Standard Specifications to read:

**“1102.01 Hot-Mix Asphalt Plant.** The hot-mix asphalt (HMA) plant shall be the batch-type, continuous-type, or dryer drum plant. The plants shall be evaluated for prequalification rating and approval to produce HMA according to the current Bureau of Materials and Physical Research Policy Memorandum, “Approval of Hot-Mix Asphalt Plants and Equipment”. Once approved, the Contractor shall notify the Bureau of Materials and Physical Research to obtain approval of all plant modifications. The plants shall not be used to produce mixtures concurrently for more than one project or for private work unless permission is granted in writing by the Engineer. The plant units shall be so designed, coordinated and operated that they will function properly and produce HMA having uniform temperatures and compositions within the tolerances specified. The plant units shall meet the following requirements.”

Add the following to Article 1102.01(a) of the Standard Specifications.

“(13) Equipment for Warm Mix Technologies.

- a. Foaming. Metering equipment for foamed asphalt shall have an accuracy of  $\pm 2$  percent of the actual water metered. The foaming control system shall be electronically interfaced with the asphalt binder meter.
- b. Additives. Additives shall be introduced into the plant according to the supplier's recommendations and shall be approved by the Engineer. The system for introducing the WMA additive shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes.”

#### Mix Design Verification.

Add the following to Article 1030.04 of the Standard Specifications.

“(e) Warm Mix Technologies.

- (1) Foaming. WMA mix design verification will not be required when foaming technology is used alone (without WMA additives). However, the foaming technology shall only be used on HMA designs previously approved by the Department.
- (2) Additives. WMA mix designs utilizing additives shall be submitted to the Engineer for mix design verification.”

#### Construction Requirements.

Revise the second paragraph of Article 406.06(b)(1) of the Standard Specifications to read:

“The HMA shall be delivered at a temperature of 250 to 350 °F (120 to 175 °C).  
WMA shall be delivered at a minimum temperature of 215 °F (102 °C).”

#### Basis of Payment.

This work will be paid at the contract unit price bid for the HMA pay items involved. Anti-strip will not be paid for separately, but shall be considered as included in the cost of the work.

#### **WEEKLY DBE TRUCKING REPORTS (BDE)**

Effective: June 2, 2012

Revised: April 2, 2015

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Engineer on Department form "SBE 723" within ten business days following the reporting period. The reporting period shall be Monday through Sunday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

**BITUMINOUS MATERIALS COST ADJUSTMENTS (BDE) (RETURN FORM WITH BID)**

Effective: November 2, 2006

Revised: July 1, 2015

Description. Bituminous material cost adjustments will be made to provide additional compensation to the Contractor, or credit to the Department, for fluctuations in the cost of bituminous materials when optioned by the Contractor. The bidder shall indicate on the attached form whether or not this special provision will be part of the contract and submit the completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of bituminous materials cost adjustments.

The adjustments shall apply to permanent and temporary hot-mix asphalt (HMA) mixtures, bituminous surface treatments (cover and seal coats), and preventative maintenance type surface treatments that are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply to bituminous prime coats, tack coats, crack filling/sealing, joint filling/sealing, or extra work paid for at a lump sum price or by force account.

Method of Adjustment. Bituminous materials cost adjustments will be computed as follows.

$$CA = (BPI_P - BPI_L) \times (\%AC_V / 100) \times Q$$

Where: CA = Cost Adjustment, \$.

BPI<sub>P</sub> = Bituminous Price Index, as published by the Department for the month the work is performed, \$/ton (\$/metric ton).

BPI<sub>L</sub> = Bituminous Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, \$/ton (\$/metric ton).

%AC<sub>V</sub> = Percent of virgin Asphalt Cement in the Quantity being adjusted. For HMA mixtures, the % AC<sub>V</sub> will be determined from the adjusted job mix formula. For bituminous materials applied, a performance graded or cutback asphalt will be considered to be 100% AC<sub>V</sub> and undiluted emulsified asphalt will be considered to be 65% AC<sub>V</sub>.

Q = Authorized construction Quantity, tons (metric tons) (see below).

For HMA mixtures measured in square yards:  $Q, \text{ tons} = A \times D \times (G_{mb} \times 46.8) / 2000$ . For HMA mixtures measured in square meters:  $Q, \text{ metric tons} = A \times D \times (G_{mb} \times 1) / 1000$ . When computing adjustments for full-depth HMA pavement, separate calculations will be made for the binder and surface courses to account for their different  $G_{mb}$  and  $\% AC_V$ .

For bituminous materials measured in gallons:  $Q, \text{ tons} = V \times 8.33 \text{ lb/gal} \times SG / 2000$

For bituminous materials measured in liters:  $Q, \text{ metric tons} = V \times 1.0 \text{ kg/L} \times SG / 1000$

Where: A = Area of the HMA mixture, sq yd (sq m).  
D = Depth of the HMA mixture, in. (mm).  
 $G_{mb}$  = Average bulk specific gravity of the mixture, from the approved mix design.  
V = Volume of the bituminous material, gal (L).  
SG = Specific Gravity of bituminous material as shown on the bill of lading.

Basis of Payment. Bituminous materials cost adjustments may be positive or negative but will only be made when there is a difference between the  $BPI_L$  and  $BPI_P$  in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(BPI_L - BPI_P) \div BPI_L\} \times 100$$

Bituminous materials cost adjustments will be calculated for each calendar month in which applicable bituminous material is placed; and will be paid or deducted when all other contract requirements for the work placed during the month are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

Return With Bid

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

**OPTION FOR  
BITUMINOUS MATERIALS COST ADJUSTMENTS**

The bidder shall submit this completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of bituminous materials cost adjustments. After award, this form, when submitted, shall become part of the contract.

**Contract No.:** \_\_\_\_\_

**Company Name:** \_\_\_\_\_

**Contractor's Option:**

Is your company opting to include this special provision as part of the contract?

Yes  No

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**FUEL COST ADJUSTMENT (BDE) (RETURN FORM WITH BID)**

Effective: April 1, 2009

Revised: July 1, 2015

Description. Fuel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in fuel prices when optioned by the Contractor. The bidder shall indicate on the attached form whether or not this special provision will be part of the contract and submit the completed form with his/her bid. Failure to submit the form or failure to indicate contract number, company name and sign and date the form shall make this contract exempt of fuel cost adjustments for all categories of work. Failure to indicate "Yes" for any category of work will make that category of work exempt from fuel cost adjustment.

General. The fuel cost adjustment shall apply to contract pay items as grouped by category. The adjustment shall only apply to those categories of work checked "Yes", and only when the cumulative plan quantities for a category exceed the required threshold. Adjustments to work items in a category, either up or down, and extra work paid for by agreed unit price will be subject to fuel cost adjustment only when the category representing the added work was subject to the fuel cost adjustment. Extra work paid for at a lump sum price or by force account will not be subject to fuel cost adjustment. Category descriptions and thresholds for application and the fuel usage factors which are applicable to each are as follows:

(a) Categories of Work.

- (1) Category A: Earthwork. Contract pay items performed under Sections 202, 204, and 206 including any modified standard or nonstandard items where the character of the work to be performed is considered earthwork. The cumulative total of all applicable item plan quantities shall exceed 25,000 cu yd (20,000 cu m). Included in the fuel usage factor is a weighted average 0.10 gal/cu yd (0.50 liters/cu m) factor for trucking.
- (2) Category B: Subbases and Aggregate Base Courses. Contract pay items constructed under Sections 311, 312 and 351 including any modified standard or nonstandard items where the character of the work to be performed is considered construction of a subbase or aggregate, stabilized or modified base course. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is a 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.
- (3) Category C: Hot-Mix Asphalt (HMA) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 355, 406, 407 and 482 including any modified standard or nonstandard items where the character of the work to be performed is considered HMA bases, pavements and shoulders. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.

- (4) Category D: Portland Cement Concrete (PCC) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 353, 420, 421 and 483 including any modified standard or nonstandard items where the character of the work to be performed is considered PCC base, pavement or shoulder. The cumulative total of all applicable item plan quantities shall exceed 7500 sq yd (6000 sq m). Included in the fuel usage factor is 1.20 gal/cu yd (5.94 liters/cu m) factor for trucking.
- (5) Category E: Structures. Structure items having a cumulative bid price that exceeds \$250,000 for pay items constructed under Sections 502, 503, 504, 505, 512, 516 and 540 including any modified standard or nonstandard items where the character of the work to be performed is considered structure work when similar to that performed under these sections and not included in categories A through D.

(b) Fuel Usage Factors.

English Units		
Category	Factor	Units
A - Earthwork	0.34	gal / cu yd
B – Subbase and Aggregate Base courses	0.62	gal / ton
C – HMA Bases, Pavements and Shoulders	1.05	gal / ton
D – PCC Bases, Pavements and Shoulders	2.53	gal / cu yd
E – Structures	8.00	gal / \$1000

Metric Units		
Category	Factor	Units
A - Earthwork	1.68	liters / cu m
B – Subbase and Aggregate Base courses	2.58	liters / metric ton
C – HMA Bases, Pavements and Shoulders	4.37	liters / metric ton
D – PCC Bases, Pavements and Shoulders	12.52	liters / cu m
E – Structures	30.28	liters / \$1000

(c) Quantity Conversion Factors.

Category	Conversion	Factor
B	sq yd to ton	0.057 ton / sq yd / in depth
	sq m to metric ton	0.00243 metric ton / sq m / mm depth
C	sq yd to ton	0.056 ton / sq yd / in depth
	sq m to metric ton	0.00239 m ton / sq m / mm depth
D	sq yd to cu yd	0.028 cu yd / sq yd / in depth
	sq m to cu m	0.001 cu m / sq m / mm depth



Method of Adjustment. Fuel cost adjustments will be computed as follows.

$$CA = (FPI_P - FPI_L) \times FUF \times Q$$

Where: CA = Cost Adjustment, \$  
FPI<sub>P</sub> = Fuel Price Index, as published by the Department for the month the work is performed, \$/gal (\$/liter)  
FPI<sub>L</sub> = Fuel Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, \$/gal (\$/liter)  
FUF = Fuel Usage Factor in the pay item(s) being adjusted  
Q = Authorized construction Quantity, tons (metric tons) or cu yd (cu m)

The entire FUF indicated in paragraph (b) will be used regardless of use of trucking to perform the work.

Basis of Payment. Fuel cost adjustments may be positive or negative but will only be made when there is a difference between the FPI<sub>L</sub> and FPI<sub>P</sub> in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(FPI_L - FPI_P) \div FPI_L\} \times 100$$

Fuel cost adjustments will be calculated for each calendar month in which applicable work is performed; and will be paid or deducted when all other contract requirements for the items of work are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

Return With Bid

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

**OPTION FOR  
FUEL COST ADJUSTMENT**

The bidder shall submit this completed form with his/her bid. Failure to submit the form or properly complete contract number, company name, and sign and date the form shall make this contract exempt of fuel cost adjustments in all categories. Failure to indicate "Yes" for any category of work at the time of bid will make that category of work exempt from fuel cost adjustment. 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 for the following categories of work?

- |  |     |                          |
|--|-----|--------------------------|
| Category A Earthwork.                          | Yes | <input type="checkbox"/> |
| Category B Subbases and Aggregate Base Courses | Yes | <input type="checkbox"/> |
| Category C HMA Bases, Pavements and Shoulders  | Yes | <input type="checkbox"/> |
| Category D PCC Bases, Pavements and Shoulders  | Yes | <input type="checkbox"/> |
| Category E Structures                          | Yes | <input type="checkbox"/> |

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**STEEL COST ADJUSTMENT (BDE) (RETURN FORM WITH BID)**

Effective: April 2, 2004

Revised: July 1, 2015

Description. Steel cost adjustments will be made to provide additional compensation to the Contractor, or a credit to the Department, for fluctuations in steel prices when optioned by the Contractor. The bidder shall indicate on the attached form whether or not this special provision will be part of the contract and submit the completed form with his/her bid. Failure to submit the form or failure to indicate contract number, company name, and sign and date the form shall make this contract exempt of steel cost adjustments for all items of steel. Failure to indicate "Yes" for any item of work will make that item of steel exempt from steel cost adjustment.

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), and frames and grates will be subject to a steel cost adjustment when the pay items they are used in have a contract value of \$10,000 or greater.

The adjustments shall apply to the above items when they are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply when the item is added as extra work and paid for at a lump sum price or by force account.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

- (a) The dates and quantity of steel, in lb (kg), shipped from the mill to the fabricator.
- (b) The quantity of steel, in lb (kg), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$$SCA = Q \times D$$

Where: SCA = steel cost adjustment, in dollars  
Q = quantity of steel incorporated into the work, in lb (kg)  
D = price factor, in dollars per lb (kg)

$$D = MPI_M - MPI_L$$

Where:  $MPI_M$  = The Materials Cost Index for steel as published by the Engineering News-Record for the month the steel is shipped from the mill. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

$MPI_L$  = The Materials Cost Index for steel as published by the Engineering News-Record for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price,. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

The unit weights (masses) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the  $MPI_M$  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  $MPI_L$  and  $MPI_M$  in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(MPI_L - MPI_M) \div MPI_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

**Attachment**

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling)	
Furnishing Metal Pile Shells 12 in. (305 mm), 0.179 in. (3.80 mm) wall thickness)	23 lb/ft (34 kg/m)
Furnishing Metal Pile Shells 12 in. (305 mm), 0.250 in. (6.35 mm) wall thickness)	32 lb/ft (48 kg/m)
Furnishing Metal Pile Shells 14 in. (356 mm), 0.250 in. (6.35 mm) wall thickness)	37 lb/ft (55 kg/m)
Other piling	See plans
Structural Steel	See plans for weights (masses)
Reinforcing Steel	See plans for weights (masses)
Dowel Bars and Tie Bars	6 lb (3 kg) each
Mesh Reinforcement	63 lb/100 sq ft (310 kg/sq m)
Guardrail	
Steel Plate Beam Guardrail, Type A w/steel posts	20 lb/ft (30 kg/m)
Steel Plate Beam Guardrail, Type B w/steel posts	30 lb/ft (45 kg/m)
Steel Plate Beam Guardrail, Types A and B w/wood posts	8 lb/ft (12 kg/m)
Steel Plate Beam Guardrail, Type 2	305 lb (140 kg) each
Steel Plate Beam Guardrail, Type 6	1260 lb (570 kg) each
Traffic Barrier Terminal, Type 1 Special (Tangent)	730 lb (330 kg) each
Traffic Barrier Terminal, Type 1 Special (Flared)	410 lb (185 kg) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms	
Traffic Signal Post	11 lb/ft (16 kg/m)
Light Pole, Tenon Mount and Twin Mount, 30 - 40 ft (9 - 12 m)	14 lb/ft (21 kg/m)
Light Pole, Tenon Mount and Twin Mount, 45 - 55 ft (13.5 - 16.5 m)	21 lb/ft (31 kg/m)
Light Pole w/Mast Arm, 30 - 50 ft (9 - 15.2 m)	13 lb/ft (19 kg/m)
Light Pole w/Mast Arm, 55 - 60 ft (16.5 - 18 m)	19 lb/ft (28 kg/m)
Light Tower w/Luminaire Mount, 80 - 110 ft (24 - 33.5 m)	31 lb/ft (46 kg/m)
Light Tower w/Luminaire Mount, 120 - 140 ft (36.5 - 42.5 m)	65 lb/ft (97 kg/m)
Light Tower w/Luminaire Mount, 150 - 160 ft (45.5 - 48.5 m)	80 lb/ft (119 kg/m)
Metal Railings (excluding wire fence)	
Steel Railing, Type SM	64 lb/ft (95 kg/m)
Steel Railing, Type S-1	39 lb/ft (58 kg/m)
Steel Railing, Type T-1	53 lb/ft (79 kg/m)
Steel Bridge Rail	52 lb/ft (77 kg/m)
Frames and Grates	
Frame	250 lb (115 kg)
Lids and Grates	150 lb (70 kg)

Return With Bid

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

**OPTION FOR  
STEEL COST ADJUSTMENT**

The bidder shall submit this completed form with his/her bid. Failure to submit the form or properly complete contract number, company name, and sign and date the form shall make this contract exempt of steel cost adjustments for all items of steel. Failure to indicate "Yes" for any item of work will make that item of steel exempt from steel cost adjustment. 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 for the following items of work?

- |  |     |                          |
|--|-----|--------------------------|
| Metal Piling   | Yes | <input type="checkbox"/> |
| Structural Steel   | Yes | <input type="checkbox"/> |
| Reinforcing Steel  | Yes | <input type="checkbox"/> |
| Dowel Bars, Tie Bars and Mesh Reinforcement                | Yes | <input type="checkbox"/> |
| Guardrail  | Yes | <input type="checkbox"/> |
| Steel Traffic Signal and Light Poles, Towers and Mast Arms | Yes | <input type="checkbox"/> |
| Metal Railings (excluding wire fence)                      | Yes | <input type="checkbox"/> |
| Frames and Grates  | Yes | <input type="checkbox"/> |

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## FAA PERMITS



Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2013-AGL-12253-OE

Issued Date: 01/07/2014

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

### **\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Bridge Center of the Truss
Location:	Savanna, IL
Latitude:	42-06-14.86N NAD 83
Longitude:	90-09-38.95W
Heights:	583 feet site elevation (SE) 185 feet above ground level (AGL) 768 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part I)  
 Within 5 days after the construction reaches its greatest height (7460-2, Part II)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory circular 70/7460-1 K Change 2.

This determination expires on 07/07/2015 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power will void this determination. Any future construction or alteration , including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

If we can be of further assistance, please contact our office at (847) 294-7575. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2013-AGL-12253-OE.

**Signature Control No: 203138512-204971543**  
Vivian Vilaro  
Specialist

( DNE )





Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2013-AGL-12254-OE

Issued Date: 01/07/2014

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Bridge NE end of Truss
Location:	Savanna, IL
Latitude:	42-06-14.85N NAD 83
Longitude:	90-09-35.33W
Heights:	583 feet site elevation (SE) 72 feet above ground level (AGL) 655 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part I)  
 Within 5 days after the construction reaches its greatest height (7460-2, Part II)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory circular 70/7460-1 K Change 2.

This determination expires on 07/07/2015 unless:

- the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- extended, revised, or terminated by the issuing office.
- the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power will void this determination. Any future construction or alteration , including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

If we can be of further assistance, please contact our office at (847) 294-7575. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2013-AGL-12254-OE.

**Signature Control No: 203138513-204971545**  
Vivian Vilaro  
Specialist

( DNE )



Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2013-AGL-12255-OE

Issued Date: 01/07/2014

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Bridge Mid point East side on truss
Location:	Savanna, IL
Latitude:	42-06-14.85N NAD 83
Longitude:	90-09-37.14W
Heights:	583 feet site elevation (SE) 148 feet above ground level (AGL) 731 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part I)  
 Within 5 days after the construction reaches its greatest height (7460-2, Part II)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory circular 70/7460-1 K Change 2.

This determination expires on 07/07/2015 unless:

- the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- extended, revised, or terminated by the issuing office.
- the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power will void this determination. Any future construction or alteration , including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

If we can be of further assistance, please contact our office at (847) 294-7575. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2013-AGL-12255-OE.

**Signature Control No: 203138517-204971544**  
Vivian Vilaro  
Specialist

( DNE )



Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2013-ACE-3506-OE

Issued Date: 12/12/2013

Deana Hermes  
IL Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Bridge NW end of the Truss
Location:	Savanna, IA
Latitude:	42-06-14.87N NAD 83
Longitude:	90-09-42.58W
Heights:	583 feet site elevation (SE) 77 feet above ground level (AGL) 660 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part I)  
 Within 5 days after the construction reaches its greatest height (7460-2, Part II)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory circular 70/7460-1 K Change 2.

This determination expires on 06/12/2015 unless:

- the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- extended, revised, or terminated by the issuing office.
- the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power will void this determination. Any future construction or alteration , including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

If we can be of further assistance, please contact our office at (816) 329-2508. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2013-ACE-3506-OE.

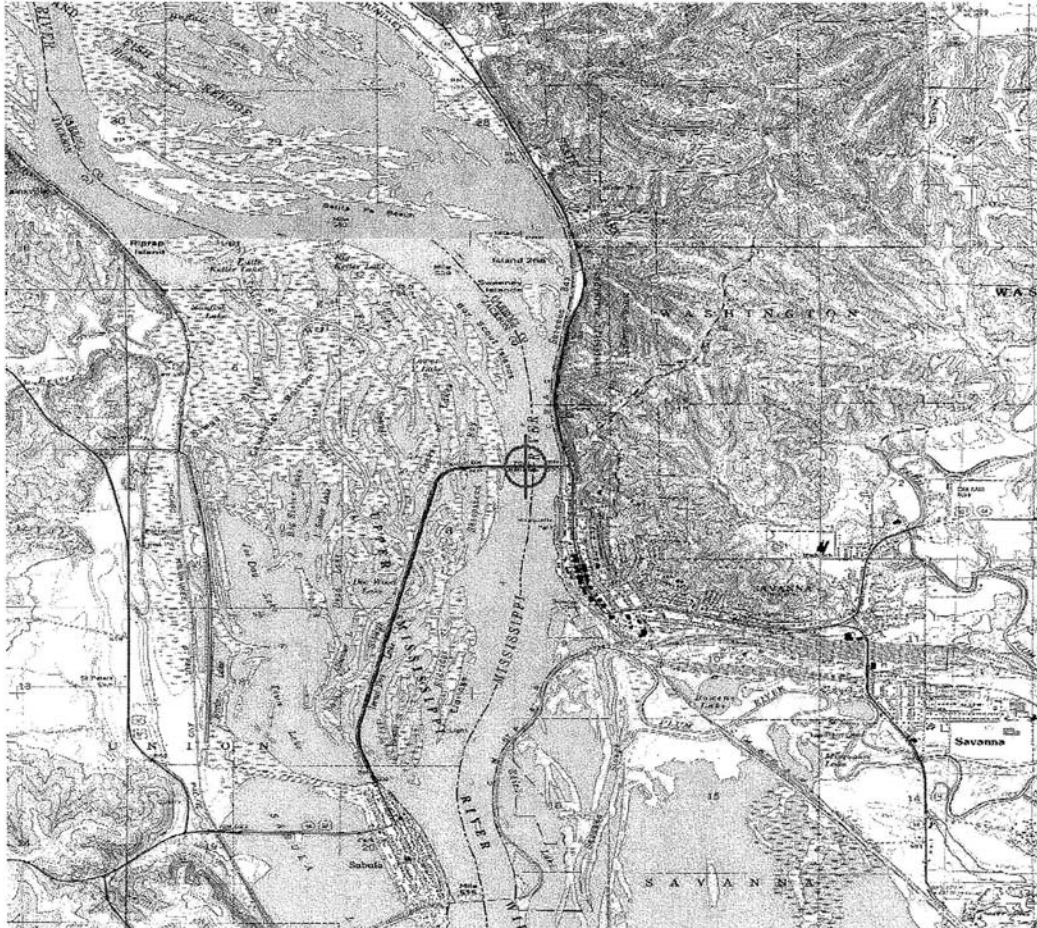
**Signature Control No: 203138511-203568207**

( DNE )

Vee Stewart  
Specialist

Attachment(s)  
Map(s)

TOPO Map for ASN 2013-ACE-3506-OE





Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2013-ACE-3507-OE

Issued Date: 12/12/2013

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Bridge Mid point West side on truss
Location:	Savanna, IA
Latitude:	42-06-14.87N NAD 83
Longitude:	90-09-40.77W
Heights:	583 feet site elevation (SE) 151 feet above ground level (AGL) 734 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part I)  
 Within 5 days after the construction reaches its greatest height (7460-2, Part II)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory circular 70/7460-1 K Change 2.

This determination expires on 06/12/2015 unless:

- the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- extended, revised, or terminated by the issuing office.
- the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.



NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power will void this determination. Any future construction or alteration , including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

If we can be of further assistance, please contact our office at (816) 329-2508. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2013-ACE-3507-OE.

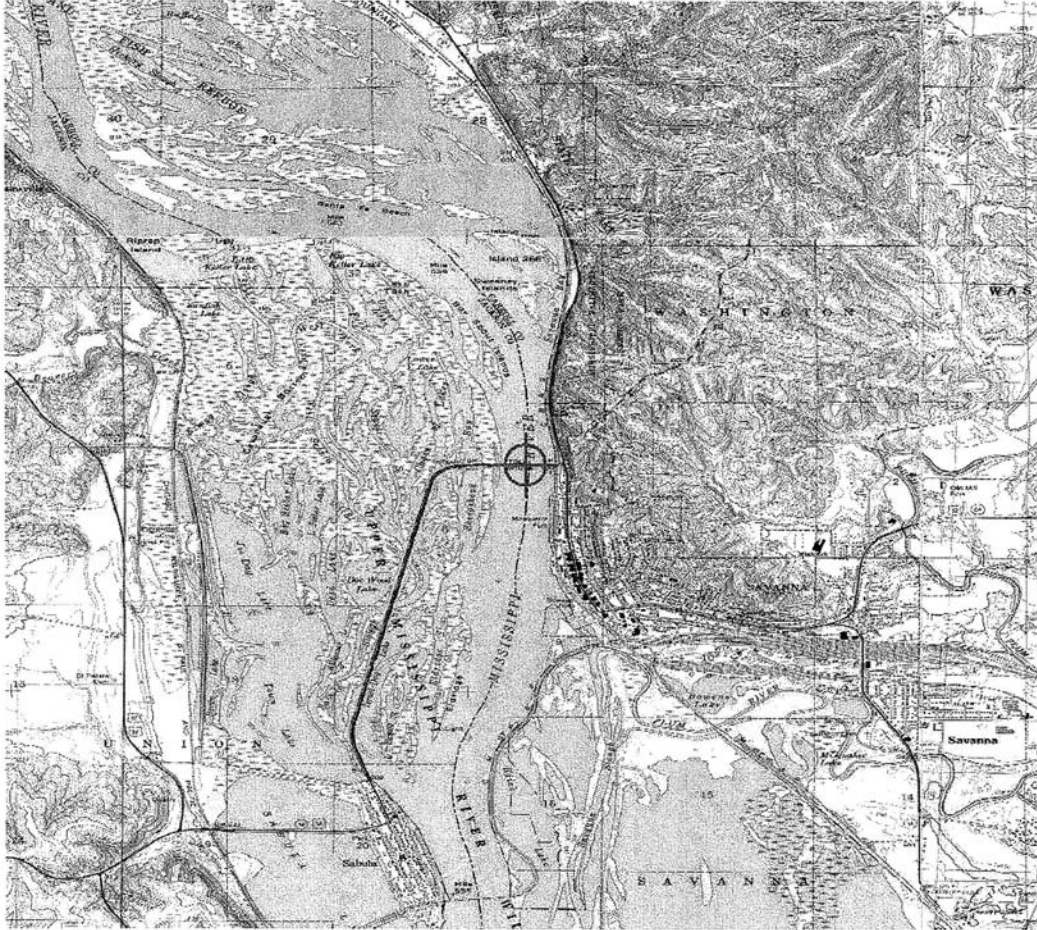
**Signature Control No: 203138514-203568208**

( DNE )

Vee Stewart  
Specialist

Attachment(s)  
Map(s)

TOPO Map for ASN 2013-ACE-3507-OE





Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2014-AGL-15689-OE

Issued Date: 01/13/2015

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Crane Crane #8
Location:	Savanna, IL
Latitude:	42-06-13.40N NAD 83
Longitude:	90-09-38.28W
Heights:	588 feet site elevation (SE) 272 feet above ground level (AGL) 860 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is (are) met:  
As a condition to this Determination, the structure is marked/lighted in accordance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, red lights - Chapters 4,5(Red),&12.

Any height exceeding 272 feet above ground level (860 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

This determination expires on 07/13/2016 unless extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. Any changes in coordinates and/or heights will void this determination. Any future construction or alteration, including increase to heights, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as

indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

**This determination did not include an evaluation of the permanent structure associated with the use of this temporary structure. If the permanent structure will exceed Title 14 of the Code of Federal Regulations, part 77.9, a separate aeronautical study and FAA determination is required.**

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

If you have any questions, please contact our office at (847) 294-7458. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2014-AGL-15689-OE

**Signature Control No: 238685030-239921331**  
Fred Souchet  
Specialist

( TMP )



Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2014-AGL-15690-OE

Issued Date: 01/13/2015

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Crane Crane #9
Location:	Savanna, IL
Latitude:	42-06-13.39N NAD 83
Longitude:	90-09-34.96W
Heights:	588 feet site elevation (SE) 272 feet above ground level (AGL) 860 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is (are) met:  
As a condition to this Determination, the structure is marked/lighted in accordance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, red lights - Chapters 4,5(Red),&12.

Any height exceeding 272 feet above ground level (860 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

This determination expires on 07/13/2016 unless extended, revised, or terminated by the issuing office.

**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. Any changes in coordinates and/or heights will void this determination. Any future construction or alteration, including increase to heights, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as

indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

**This determination did not include an evaluation of the permanent structure associated with the use of this temporary structure. If the permanent structure will exceed Title 14 of the Code of Federal Regulations, part 77.9, a separate aeronautical study and FAA determination is required.**

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

If you have any questions, please contact our office at (847) 294-7458. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2014-AGL-15690-OE

**Signature Control No: 238685031-239921332**  
Fred Souchet  
Specialist

( TMP )



Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2014-AGL-15691-OE

Issued Date: 01/13/2015

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Crane Crane #10
Location:	Savanna, IL
Latitude:	42-06-13.38N NAD 83
Longitude:	90-09-31.64W
Heights:	588 feet site elevation (SE) 272 feet above ground level (AGL) 860 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is (are) met:  
As a condition to this Determination, the structure is marked/lighted in accordance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, red lights - Chapters 4,5(Red),&12.

Any height exceeding 272 feet above ground level (860 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

This determination expires on 07/13/2016 unless extended, revised, or terminated by the issuing office.

**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. Any changes in coordinates and/or heights will void this determination. Any future construction or alteration, including increase to heights, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as

indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

**This determination did not include an evaluation of the permanent structure associated with the use of this temporary structure. If the permanent structure will exceed Title 14 of the Code of Federal Regulations, part 77.9, a separate aeronautical study and FAA determination is required.**

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

If you have any questions, please contact our office at (847) 294-7458. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2014-AGL-15691-OE

**Signature Control No: 238685032-239921330**  
Fred Souchet  
Specialist

( TMP )





Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2014-AGL-15692-OE

Issued Date: 01/13/2015

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\* TERMINATION \*\***

The aeronautical study concerning the following project has been terminated:

Structure:	Crane East End - Crane #11
Location:	Savanna, IL
Latitude:	42-06-13.37N NAD 83
Longitude:	90-09-28.82W
Heights:	588 feet site elevation (SE) 272 feet above ground level (AGL) 860 feet above mean sea level (AMSL)

This aeronautical study is terminated because:  
Sponsor requested we terminate this study from the project they submitted.

If you need to reactivate the study, it will be necessary for you to re-file notice using the electronic filing system available on our website [oeaaa.faa.gov](http://oeaaa.faa.gov).

If we can be of further assistance, please contact our office at (847) 294-8084. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2014-AGL-15692-OE.

**Signature Control No: 238685033-239928071**  
Carole Bernacchi  
Technician

( TER )



Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2014-AGL-15693-OE

Issued Date: 01/13/2015

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Crane East End (on Land) Crane #12
Location:	Savanna, IL
Latitude:	42-06-13.36N NAD 83
Longitude:	90-09-27.54W
Heights:	632 feet site elevation (SE) 180 feet above ground level (AGL) 812 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is (are) met:  
As a condition to this Determination, the structure is marked/lighted in accordance with FAA Advisory circular 70/7460-1 K. Change 2, Obstruction Marking and Lighting, red lights - Chapters 4,5(Red),&12.

Any height exceeding 180 feet above ground level (812 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

This determination expires on 07/13/2016 unless extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. Any changes in coordinates and/or heights will void this determination. Any future construction or alteration, including increase to heights, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as

indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

**This determination did not include an evaluation of the permanent structure associated with the use of this temporary structure. If the permanent structure will exceed Title 14 of the Code of Federal Regulations, part 77.9, a separate aeronautical study and FAA determination is required.**

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

If you have any questions, please contact our office at (847) 294-7458. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2014-AGL-15693-OE

**Signature Control No: 238685040-239921333**  
Fred Souchet  
Specialist

( TMP )



Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2014-ACE-5269-OE

Issued Date: 01/09/2015

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Crane West End - Crane #1
Location:	Savanna, IA
Latitude:	42-06-13.48N NAD 83
Longitude:	90-10-01.49W
Heights:	588 feet site elevation (SE) 272 feet above ground level (AGL) 860 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is (are) met:  
As a condition to this Determination, the structure is marked/lighted in accordance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, flags/red lights - Chapters 3(Marked),4,5(Red),&12.

This determination expires on 07/09/2016 unless extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. Any changes in coordinates and/or heights will void this determination. Any future construction or alteration, including increase to heights, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

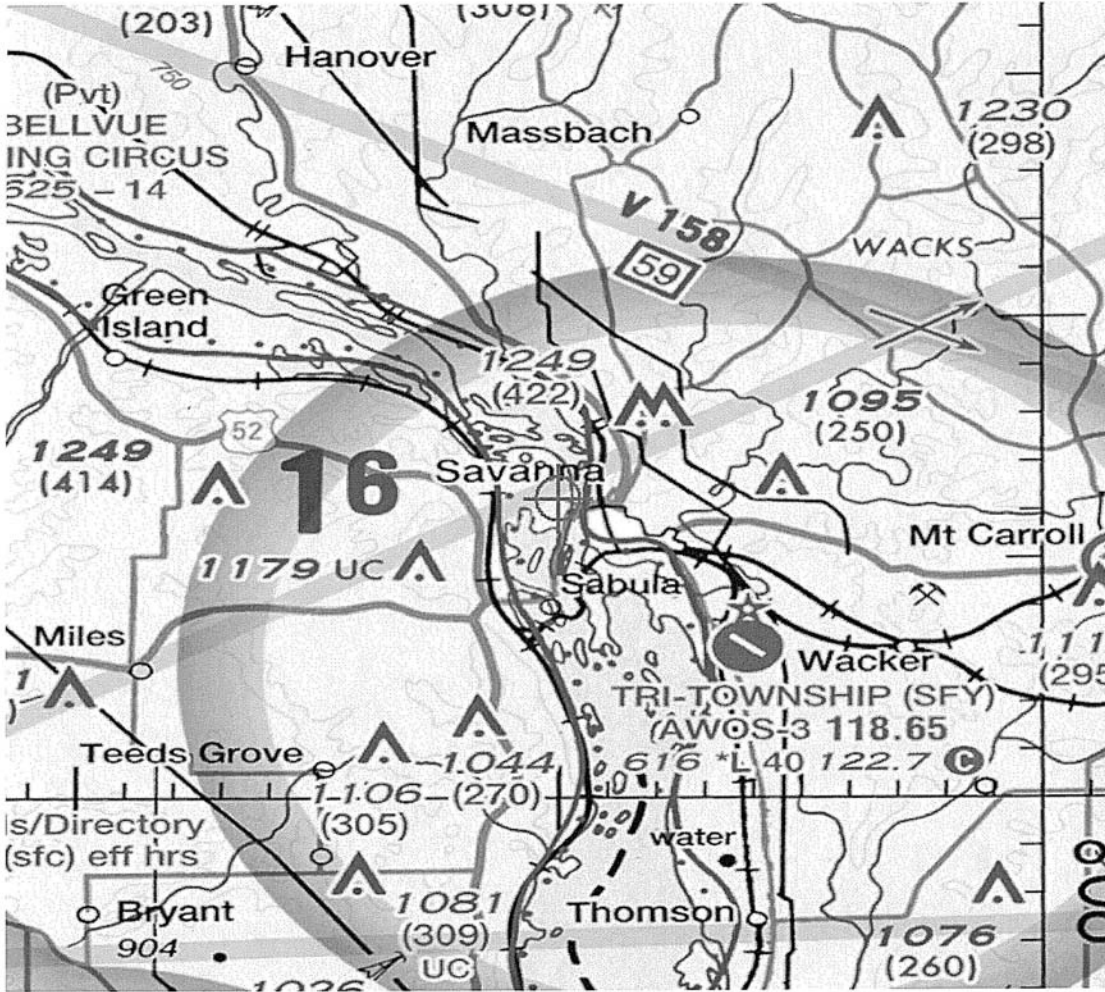
If you have any questions, please contact our office at (816) 329-2523. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2014-ACE-5269-OE

**Signature Control No: 238685018-239615387**  
Steve Phillips  
Specialist

( TMP )

Attachment(s)  
Map(s)

Sectional Map for ASN 2014-ACE-5269-OE





Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2014-ACE-5270-OE

Issued Date: 01/09/2015

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Crane #2
Location:	Savanna, IA
Latitude:	42-06-13.47N NAD 83
Longitude:	90-09-58.18W
Heights:	588 feet site elevation (SE) 272 feet above ground level (AGL) 860 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is (are) met:  
As a condition to this Determination, the structure is marked/lighted in accordance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, flags/red lights - Chapters 3(Marked),4,5(Red),&12.

This determination expires on 07/09/2016 unless extended, revised, or terminated by the issuing office.

**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. Any changes in coordinates and/or heights will void this determination. Any future construction or alteration, including increase to heights, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

If you have any questions, please contact our office at (816) 329-2523. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2014-ACE-5270-OE

**Signature Control No: 238685021-239615388**

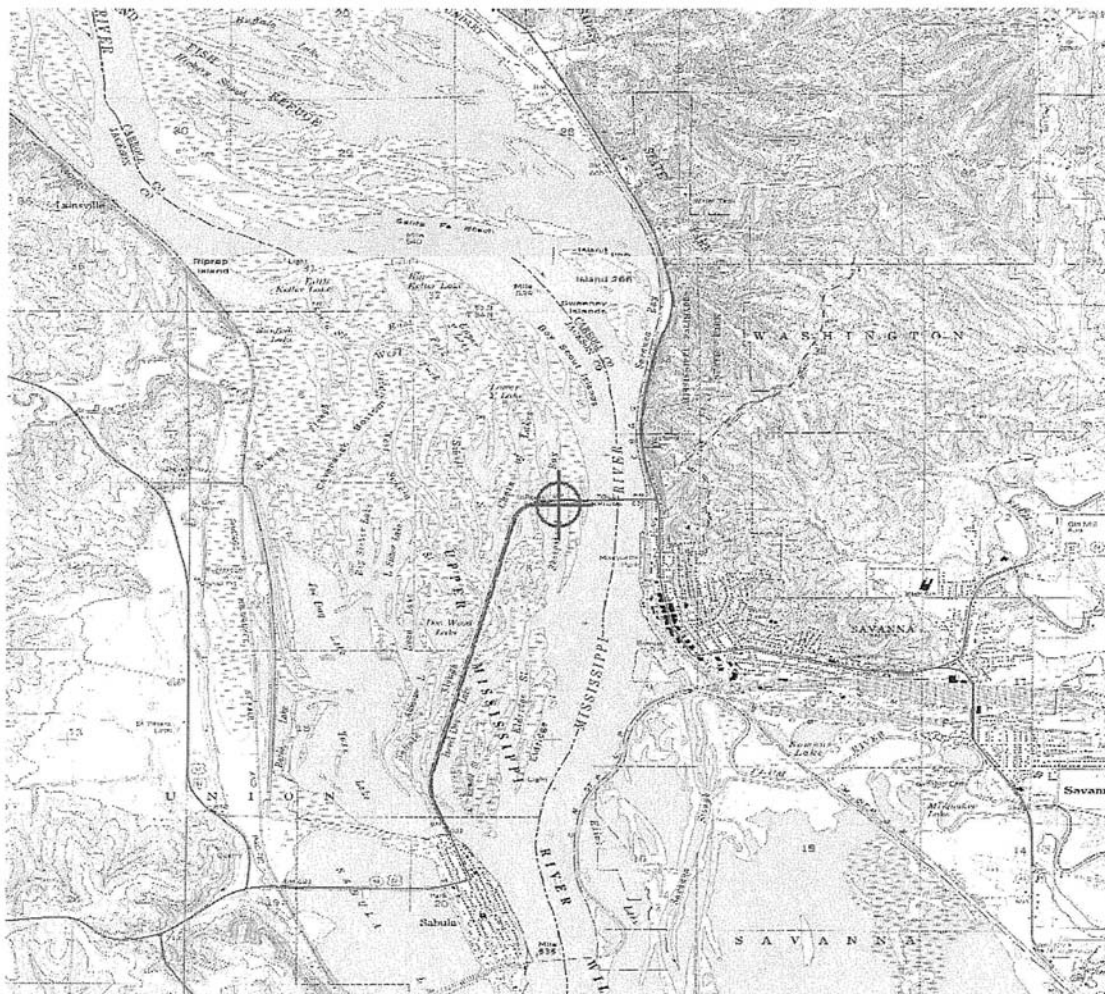
( TMP )

Steve Phillips  
Specialist

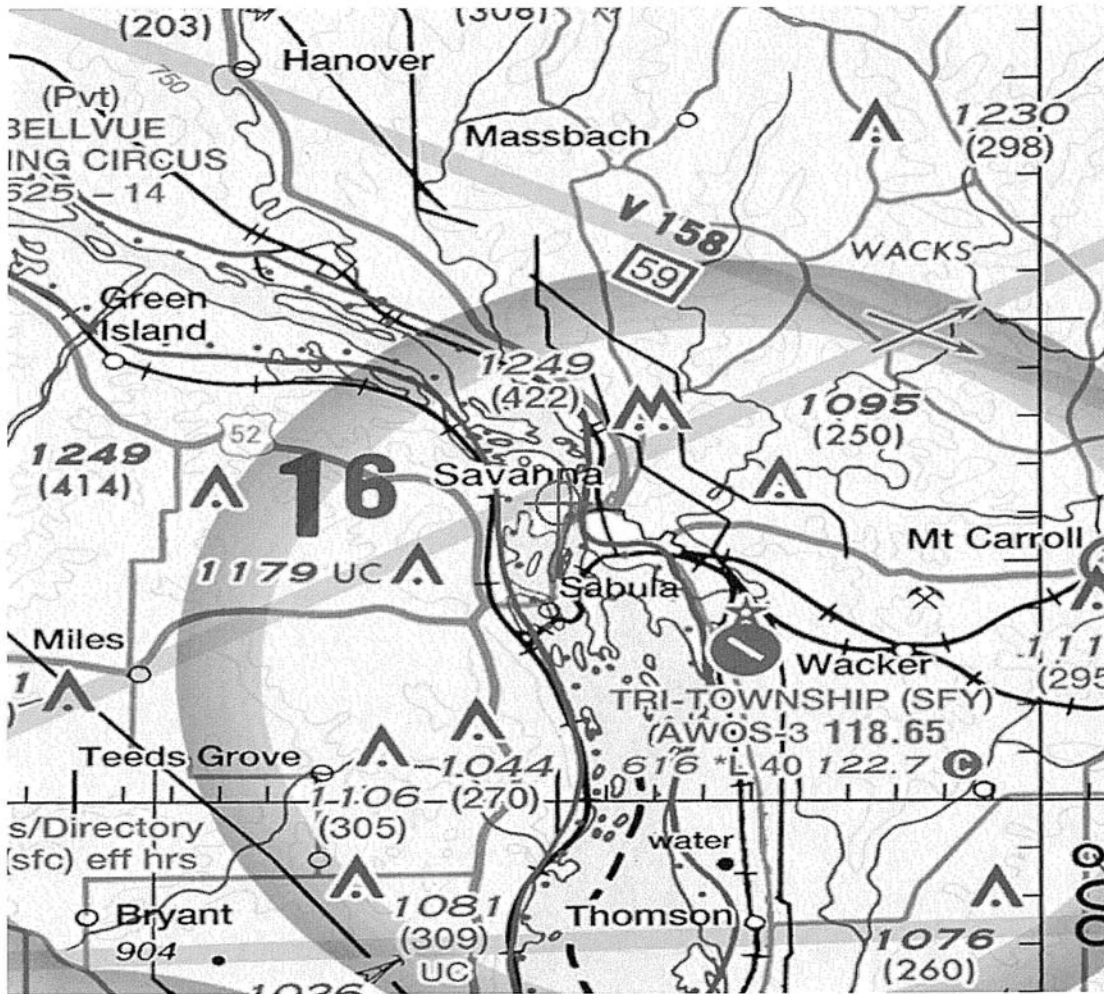
Attachment(s)  
Map(s)



TOPO Map for ASN 2014-ACE-5270-OE



Sectional Map for ASN 2014-ACE-5270-OE





Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2014-ACE-5271-OE

Issued Date: 01/09/2015

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Crane #3
Location:	Savanna, IA
Latitude:	42-06-13.46N NAD 83
Longitude:	90-09-54.86W
Heights:	588 feet site elevation (SE) 272 feet above ground level (AGL) 860 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is (are) met:  
As a condition to this Determination, the structure is marked/lighted in accordance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, flags/red lights - Chapters 3(Marked),4,5(Red),&12.

This determination expires on 07/09/2016 unless extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. Any changes in coordinates and/or heights will void this determination. Any future construction or alteration, including increase to heights, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

If you have any questions, please contact our office at (816) 329-2523. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2014-ACE-5271-OE

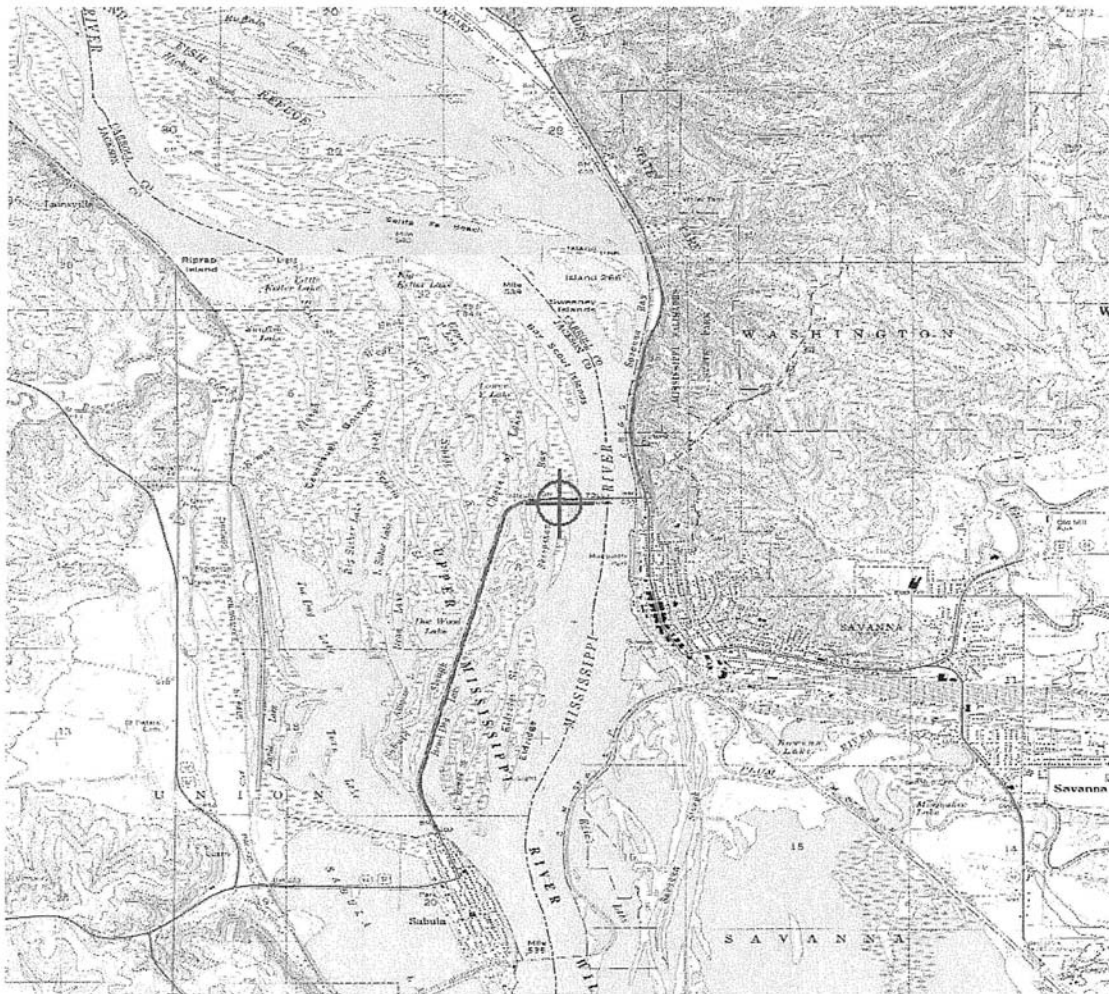
**Signature Control No: 238685022-239615393**

( TMP )

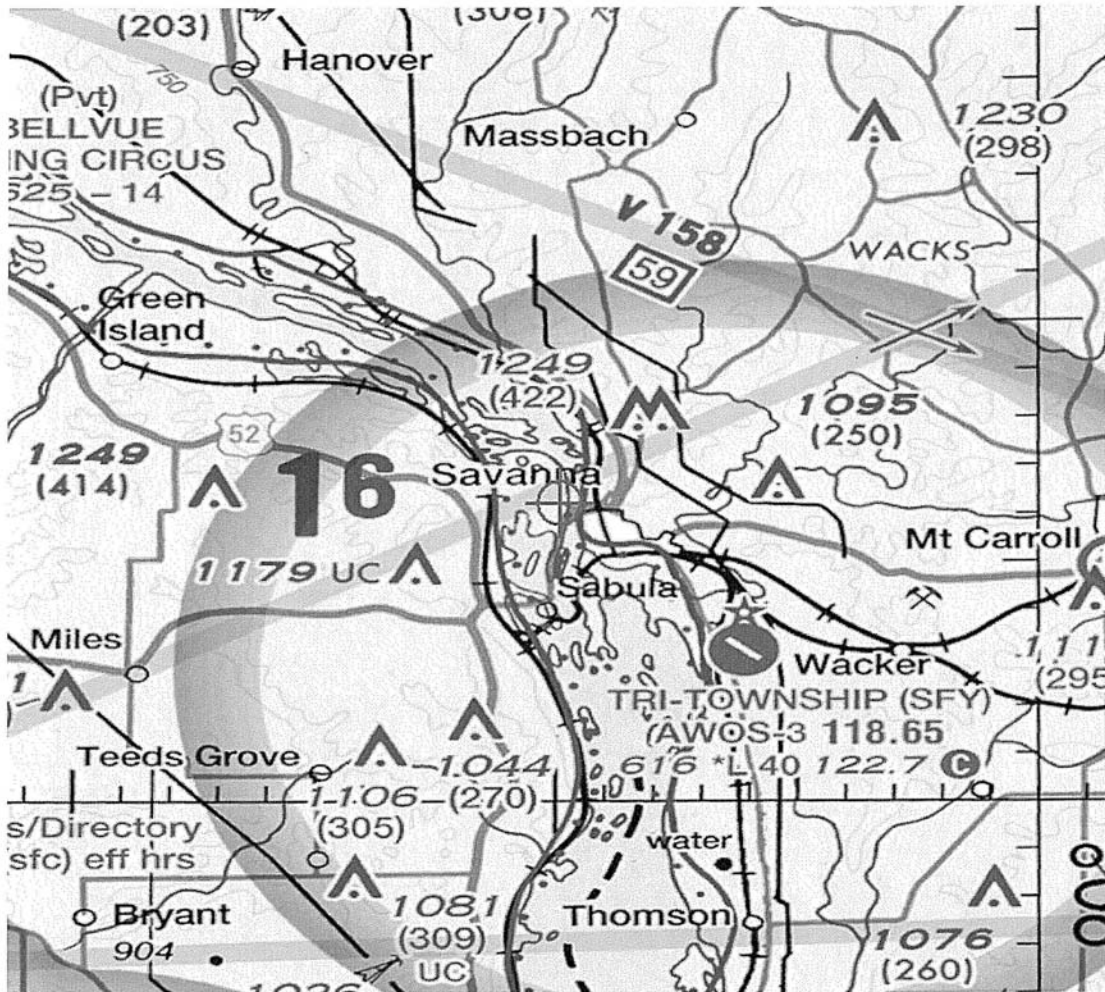
Steve Phillips  
Specialist

Attachment(s)  
Map(s)

TOPO Map for ASN 2014-ACE-5271-OE



Sectional Map for ASN 2014-ACE-5271-OE







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2014-ACE-5272-OE

Issued Date: 01/09/2015

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Crane #4
Location:	Savanna, IA
Latitude:	42-06-13.45N NAD 83
Longitude:	90-09-51.54W
Heights:	588 feet site elevation (SE) 272 feet above ground level (AGL) 860 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is (are) met:  
As a condition to this Determination, the structure is marked/lighted in accordance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, flags/red lights - Chapters 3(Marked),4,5(Red),&12.

This determination expires on 07/09/2016 unless extended, revised, or terminated by the issuing office.

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If you have any questions, please contact our office at (816) 329-2523. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2014-ACE-5272-OE

**Signature Control No: 238685023-239615389**

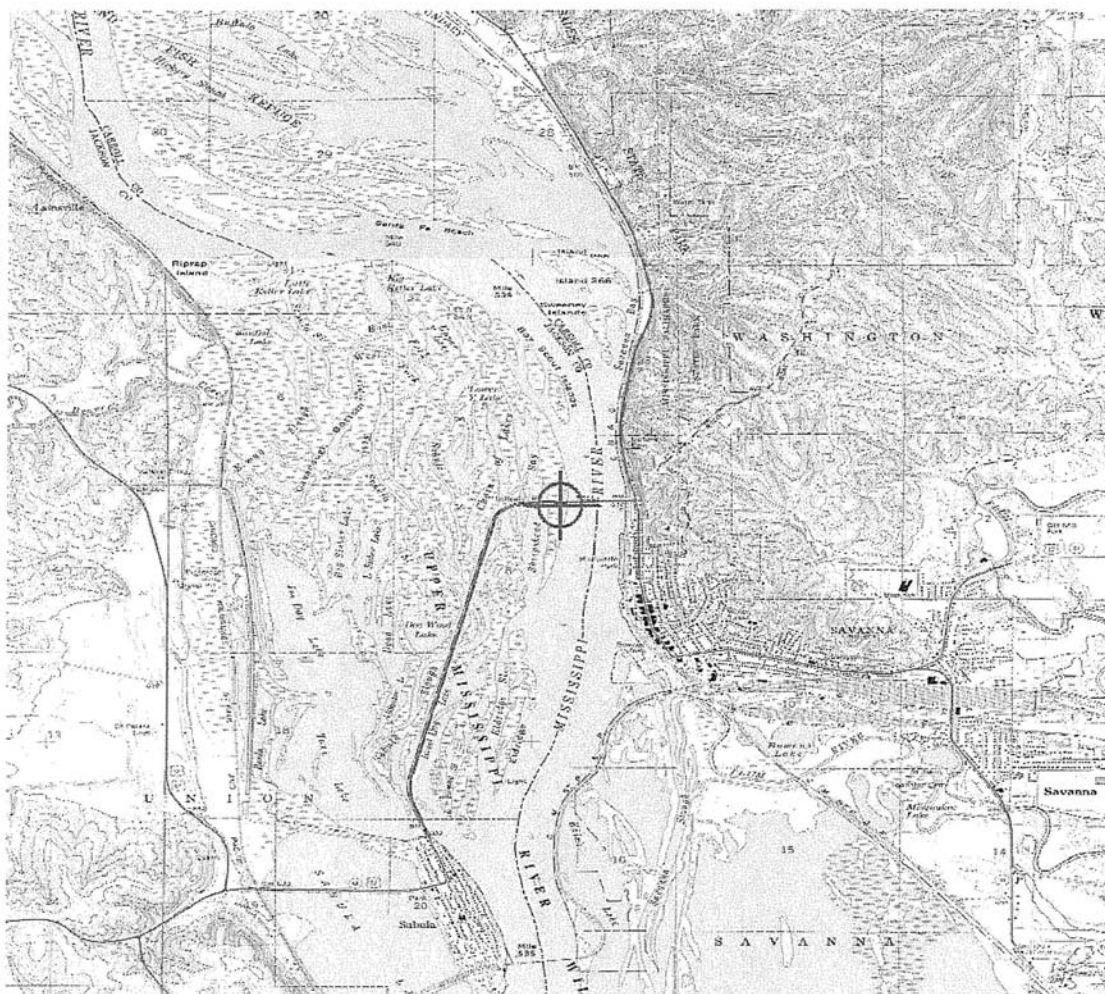
( TMP )

Steve Phillips  
Specialist

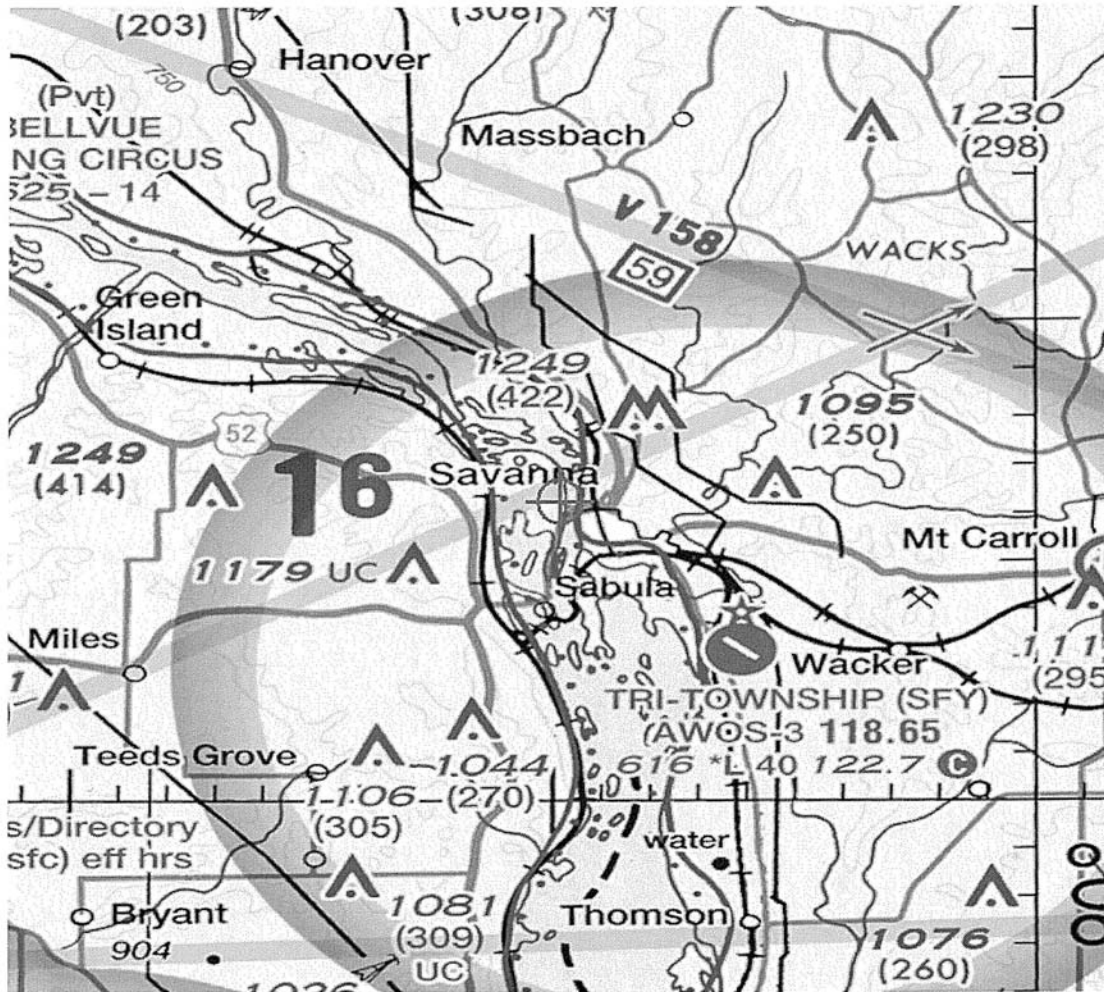
Attachment(s)  
Map(s)



TOPO Map for ASN 2014-ACE-5272-OE



Sectional Map for ASN 2014-ACE-5272-OE





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Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2014-ACE-5273-OE

Issued Date: 01/09/2015

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Crane #5
Location:	Savanna, IA
Latitude:	42-06-13.44N NAD 83
Longitude:	90-09-48.23W
Heights:	588 feet site elevation (SE) 272 feet above ground level (AGL) 860 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is (are) met:  
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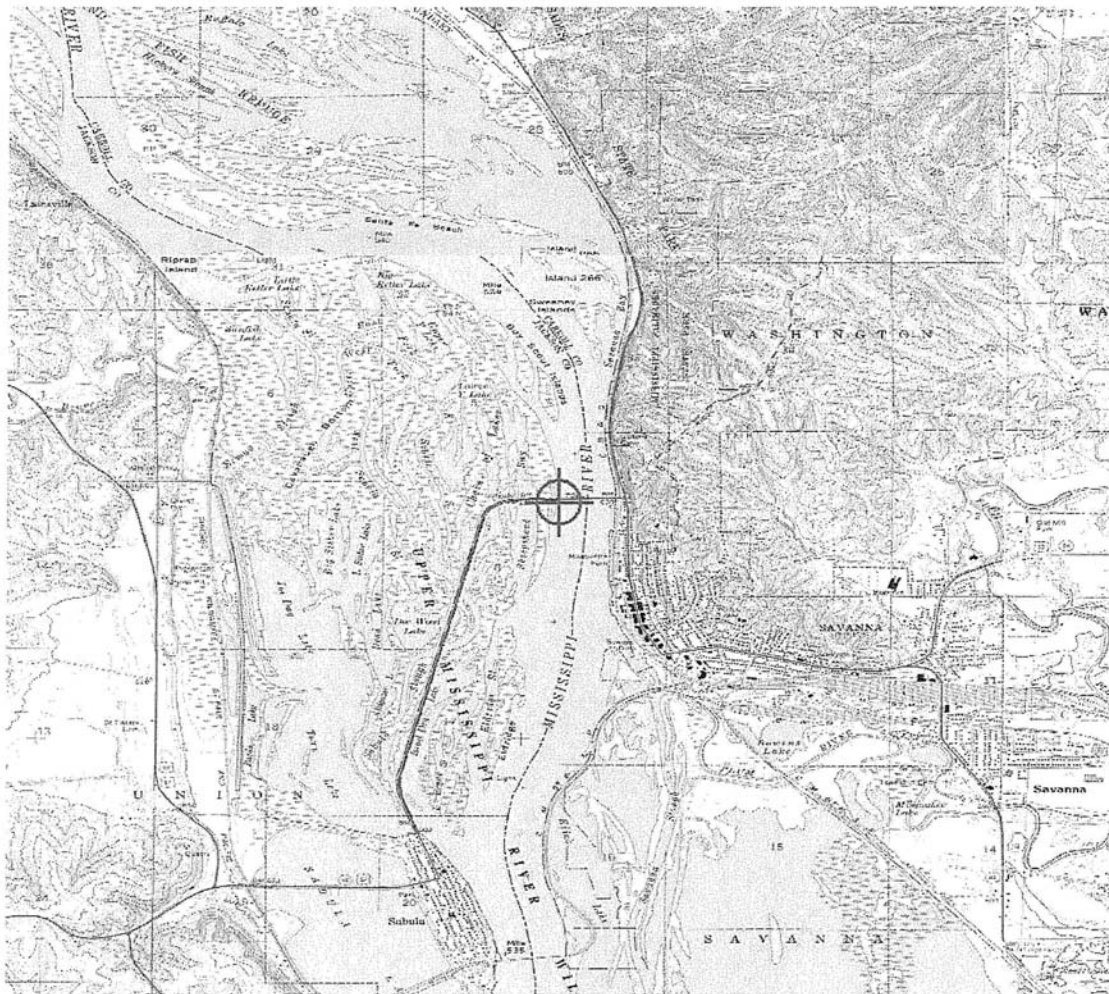
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( TMP )

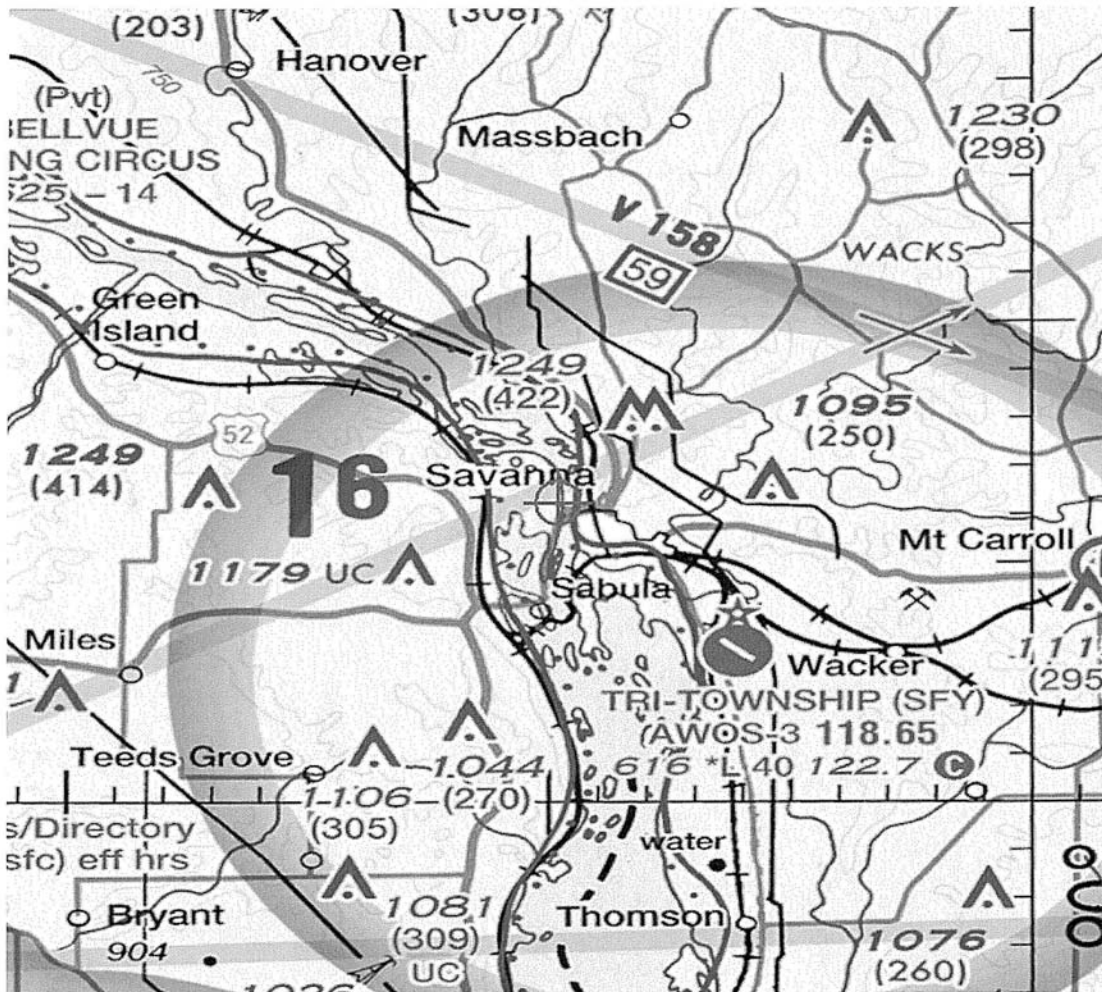
Steve Phillips  
Specialist

Attachment(s)  
Map(s)

TOPO Map for ASN 2014-ACE-5273-OE



Sectional Map for ASN 2014-ACE-5273-OE







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Fort Worth, TX 76193

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2014-ACE-5274-OE

Issued Date: 01/09/2015

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Crane #6
Location:	Savanna, IA
Latitude:	42-06-13.43N NAD 83
Longitude:	90-09-44.91W
Heights:	588 feet site elevation (SE) 272 feet above ground level (AGL) 860 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is (are) met:  
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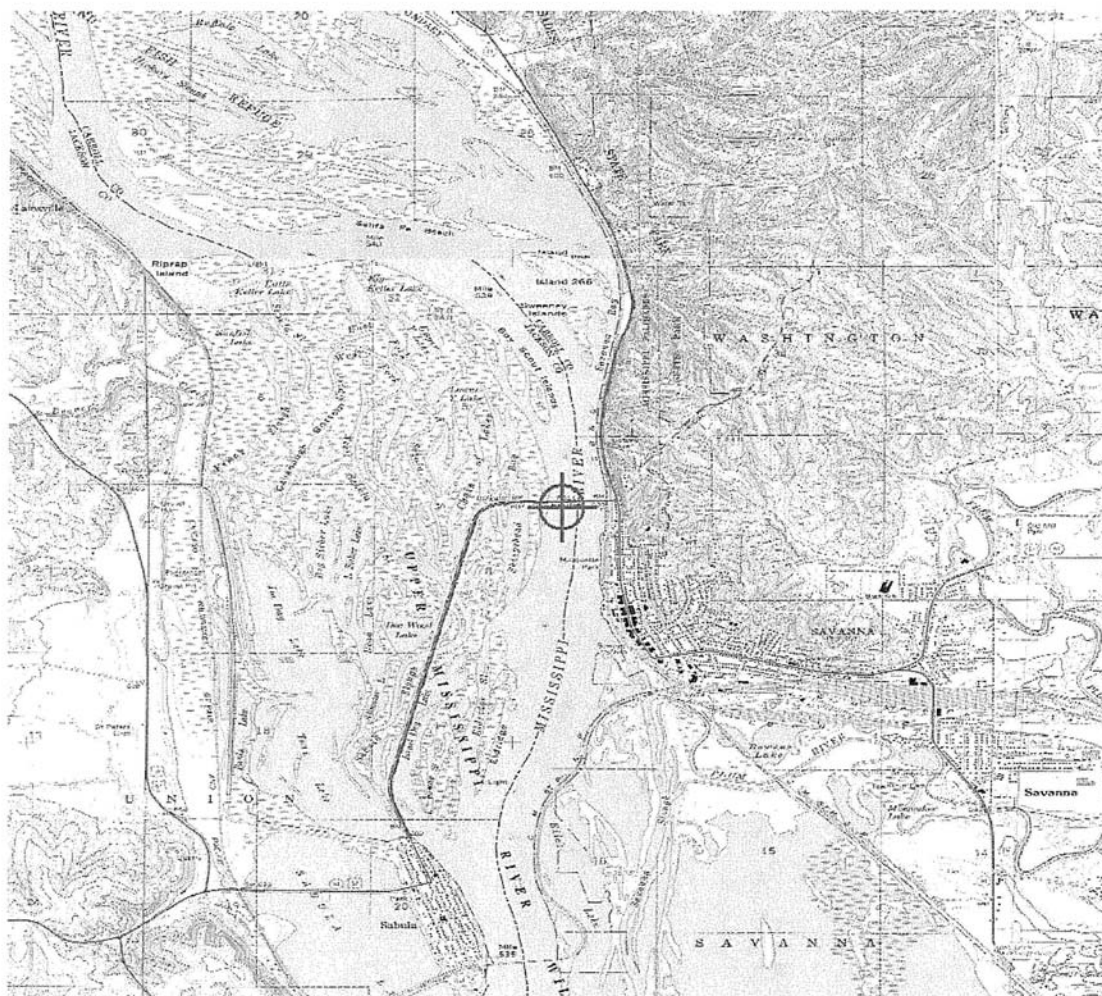
**Signature Control No: 238685025-239615391**  
Steve Phillips  
Specialist

( TMP )

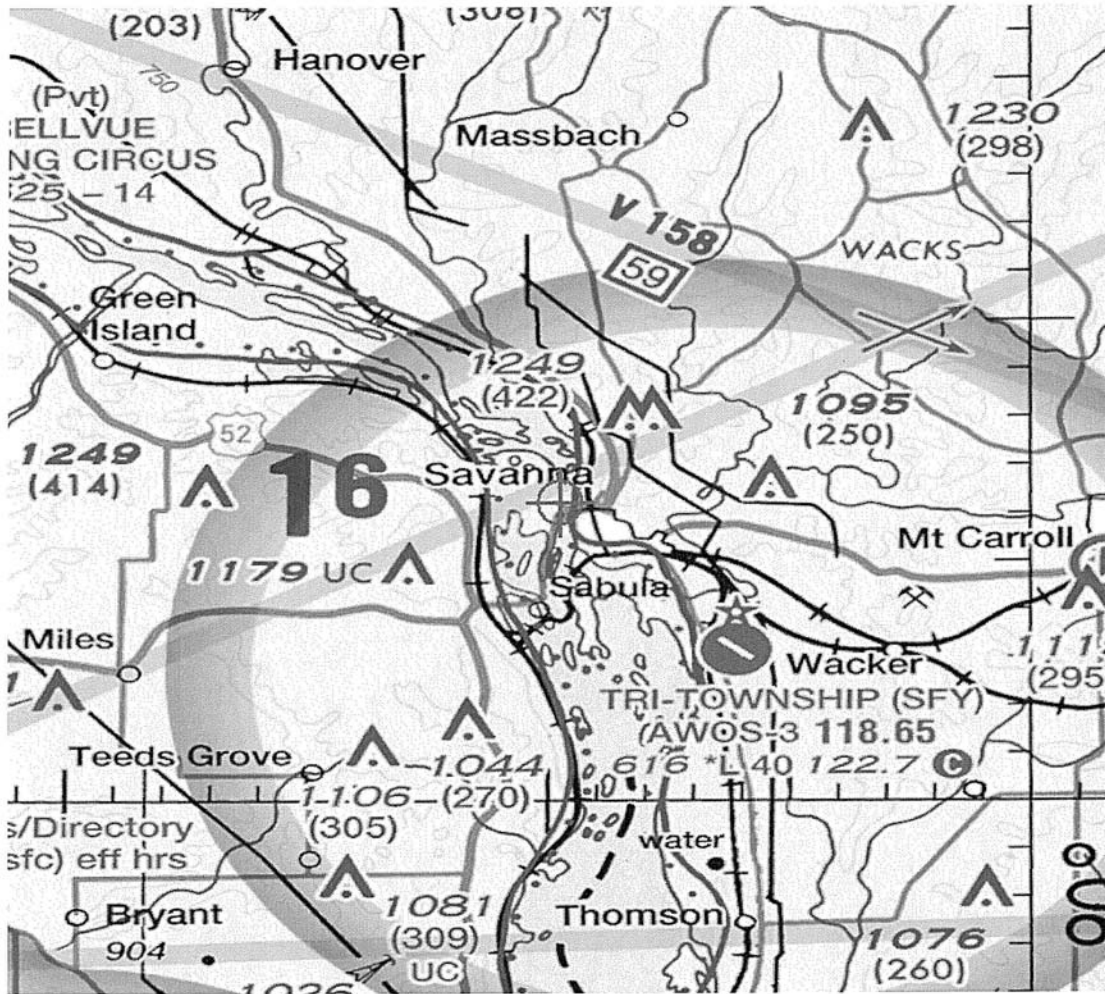
Attachment(s)  
Map(s)



TOPO Map for ASN 2014-ACE-5274-OE



Sectional Map for ASN 2014-ACE-5274-OE





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2601 Meacham Boulevard  
Fort Worth, TX 76193

Aeronautical Study No.  
2014-ACE-5275-OE

Issued Date: 01/09/2015

Deana Hermes  
IL. Dept. of Transportation  
819 Depot Ave  
Dixon, IL 61021

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Crane #7
Location:	Savanna, IA
Latitude:	42-06-13.41N NAD 83
Longitude:	90-09-41.59W
Heights:	588 feet site elevation (SE) 272 feet above ground level (AGL) 860 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is (are) met:  
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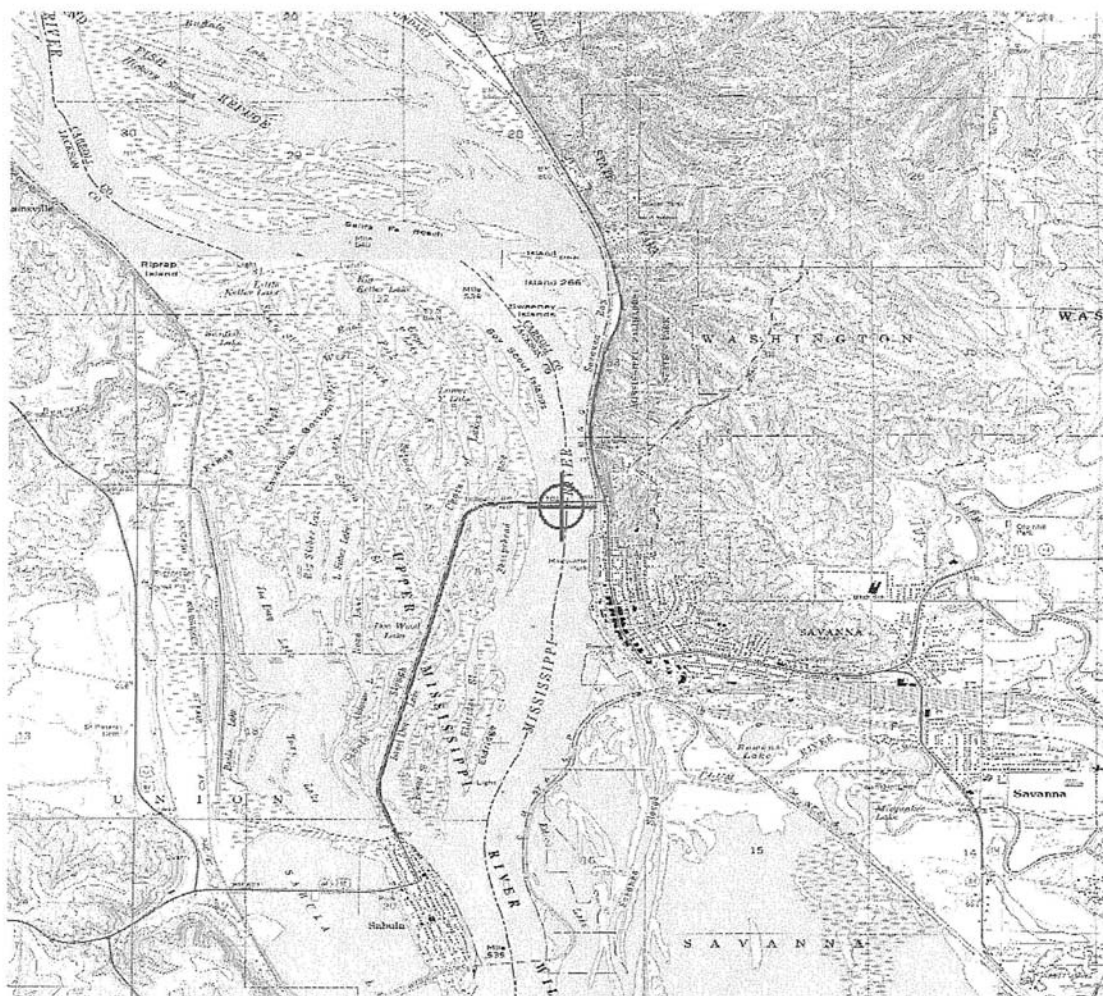
If you have any questions, please contact our office at (816) 329-2523. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2014-ACE-5275-OE

**Signature Control No: 238685026-239615390**  
Steve Phillips  
Specialist

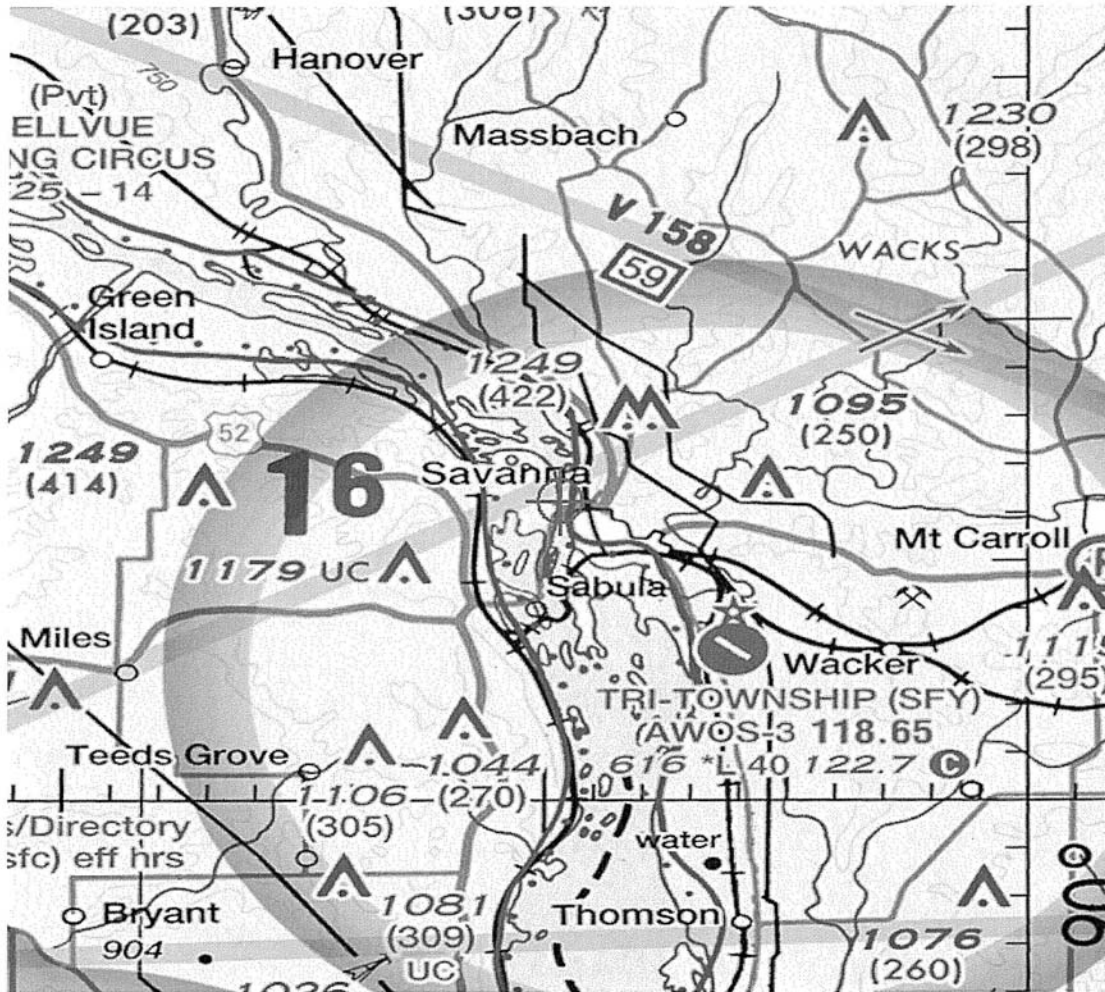
( TMP )

Attachment(s)  
Map(s)

TOPO Map for ASN 2014-ACE-5275-OE



Sectional Map for ASN 2014-ACE-5275-OE





SWPPP



Storm Water Pollution Prevention Plan

Route FAP Route 17 Marked Rte. US 52 / IL 64 / IL 84  
 Section 104B-2 Project No. \_\_\_\_\_  
 County Carroll, IL / Jackson, IA Contract No. 64G59

This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issued by the Illinois Environmental Protection Agency (IEPA) 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.

\_\_\_\_\_  
 Print Name  
 \_\_\_\_\_  
 Title  
 ILLINOIS DEPARTMENT OF TRANSPORTATION  
 Agency  
 \_\_\_\_\_  
 Signature  
 3/20/15  
 Date

I. Site Description:

- A. Provide a description of the project location (include latitude and longitude):  
 Bridge replacement for US 52 / IL 64 over the Mississippi River in Carroll County, IL & Jackson County, IA.  
 (LAT. 42 DEG 06' 15" N, LONG. 90 DEG 09' 28" W)
- B. Provide a description of the construction activity which is the subject of this plan:  
 The construction activity consists of removing an existing bridge (SN 008-6000), and replacing it with a proposed bridge (SN 008-0052) over the Mississippi River. Additional construction includes: Reconstruction of US 52 in Iowa (1,460 feet) and IL 84 (2,350') in Illinois. A detention pond, drainage system, temporary pavement, embankment, utility work, lighting, permanent retaining wall, and seeding & permanent stabilization will also be included in the contract.
- C. Provide the estimated duration of this project:  
 The project is estimated to last 29 months.
- D. The total area of the construction site is estimated to be 29.9 acres.  
 The total area of the site estimated to be disturbed by excavation, grading or other activities is 29.9 acres.
- E. The following is a weighted average of the runoff coefficient for this project after construction activities are completed:  
 C = 0.32
- F. List all soils found within project boundaries. Include map unit name, slope information, and erosivity:  
 37B - Worthen silt loam, 2 to 5 percent slopes  
 905G - New Glarus - Lam oille silt loams, 35 to 60 percent slopes  
 1490 - Caneek Silt Loam, 0 to 2 percent slopes
- G. Provide an aerial extent of wetland acreage at the site:

Two wetlands will be impacted. Site No. 10 & Site No. 11 on the Iowa side of the Mississippi River. Site No. 10 will have 0.37 ac. of permanent and 2.22 ac. of temporary impacts. Site No. 11 will have 0.06 ac. of permanent & 0.30 ac. of temporary impacts. The total impacts will be 0.43 ac. of permanent impacts and 2.52 ac of temporary impacts. All impacts are within Iowa. There are no wetland impacts in Illinois.

- H. Provide a description of potentially erosive areas associated with this project:
- The existing Iowa Causeway has 1:2 side slopes. The wetland area in Iowa is on an island, and portions of the island will be cleared of vegetation to accommodate the bridge construction. The bluff to the east of IL 84 and portions of the embankment between IL 84 and the BNSF Railroad have 1:2 & varying slopes. Grading of ditches and in-stream work is also proposed.
- I. The following is a description of soil disturbing activities by stages, their locations, and their erosive factors (e.g. steepness of slopes, length of slopes, etc):
- Pre-Stage activity in Iowa along US 52 consists of clearing and temporary access construction. The slopes in Iowa are 1:2 and are approximately 10'-15' above the Normal Water Level of the Mississippi River. Iowa Causeway embankment construction will occur in Stage 1.
- The bridge construction will occur throughout the duration of construction. No slopes are associated with this construction except at the island within Iowa. The slopes on the island are relatively flat. Instream work will include foundation construction using silt curtains, coffer cells and coffer dams.
- The detention pond and grading adjacent to IL 84 in Illinois will occur during stage 3. The slopes at this location vary from 1:4 to 1:2. The maximum slope height at this location is approximately 25'.
- The construction of the retaining wall adjacent to IL 84 will occur in stage 1. The slopes at the retaining wall are 1:2 and their heights are greater than 100'.
- J. See the erosion control plans and/or drainage plans for this contract for information regarding drainage patterns, approximate slopes anticipated before and after major grading activities, locations where vehicles enter or exit the site and controls to prevent offsite sediment tracking (to be added after contractor identifies locations), areas of soil disturbance, the location of major structural and non-structural 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 surface water including wetlands.
- K. Identify who owns the drainage system (municipality or agency) this project will drain into:
- The Illinois Department of Transportation will own and maintain the closed drainage system along IL 84. The Iowa Department of Transportation owns the Iowa Causeway.
- L. The following is a list of General NPDES ILR40 permittees within whose reporting jurisdiction this project is located.
- Illinois Department of Transportation
- M. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. The location of the receiving waters can be found on the erosion and sediment control plans:
- The Mississippi River
- N. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes, highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc.
- The 1:2 sloped areas behind the proposed retaining wall along IL 84 beyond the retaining wall limits will not be disturbed.
- O. The following sensitive environmental resources are associated with this project, and may have the potential to be impacted by the proposed development:
- Floodplain
  - Wetland Riparian
  - Threatened and Endangered Species



- Historic Preservation
- 303(d) Listed receiving waters for suspended solids, turbidity, or siltation
- Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity or siltation
- Applicable Federal, Tribal, State or Local Programs
- Other

1. 303(d) Listed receiving waters (fill out this section if checked above):

- a. The name(s) of the listed water body, and identification of all pollutants causing impairment:
- b. Provide a description of how erosion and sediment control practices will prevent a discharge of sediment resulting from a storm event equal to or greater than a twenty-five (25) year, twenty-four (24) hour rainfall event:
- c. Provide a description of the location(s) of direct discharge from the project site to the 303(d) water body:
- d. Provide a description of the location(s) of any dewatering discharges to the MS4 and/or water body:

2. TMDL (fill out this section if checked above)

- a. The name(s) of the listed water body:
- b. Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL:
- c. If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet that allocation:

P. The following pollutants of concern will be associated with this construction project:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Soil Sediment             | <input checked="" type="checkbox"/> Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids) |
| <input checked="" type="checkbox"/> Concrete                  | <input checked="" type="checkbox"/> Antifreeze / Coolants  |
| <input checked="" type="checkbox"/> Concrete Truck Waste      | <input checked="" type="checkbox"/> Waste water from cleaning construction equipment               |
| <input checked="" type="checkbox"/> Concrete Curing Compounds | <input type="checkbox"/> Other (specify)   |
| <input checked="" type="checkbox"/> Solid Waste Debris        | <input type="checkbox"/> Other (specify)   |
| <input checked="" type="checkbox"/> Paints                    | <input type="checkbox"/> Other (specify)   |
| <input checked="" type="checkbox"/> Solvents                  | <input type="checkbox"/> Other (specify)   |
| <input checked="" type="checkbox"/> Fertilizers / Pesticides  | <input type="checkbox"/> Other (specify)   |

**II. Controls:**

This section of the plan addresses the controls that will be implemented for each of the major construction activities described in I.C. above and for all use areas, borrow sites, and waste sites. For each measure discussed, the Contractor will be responsible for its implementation as indicated. The Contractor shall provide to the Resident Engineer a plan for the implementation of the measures indicated. The Contractor, and subcontractors, will notify the Resident Engineer of any proposed changes, maintenance, or modifications to keep construction activities compliant with the Permit ILR10. Each such Contractor has signed the required certification on forms which are attached to, and are a part of, this plan:

- A. **Erosion and Sediment Controls:** At a minimum, controls must be coordinated, installed and maintained to:
1. Minimize the amount of soil exposed during construction activity;
  2. Minimize the disturbance of steep slopes;
  3. Maintain natural buffers around surface waters, direct storm water to vegetated areas to increase sediment removal and maximize storm water infiltration, unless infeasible;
  4. Minimize soil compaction and, unless infeasible, preserve topsoil.

B. **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 but are not limited to: temporary seeding, permanent seeding, mulching, geotextiles, sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided below in II(B)(1) and II(B)(2), stabilization measures shall be initiated **immediately** where construction activities have temporarily or permanently ceased, but in no case more than **one (1) day** after the construction activity in that portion of the site has temporarily or permanently ceases on all disturbed portions of the site where construction will not occur for a period of fourteen (14) or more calendar days.

1. Where the initiation of stabilization measures is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.
2. On areas where construction activity has temporarily ceased and will resume after fourteen (14) days, a temporary stabilization method can be used.

The following stabilization practices will be used for this project:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Preservation of Mature Vegetation | <input checked="" type="checkbox"/> Erosion Control Blanket / Mulching |
| <input type="checkbox"/> Vegetated Buffer Strips                      | <input checked="" type="checkbox"/> Sodding                            |
| <input checked="" type="checkbox"/> Protection of Trees               | <input checked="" type="checkbox"/> Geotextiles                        |
| <input checked="" type="checkbox"/> Temporary Erosion Control Seeding | <input type="checkbox"/> Other (specify)                               |
| <input checked="" type="checkbox"/> Temporary Turf (Seeding, Class 7) | <input type="checkbox"/> Other (specify)                               |
| <input checked="" type="checkbox"/> Temporary Mulching                | <input type="checkbox"/> Other (specify)                               |
| <input checked="" type="checkbox"/> Permanent Seeding                 | <input type="checkbox"/> Other (specify)                               |

Describe how the stabilization practices listed above will be utilized during construction:

The area within the limits of the project will be improved and managed for the purpose of controlling erosion within the area, reducing water flow by temporary diversion and minimizing siltation off of the construction area. Temporary seeding will be applied on bare vegetated grounds and highly erodible areas. Mulch, Erosion Control Blankets and Turf Reinforcement Mats shall be applied in accordance with the plans and used at different slope conditions. Perimeter erosion barrier will be utilized in order to manage water draining off of the construction areas.

Describe how the stabilization practices listed above will be utilized after construction activities have been completed:

Vegetative cover will be established and become permanent and act as an erosion barrier.

- C. **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 but are not limited to: perimeter erosion barrier, earth dikes, drainage swales, sediment traps, ditch checks, 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.

The following structural practices will be used for this project:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Perimeter Erosion Barrier    | <input checked="" type="checkbox"/> Rock Outlet Protection |
| <input checked="" type="checkbox"/> Temporary Ditch Check        | <input checked="" type="checkbox"/> Riprap                 |
| <input checked="" type="checkbox"/> Storm Drain Inlet Protection | <input type="checkbox"/> Gabions                           |
| <input type="checkbox"/> Sediment Trap                           | <input type="checkbox"/> Slope Mattress                    |
| <input checked="" type="checkbox"/> Temporary Pipe Slope Drain   | <input checked="" type="checkbox"/> Retaining Walls        |

- |   |   |
|---|---|
| <input type="checkbox"/> Temporary Sediment Basin                 | <input checked="" type="checkbox"/> Slope Walls             |
| <input type="checkbox"/> Temporary Stream Crossing                | <input checked="" type="checkbox"/> Concrete Revetment Mats |
| <input checked="" type="checkbox"/> Stabilized Construction Exits | <input type="checkbox"/> Level Spreaders                    |
| <input checked="" type="checkbox"/> Turf Reinforcement Mats       | <input type="checkbox"/> Other (specify)                    |
| <input type="checkbox"/> Permanent Check Dams                     | <input type="checkbox"/> Other (specify)                    |
| <input type="checkbox"/> Permanent Sediment Basin                 | <input type="checkbox"/> Other (specify)                    |
| <input type="checkbox"/> Aggregate Ditch                          | <input type="checkbox"/> Other (specify)                    |
| <input checked="" type="checkbox"/> Paved Ditch                   | <input type="checkbox"/> Other (specify)                    |

Describe how the structural practices listed above will be utilized during construction:

Waters of the US within or adjacent to the project must be protected with perimeter erosion barrier.  
 All storm sewer inlet structures must be protected with storm sewer inlet protection (i.e Inlet Filters) per inlet protection details in the plan.  
 Temporary construction entrances and exits must be constructed at all locations where construction traffic enters or leaves the site.  
 All temporary erosion control methods shall remain in place with proper maintenance until permanent erosion control is in place and working properly and all turf areas are seeded and established.

Describe how the structural practices listed above will be utilized after construction activities have been completed:

Once permanent erosion control methods as proposed in construction plans are established, temporary items shall be removed and disturbed turf re-seeded.

**D. Treatment Chemicals**

Will polymer flocculants or treatment chemicals be utilized on this project:  Yes  No

If yes above, identify where and how polymer flocculants or treatment chemicals will be utilized on this project.

**E. Permanent Storm Water Management Controls:** Provided below is a description of measures that will be installed during the construction process to control volume and 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.

- Such practices may include but are not limited to: 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 Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT Bureau of Design and Environment Manual. If practices other than those discussed in Chapter 41 are selected for implementation or if practices are applied to situations different from those covered in Chapter 41, the technical basis for such decisions will be explained below.

- 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 permanent storm water management controls:

The Iowa Causeway (US 52) will be protected with rip rap. A proposed retaining wall along IL 84 will incorporate a gutter at the top to collect offsite flows. A Detention Pond will be provided adjacent to IL 84, providing treatment to the roadway and retaining wall runoff prior to the site outfall. Permanent storm water management features also include proposed rip rap at culvert locations and seeding/sodding for all disturbed areas.

- F. **Approved State or Local Laws:** 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. 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, site permits, 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 the Permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

All management practices, controls, and other provisions provided in this plan are in accordance with "IDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION."

- G. **Contractor Required Submittals:** Prior to conducting any professional services at the site covered by this plan, the Contractor and each subcontractor responsible for compliance with the permit shall submit to the Resident Engineer a Contractor Certification Statement, BDE 2342a.
1. The Contractor shall provide a construction schedule containing an adequate level of detail to show major activities with implementation of pollution prevention BMPs, including the following items:
    - Approximate duration of the project, including each stage of the project
    - Rainy season, dry season, and winter shutdown dates
    - Temporary stabilization measures to be employed by contract phases
    - Mobilization timeframe
    - Mass clearing and grubbing/roadside clearing dates
    - Deployment of Erosion Control Practices
    - Deployment of Sediment Control Practices (including stabilized construction entrances/exits)
    - Deployment of Construction Site Management Practices (including concrete washout facilities, chemical storage, refueling locations, etc.)
    - Paving, saw-cutting, and any other pavement related operations
    - Major planned stockpiling operations
    - Timeframe for other significant long-term operations or activities that may plan non-storm water discharges such as dewatering, grinding, etc.
    - Permanent stabilization activities for each area of the project
  2. The Contractor and each subcontractor shall provide, as an attachment to their signed Contractor Certification Statement, a discussion of how they will comply with the requirements of the permit in regard to the following items and provide a graphical representation showing location and type of BMPs to be used when applicable:

- Vehicle Entrances and Exits – Identify type and location of stabilized construction entrances and exits to be used and how they will be maintained.
- Material Delivery, Storage and Use – Discuss where and how materials including chemicals, concrete curing compounds, petroleum products, etc. will be stored for this project.
- Stockpile Management – Identify the location of both on-site and off-site stockpiles. Discuss what BMPs will be used to prevent pollution of storm water from stockpiles.
- Waste Disposal – Discuss methods of waste disposal that will be used for this project.
- Spill Prevention and Control – Discuss steps that will be taken in the event of a material spill (chemicals, concrete curing compounds, petroleum, etc.)
- Concrete Residuals and Washout Wastes – Discuss the location and type of concrete washout facilities to be used on this project and how they will be signed and maintained.
- Litter Management – Discuss how litter will be maintained for this project (education of employees, number of dumpsters, frequency of dumpster pick-up, etc.).
- Vehicle and Equipment Fueling – Identify equipment fueling locations for this project and what BMPs will be used to ensure containment and spill prevention.
- Vehicle and Equipment Cleaning and Maintenance – Identify where equipment cleaning and maintenance locations for this project and what BMPs will be used to ensure containment and spill prevention.
- Dewatering Activities – Identify the controls which will be used during dewatering operations to ensure sediments will not leave the construction site.
- Polymer Flocculants and Treatment Chemicals – Identify the use and dosage of treatment chemicals and provide the Resident Engineer with Material Safety Data Sheets. Describe procedures on how the chemicals will be used and identify who will be responsible for the use and application of these chemicals. The selected individual must be trained on the established procedures.
- Additional measures indicated in the plan.

### III. Maintenance:

When requested by the Contractor, the Resident Engineer will provide general maintenance guides to the Contractor for the practices associated with this project. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. It will be the Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

Perimeter erosion barrier - sediment will be removed if the integrity of the fencing is lacking and any downed fencing will be repaired.

Seeding - all erodible bare earth will be seeded regularly to minimize the amount of erodible surface within the construction limit.

Erosion Control Blanket/Mulching - Any areas that fail will be repaired immediately.

Protection of Trees/Temporary Tree Protection - Any protective measures which are knocked down will be repaired immediately.

Ditch Checks - Sediment will be removed if the integrity of the ditch check is in jeopardy. Any ditch checks which fail will be repaired or repalced immediately.

All maintenance of erosion control systems will be the repsonibility of the contractor until construciton is complete and accepted by IDOT after final inspection. All locations where vehicles enter and exit the construction site and all other areas subject to erosion should also be inspected periodically.

All vegetation, erosion and sediment control measures and other protective measures identified in this plan must be maintained in good and effective operating conditions.

### IV. Inspections:

Qualified personnel shall inspect disturbed areas of the construction site which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site using IDOT Storm Water Pollution Prevention Plan Erosion Control Inspection Report (BC 2259). Such inspections shall be conducted at least once every seven (7) calendar days and within twenty-four (24) hours of the end of a storm or by the end of the following business or work day that is 0.5 inch or greater or equivalent snowfall.

Inspections may be reduced to once per month when construction activities have ceased due to frozen conditions. Weekly inspections will recommence when construction activities are conducted, or if there is 0.5" or greater rain event, or a discharge due to snowmelt occurs.

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 shall notify the appropriate IEPA Field Operations Section office by email at: [epa.swnoncomp@illinois.gov](mailto:epa.swnoncomp@illinois.gov), telephone or fax within twenty-four (24) hours of the incident. The Resident Engineer shall then complete and submit an "Incidence of Non-Compliance" (ION) report for the identified violation within five (5) days of the incident. The Resident Engineer shall use forms provided by IEPA 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 non-compliance shall be signed by a responsible authority in accordance with Part VI. G of the Permit ILR10.

The Incidence of Non-Compliance shall be mailed to the following address:

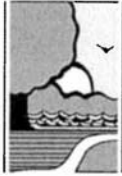
Illinois Environmental Protection Agency  
Division of Water Pollution Control  
Attn: Compliance Assurance Section  
1021 North Grand East  
Post Office Box 19276  
Springfield, Illinois 62794-9276

Additional Inspections Required:

**V. Failure to Comply:**

Failure to comply with any provisions of this Storm Water Pollution Prevention Plan will result in the implementation of a National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction against the Contractor and/or penalties under the Permit ILR10 which could be passed on to the Contractor.

**IDNR PERMIT**



**Illinois Department of  
 Natural Resources**

One Natural Resources Way Springfield, Illinois 62702-1271  
<http://dnr.state.il.us>

Pat Quinn, Governor  
 Marc Miller, Director

December 16, 2014

**SUBJECT:** Permit No. DS2014079  
 Bridge Replacement, U.S. 52 over Mississippi River  
 City of Savanna, Carroll County

Paul Loete, P.E., Region 2 Engineer  
 Illinois Department of Transportation  
 819 Depot Avenue  
 Dixon, Illinois 61021


Dear Mr. Loete:

Enclosed is Illinois Department of Natural Resources, Office of Water Resources Permit No. DS2014079 authorizing the portion of the subject project on the Illinois side of the river. This permit does not supersede any other federal, state or local authorizations that may be required for the project.

Approval under our Part 3700 Floodway Construction rules is based on our determination that the proposed crossing complies with the requirements of Section 3700.70 of the rules. Approval under our Part 3704 Public Waters rules is based on our determination that the new bridge will not impair any rights, interests or uses of the public in the public body of water.

If any changes of the permitted work are found necessary, revised plans should be submitted promptly to this office for review and approval. Also, this permit expires on the date indicated in Condition (13). If unable to complete the work by that date, the permittee may make a written request for a time extension.

Upon receipt and review of this permit and all of its conditions, please properly execute and return the attached acceptance blank within sixty (60) days from the date of the permit. Please feel free to contact Jerry Bishoff of my staff at 217/558-6617 if you have any questions concerning this authorization.

Sincerely,  
  
 Michael L. Diedrichsen, P.E.  
 Acting Manager, Downstate Regulatory Programs

MLD:JMB:crw  
 Enclosure  
 cc: IDOT (D. Carl Puzey, Attn: Patrik Clausen)  
 U.S. Army Corps of Engineers, Rock Island District (Regulatory Branch)  
 IEPA, BOW, Div of Water Pollution Control, Permit Section  
 City of Savanna (Larry Stebbins, Mayor)

RECEIVED REGION 2	DS	DS	PROGRAM DEVELOPMENT
			PROGRAM IMPLEMENTATION
			OPERATIONS
			ADMINISTRATIVE SERVICES
			LOCAL ROADS
DEC 22 2014			
		REGION ENGINEER	
		Consult with Region Engineer	
		Correspondence for RE signature	
		Correspondence for your signature	



**PERMIT NO. DS2014079**  
**DATE: December 16, 2014**

**State of Illinois**  
**Department of Natural Resources, Office of Water Resources**

Permission is hereby granted to:

**ILLINOIS DEPARTMENT OF TRANSPORTATION**  
**819 DEPOT AVENUE**  
**DIXON, ILLINOIS 61021**

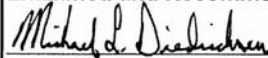
to replace the U.S. Highway 52 bridge crossing of the Mississippi River in the Northwest ¼ of Section 4, Township 24 North, Range 3 East of the 4<sup>th</sup> Principal Meridian in Carroll County,

in accordance with an application dated October 23, 2014, and the plans and specifications entitled:

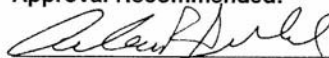
**GENERAL PLAN & ELEVATION – 1, US 52/IL 64 OVER THE MISSISSIPPI RIVER, PUBLIC WATER**  
**F.A.P. RTE. 17 – SEC. 104B-2, CARROLL (IL) AND JACKSON (IA) COUNTIES**  
**STATION 1577+60.00, STRUCTURE NO. 008-0052**

(Sheets 1, 2 & 5 of 5, Approved on July 30, 2014 as a basis for preparation of detailed plans); and  
**PLAN AND PROFILE**  
(Station 1544+00 to Station 1585+00, Dated May 9, 2013).

Examined and Recommended:

  
Michael L. Diedrichsen, Acting Manager  
Downstate Regulatory Programs

Approval Recommended:

  
Arlan R. Juhl, Director  
Office of Water Resources

Approved:

  
Marc Miller, Director  
Department of Natural Resources

This PERMIT is subject to the terms and special conditions contained herein.



**PERMIT NO. DS2014079**

**THIS PERMIT IS SUBJECT TO THE FOLLOWING CONDITIONS:**

- 1) This permit is granted in accordance with the Rivers, Lakes and Streams Act "615 ILCS 5."
- 2) This permit does not convey title to the permittee or recognize title of the permittee to any submerged or other lands, and furthermore, does not convey, lease or provide any right or rights of occupancy or use of the public or private property on which the activity or any part thereof will be located, or otherwise grant to the permittee any right or interest in or to the property, whether the property is owned or possessed by the State of Illinois or by any private or public party or parties.
- 3) This permit does not release the permittee from liability for damage to persons or property resulting from the work covered by this permit, and does not authorize any injury to private property or invasion of private rights.
- 4) This permit does not relieve the permittee of the responsibility to obtain other federal, state or local authorizations required for the construction of the permitted activity; and if the permittee is required by law to obtain approvals from any federal or other state agency to do the work, this permit is not effective until the federal and state approvals are obtained.
- 5) The permittee shall, at the permittee's own expense, remove all temporary piling, cofferdams, false work, and material incidental to the construction of the project. If the permittee fails to remove such structures or materials, the Department may have removal made at the expense of the permittee.
- 6) In public waters, if future need for public navigation or other public interest by the state or federal government necessitates changes in any part of the structure or structures, such changes shall be made by and at the expense of the permittee or the permittee's successors as required by the Department or other properly constituted agency, within sixty (60) days from receipt of written notice of the necessity from the Department or other agency, unless a longer period of time is specifically authorized.
- 7) The execution and details of the work authorized shall be subject to the review and approval of the Department. Department personnel shall have the right of access to accomplish this purpose.
- 8) Starting work on the activity authorized will be considered full acceptance by the permittee of the terms and conditions of the permit.
- 9) The Department in issuing this permit has relied upon the statements and representations made by the permittee; if any substantive statement or representation made by the permittee is found to be false, this permit will be revoked; and when revoked, all rights of the permittee under the permit are voided.
- 10) In public waters, the permittee and the permittee's successors shall make no claim whatsoever to any interest in any accretions caused by the activity.
- 11) In issuing this permit, the Department does not ensure the adequacy of the design or structural strength of the structure or improvement.
- 12) Noncompliance with the conditions of this permit will be considered grounds for revocation.
- 13) If the construction activity permitted is not completed on or before December 31, 2018, this permit shall cease and be null and void.

**THIS PERMIT IS SUBJECT TO THE FOLLOWING SPECIAL CONDITIONS:**

- a) Except for the cofferdams required for pier construction, any temporary work platforms or causeways to be constructed on the Illinois side of the river will require further Illinois Department of Natural Resources, Office of Water Resources authorization.
- b) Bridge removal shall be conducted such that it will not unnecessarily interfere with navigation of the river or create a hazard to boating safety. The existing piers shall be removed such that they will not become a future hazard.

PERMIT NO. DS2014079  
IDOT – REGION 2  
U.S. 52 OVER MISSISSIPPI RIVER

**PERMIT ACCEPTANCE**

This Acceptance must be signed and returned to the address below to validate this permit. See Condition No. 8.

**ILLINOIS DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF WATER RESOURCES  
One Natural Resources Way  
Springfield, Illinois 62702-1271**

The undersigned permittee, personally, or if a corporation by its duly authorized officers, hereby accepts the permit bearing the above serial number subject to all conditions named therein, on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_

By \_\_\_\_\_

By \_\_\_\_\_

If a corporation  
affix seal here.

404 PERMIT



DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, ROCK ISLAND DISTRICT  
PO BOX 2004 CLOCK TOWER BUILDING  
ROCK ISLAND, ILLINOIS 61204-2004

REPLY TO  
ATTENTION OF

June 25, 2015

Operations Division

SUBJECT: CEMVR-OD-P-2014-1885

Mr. Paul Loete  
Illinois Department of Transportation  
819 Depot Avenue  
Dixon, Illinois 61021

Mr. Jim Rost  
Iowa Department of Transportation  
800 Lincoln Way  
Ames, Iowa 50010

RECEIVED REGION 2	D-2	D-3	
			PROGRAM DEVELOPMENT
			PROGRAM IMPLEMENTATION
			OPERATIONS
			ADMINISTRATIVE SERVICES
			LOCAL ROADS
JUN 29 2015			
		REGION ENGINEER	
		Confer with Region Engineer	
		Correspondence for RE signature	
		Correspondence for your signature	

Dear Mr. Loete and Mr. Rost:

We are enclosing a Department of the Army permit authorizing work in conjunction with the construction of a new bridge across the Mississippi River to replace the existing U.S. Bridge, including access fill for a replacement causeway on the Iowa side of the project.

As stated in the letter sent May 20, 2015, from abutment to abutment, this project meets the terms of Nationwide Permit 15 for Iowa and Illinois for Coast Guard Approved Bridges (See attached Fact Sheet No. 7 and the Federal Register). Water Quality has been issued by both the Illinois EPA and Iowa DNR for these Nationwide Permits.

If you find it necessary to make changes in this authorization, you must submit revised plans to this office for approval before beginning work. You should also have all required Federal, state, and local approvals prior to commencing work.

Please notify this office prior to starting and completion of work. You are required to complete and return the enclosed "Completed Work Certification" upon completion of your project. A representative of this office will make periodic inspections of the work.

We appreciate your cooperation.

The Rock Island District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete the attached postcard and return it or go to our Customer Service Survey found on our web site at <http://per2.nwp.usace.mil/survey.html>. (Be sure to select "Rock Island District" under the area entitled: Which Corps office did you deal with?)

Should you have any questions pertaining to your permit, please contact me at 309/794-5859.

Sincerely,

Albert J. Frohlich  
Project Manager  
Regulatory Branch

-2-

Copies Furnished:

Chief, Watershed Planning and Implementation Branch  
U.S. E.P.A., Region 7  
11201 Renner Boulevard  
Lenexa, Kansas 66219 (w/ enclosure)

Mr. Kraig McPeck, Field Supervisor  
U.S. Department of the Interior, FWS  
Rock Island Field Office (ES)  
1511 47<sup>th</sup> Avenue  
Moline, Illinois 61265 (w/o enclosures)

Ms. Lavon Grimes, R&C Coordinator  
State Historic Society of Iowa  
600 East Locust  
Des Moines, Iowa 50319-0290 (w/ enclosure)

Ms. Christine Schwake  
Iowa Department of Natural Resources  
Water Resources Section  
502 East 9<sup>th</sup> Street  
Des Moines, Iowa 50319 (w/ enclosure)

Ms. Lavon Grimes, R&C Coordinator  
State Historic Society of Iowa  
600 East Locusts  
Des Moines, Iowa 50319-0290 (w/ enclosure)

Mr. Mike Diedrichsen, P. E.  
Office of Water Resources  
IL Department of Natural Resources  
One Natural Resources Way  
Springfield, Illinois 62702-1271

Mr. Dan Heacock  
Illinois Environmental Protection Agency  
Watershed Management Section  
Permit Sec. 15  
1021 North Grand Avenue East  
Post Office Box 19276  
[Epa.401.bpw@illinois.gov](mailto:Epa.401.bpw@illinois.gov) (email)

RE-Nelson (w/enclosure)

OD-MN-Lundh (w/enclosure)

**COMPLETED WORK CERTIFICATION**

Permit Number: CEMVR-OD-P-2014-1885

Name of Permittee: IL/IA DOT

Date of Issuance: 6/25/2015

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

U.S. Army Engineer District,  
Rock Island  
ATTN: Regulatory Branch  
Clock Tower Building  
Post Office Box 2004  
Rock Island, Illinois 61204-2004

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above reference permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

\_\_\_\_\_  
Signature of Permittee

\_\_\_\_\_  
Date

MDH/NWP/PCN

**DEPARTMENT OF THE ARMY PERMIT**

Permit Number: CEMVR-OD-P-2014-1885	Section 404
Permittee: Illinois Department of Transportation (ILDOT) 819 Depot Avenue Dixon, IL 61021	POC: Paul Loete Tel: 815-284-2271
Iowa Department of Transportation (IADOT) 800 Lincoln Way Ames, Iowa 50010	POC: Jim Rost Tel: 515-239-1510

Effective Date: 25 June 2015

Expiration Date: 31 December 2018

Issuing Office: U.S. Army Corps of Engineers, Rock Island District  
Clock Tower Building - P.O. Box 2004  
Rock Island, Illinois 61204-2004

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

**Project Description:** Work in conjunction with the construction of a new bridge across the Mississippi River to replace the existing U.S. 52 Bridge, including access fill for a replacement causeway.

**Causeway** – The Illinois DOT will replace the existing causeway with a re-aligned causeway to match with the new US 52 Bridge that spans the Mississippi River. A scenic pull off overlook will be part of the new causeway.

**Navigation Channel** - This project will result in the navigation channel being shifted 150 feet towards the right descending bank with the resulting navigation channel being 508-feet wide. The US Coast Guard (USCG) has approved this change and will issue a permit to the Illinois DOT for this shift. During construction a temporary navigation channel will be maintained at a minimum 350 foot width.

**Piers** - The new bridge will have eleven piers. Five of the piers will be in the Mississippi River channel and six will be in the backwater areas. Upon completion of the new bridge, all of the old piers will be removed to a depth specified by the USCG.

**Impacts** - The project will result in unavoidable temporary and permanent impacts to wetlands and waters of the U.S. Permanent impacts will total 0.43 acres of wetlands (0.06 acres of emergent and

0.37 acres of forested wetlands), and 1.88 acres of Mississippi river. Temporary impacts will total 2.32 acres of wetlands (0.30 acres of emergent and 2.02 acres of forested wetlands). The fill will be the result of new piers in the river (6) and backwater areas (5), and to reconstruct 1500 feet of the US 52 causeway. Additional fill will be required for the construction of the new bridge piers and/or clearing and grubbing of trees underneath the footprint of the new bridge. Other temporary impacts will result from access clearing to give contractors access to the site.

**Access** - To construct the bridge and causeway, work may be performed using temporary work structures, which may include earth embankments, causeway work pads or prefabricated modular bridges. Barges may also be used and shall be used in accordance with any USCG permit that ILDOT obtains.

**Bridge Removal** – Upon completion of the new bridge, the old bridge will be removed through the use of explosives. This work will be done in coordination with the USCG and the IL DOT will follow all aspects of any USCG permit specifications for removal. All material from this bridge will be removed from the Mississippi River and backwaters immediately

**Wetland Mitigation** - To mitigate for the loss of wetlands, the IADOT will construct a wetland mitigation site. All of the wetland impacts are strictly on the Iowa side of this project. The IADOT will create 0.09 acres of emergent and 1.1 acres of forested wetland at the Catfish Creek Wetland Mitigation Site in Dubuque County, Iowa. Temporary wetland impacts that occur during bridge construction totaling 0.30 acres of emergent wetland and 2.02 acres of forested wetland will be mitigated for on-site. These sites will be restored and monitored.

The ILDOT will serve as the lead agency for this proposed project and will be responsible for its letting, overseeing the construction and demolition of the old bridge. The IADOT will be responsible for ensuring that all aspects of the wetland mitigation are completed.

**Project Location:**

1) **Bridge Location** - USGS quad sheet, approximate Mississippi river mile 537. Section 4 and 8, Townships 24 and 84 North / South, Ranges 3 and 7 East; near Savanna in Carroll County Illinois, and near Sabula in Jackson County, Iowa

2) **Wetland Mitigation Location** – Catfish Creek Wetland Mitigation Site, Sections 1 and 6, Township 88 North, Ranges 2 and 3 East, Dubuque County, Iowa.

Drawing(s) No. CEMVR-OD-P-2014-1885 - Sheet 1 of 8, Project Location  
Sheet 2 of 8, Bridge Details  
Sheet 3 of 8, Bridge Details  
Sheet 4 of 8, Causeway  
Sheet 5 of 8, Causeway  
Sheet 6 of 8, Wetland Mitigation Location  
Sheet 7 of 8, Wetland Mitigation Topo  
Sheet 8 of 8, Wetland Mitigation Details



Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on the date specified on page 1. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before that date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party, in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archaeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
2. There shall be no tree clearing between April 1 and September 30 to protect the Northern long-eared and Indiana bat.

Mitigation Conditions

1. That the 10 General Conditions and the 13 Mitigation Conditions listed in the attached 401 Water Quality Certification from the Iowa Department of Natural Resources dated May 12, 2015 are considered to be part of this permit.



2. The technical specifications listed in the document entitled Appendix C – Catfish Creek Wetland Mitigation Site received November 21, 2014 is made part of this permit and may be used as a reference for various procedures for the mitigation plan. An As-Built plan will be submitted upon completion of the site to document planting locations, planting rates and any other features pertinent to the site. At least 1.19 acres of wetland (1.1 forested and 0.09 emergent) will develop at the Catfish Creek Wetland Mitigation Site. At the bridge location, 2.32 acres of wetland will be fully restored. A post construction survey will be conducted to show that the ground elevations at these locations are at or below the original contours. These restored wetlands will be monitored once they are replanted with appropriate species as outlined in the mitigation plan. If 2.32 acres of wetlands do not develop, wetland mitigation may be required off-site.

3. In order to protect water quality, if excavation and construction are completed outside an optimal seeding period, temporary erosion control protection shall be implemented immediately upon completion of excavation and construction and shall be maintained until such time as wetland plantings can be completed during an optimal period. The permanent wetland plantings shall then be completed during the next optimal seeding period.

4. Mitigation work shall begin concurrent with the initiation of project construction. The mitigation work shall be completed within one year of the initiation of project construction on the site.

5. The Permittee shall notify this office in writing upon the completion of the wetland mitigation plan. The Permittee shall be responsible to perform any corrective actions deemed necessary by this district to insure wetland success.

6. Reporting required by rule. The Permittee shall provide an annual report to the Corps of Engineers documenting the extent of the mitigation completed.

- The IADOT shall conduct an annual survey of the mitigation area to monitor the survival rate of the plantings, and soil and hydrology conditions at the site. The results of the survey may be documented annually on the enclosed Rock Island District Standard Mitigation Reporting Form also available at: <http://www2.mvr.usace.army.mil/Regulatory/> or in an annual progress report as specified in RGL 08-03, <http://www.usace.army.mil/cecw/pages/rglsindx.aspx>. The information and photographs for these reports must clearly demonstrate conditions of the mitigation during the growing season. These annual reports are due no later than December 31 of each year for the monitoring period. All annual monitoring reports shall be formatted for an 8.5 x 11 inch piece of paper. The mitigation monitoring reports submitted to the both the Iowa Department of Natural Resources and Corps of Engineers. Reports are due after the first full growing season after the mitigation is constructed and annually ten years.
- These reports shall include the following information at a minimum:
  - o Information concerning the survival rate of all plant species which were to be established at the mitigation site. This information shall be collected by a qualified biologist.
  - o Annual photographs (taken during the growing season and from consistent photo points) showing representative areas of the site.
  - o Vegetative cover map indicating dominant cover species in each area.
  - o Wetland hydrology assessment (See Delineation Information <http://www2.mvr.usace.army.mil/Regulatory/>).
  - o Monthly surface water elevations at the site.

7. Survival of plantings. To ensure mitigation success, we will require all newly planted trees be guaranteed for 10 years. All emergent plants will be guaranteed for 5 years. During each monitoring period, there should be at least 50 wetland trees as specified by the mitigation plan accounted for. Emergent plant success will be determined by the aerial coverage. There shall be no areas devoid of wetland vegetation that was planted. Any newly planted tree or shrub (including replacements), which dies to the point that the main leader has died back or where there is 25 percent or more of the crown dead, will be replaced. All replacements will be of the same kind and size and of equal wildlife value and function as originally planted. Damages incurred in making replacements will be repaired.

8. Incompatible Uses. The Permittee is required to provide 60-day advance notification to the district engineer before any action is taken to void or modify the instrument, management plan, or long-term protection mechanism, including transfer of title to, or establishment of any other legal claims over, the compensatory mitigation site.

a. Commercial Activities. To preserve the mitigation site for its authorized purpose, there shall be no commercial, industrial or residential activity undertaken or allowed within the mitigation area. There shall be no buildings, dwellings, barns, roads, advertising signs, billboards or other structures built or placed in the mitigation area, except when provided in the original mitigation plan, the Permittee may install a viewing site, outdoor seating facility along with a plaque or other historical signage, tree stands or water fowl hunting blinds; There shall be no dredging, filling, excavating, mining, drilling or removal of any topsoil, sand, gravel, rock, minerals or other materials.

b. Agriculture. To preserve the mitigation site for its authorized purpose, no plowing, tilling, cultivating, planting, timbering, or other agricultural activities may take place within the mitigation area except for the purposes described in the Permittee's approved mitigation plan. The Permittee is obligated to establish or re-establish vegetation through seedings or plantings in furtherance of that plan. Further, Permittee may manipulate vegetation, topography and hydrology on the mitigation area through diking, pumping, water management, excavating, burning, cutting pesticide application and other suitable methods for the purpose of protecting, enhancing buffers, wetlands and wetland vegetation. The Permittee is responsible for compliance with all federal, state and local laws governing the safety and maintenance of the property, including the control of noxious weeds within the mitigation area. Grazing of the mitigation area by domestic livestock is prohibited.

c. Land and Water. To ensure that the mitigation site can be maintained for its authorized purpose, the Permittee must acquire, preserve and defend acquisition and any water or land rights where needed to maintain the ecological functions of the required mitigation. The Permittee is obligated to install, operate and maintain water control structures for the purpose of protecting, re-establishing and enhancing wetlands and their functional values. This includes the right to transport construction materials to and from the site of any existing or proposed water control structure. The hydrology of the mitigation area will not otherwise be altered in any way or by any means including pumping, draining, diking, impounding or diverting surface or ground water into or out of the mitigation area.

d. Liability. As required by rule, the Permittee shall notify the district engineer within 60 days if the compensatory mitigation project is not achieving its performance standards as anticipated. The Permittee shall provide 60-day advance notification to the district engineer if any action is taken to modify the approved mitigation plan. Remedial work may include re-grading and/or replanting the mitigation site. The Permittee shall take immediate proactive steps necessary to correct any deficiencies outlined in the monitoring reports and shall coordinate with this office during implementation to insure compliance with the terms and conditions in this permit.

e. Conveyance. As required by rule the Permittee shall provide 60-day advance notification to the district engineer prior to any planned conveyance of mitigation lands for the

district engineer's approval. The notification shall identify how and by whom the approved mitigation shall be accomplished. The Permittee shall provide documentation of any conveyance in writing and by certified mail within 15 days after the conveyance. The responsible party identified in the permit shall retain all liability for maintaining adequate mitigation and accomplishing any needed corrective work should the district engineer determine that the mitigation is not satisfactory.

f. Fulfillment. As required by rule, the Permittee's responsibility to complete the required compensatory mitigation will not be considered fulfilled until you have demonstrated mitigation success and have received written verification from the U.S. Army Corps of Engineers.

9. The party responsible for wetland mitigation is the Iowa Department of Transportation.

10. Mitigation Design Objectives

Type:	Mitigation					Stream Channel Length (feet)
	Emergent (acres)	Forested (acres)	Open-Water (acres)	Other* (acres)	Total (acres)	
Restored:	.30 ac (bridge)	2.02 ac. (bridge)			2.32 ac.	
Created:	.09 ac. Catfish Creek	1.1 ac. Catfish Creek			1.19 ac.	
Enhanced:						
Preserved:						
Total:					3.51 ac.	

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

Section 404 of the Clean Water Act (33 U.S.C. 1344).

Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signatures below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

<u>Paul A. Loeter</u> Permittee	<u>5-26-15</u> Date
<u>James Rest</u> Permittee	<u>5-29-15</u> Date

This issuing officer for this permit is Mark J. Deschenes, Colonel, U.S. Army, District Engineer, Rock Island District.

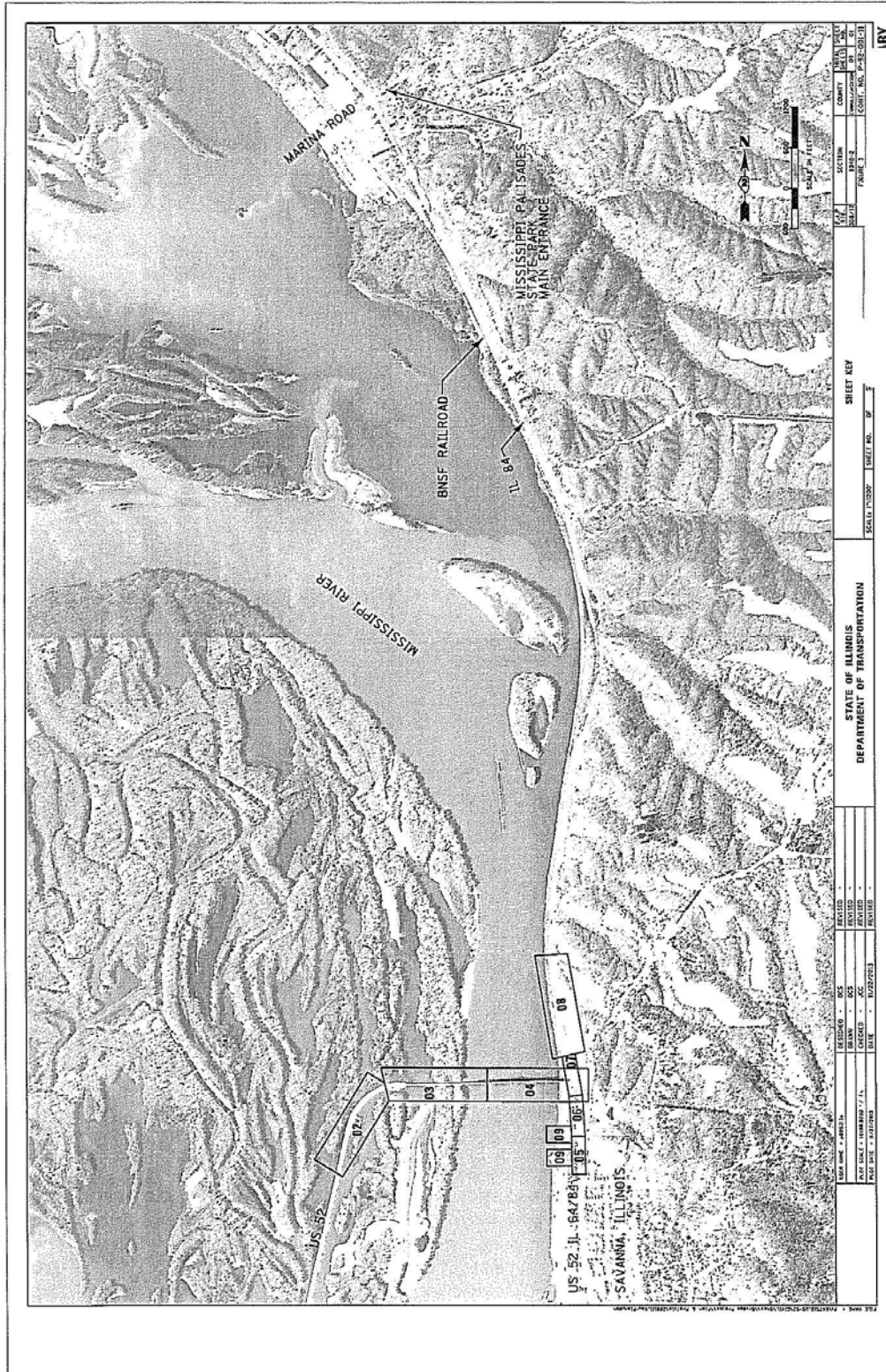
This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, and in accordance with CEMVR-OD-P appointment order 15 January 2008 has signed below.

<u>Ant J. [Signature]</u> Name Project Manager	<u>6-25-15</u> Date
--	------------------------

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

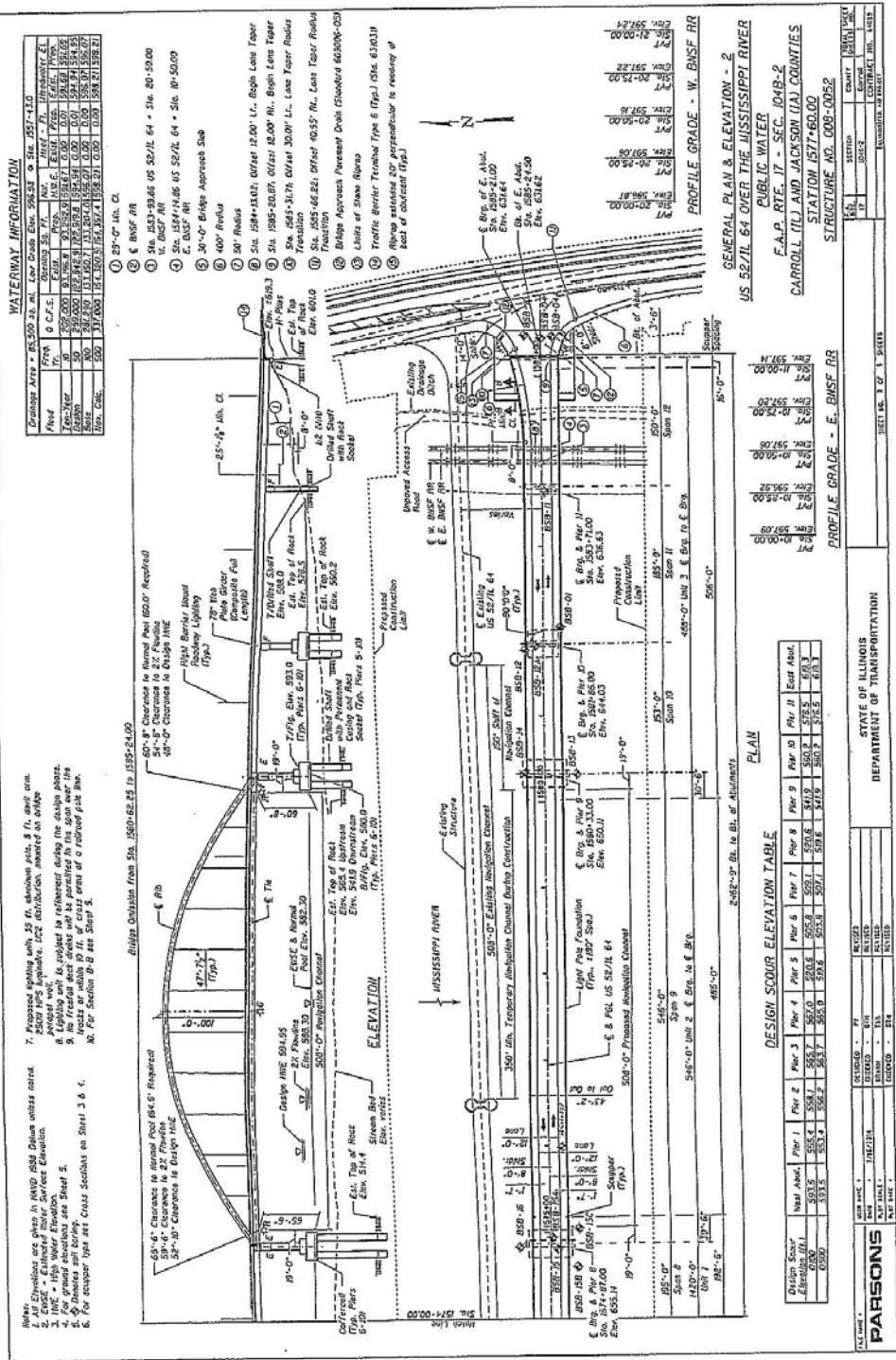
_____	_____
Transferee	Date



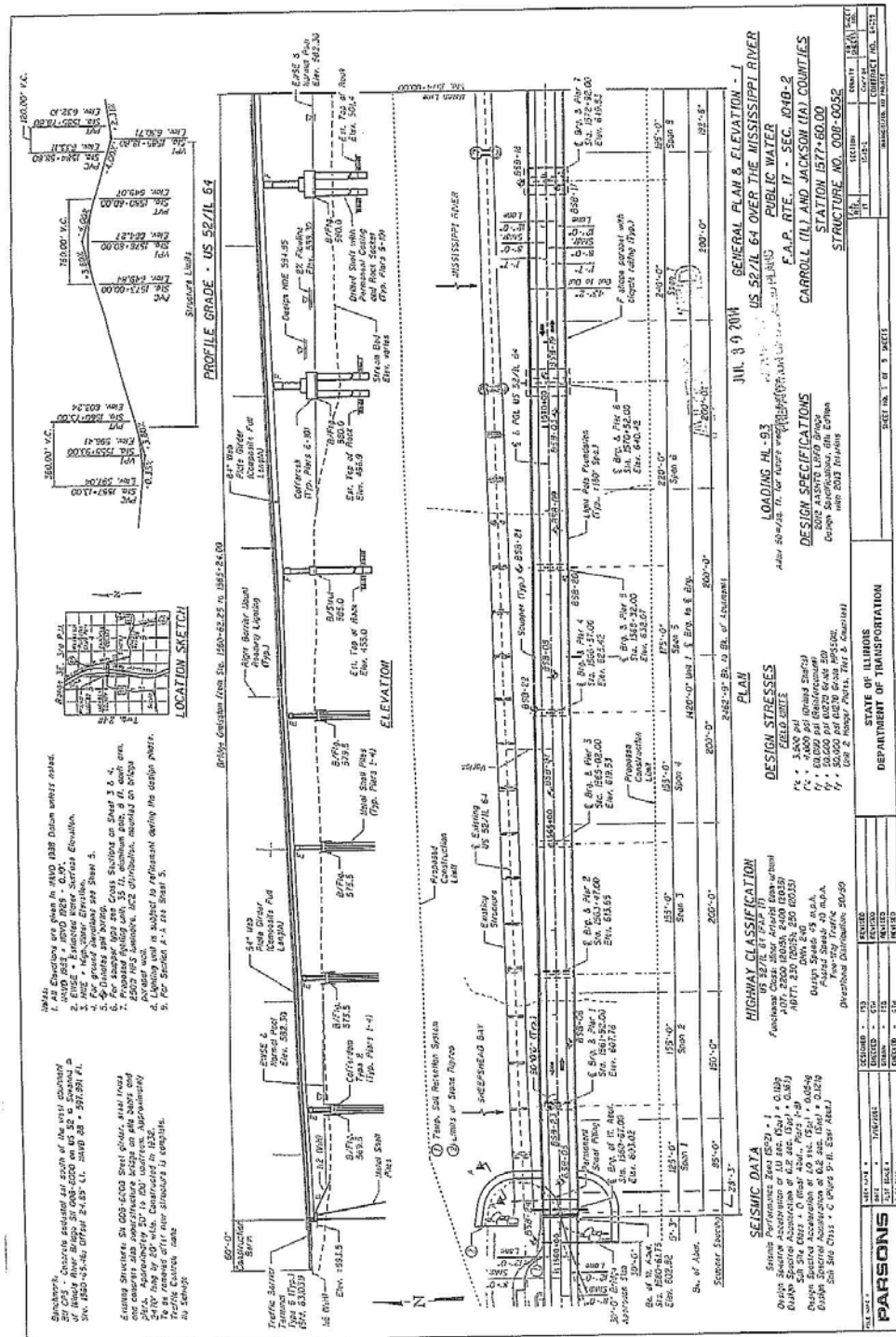


CEMVR-OD-P-2014-1885  
 Project Location  
 Sheet 1 of 8

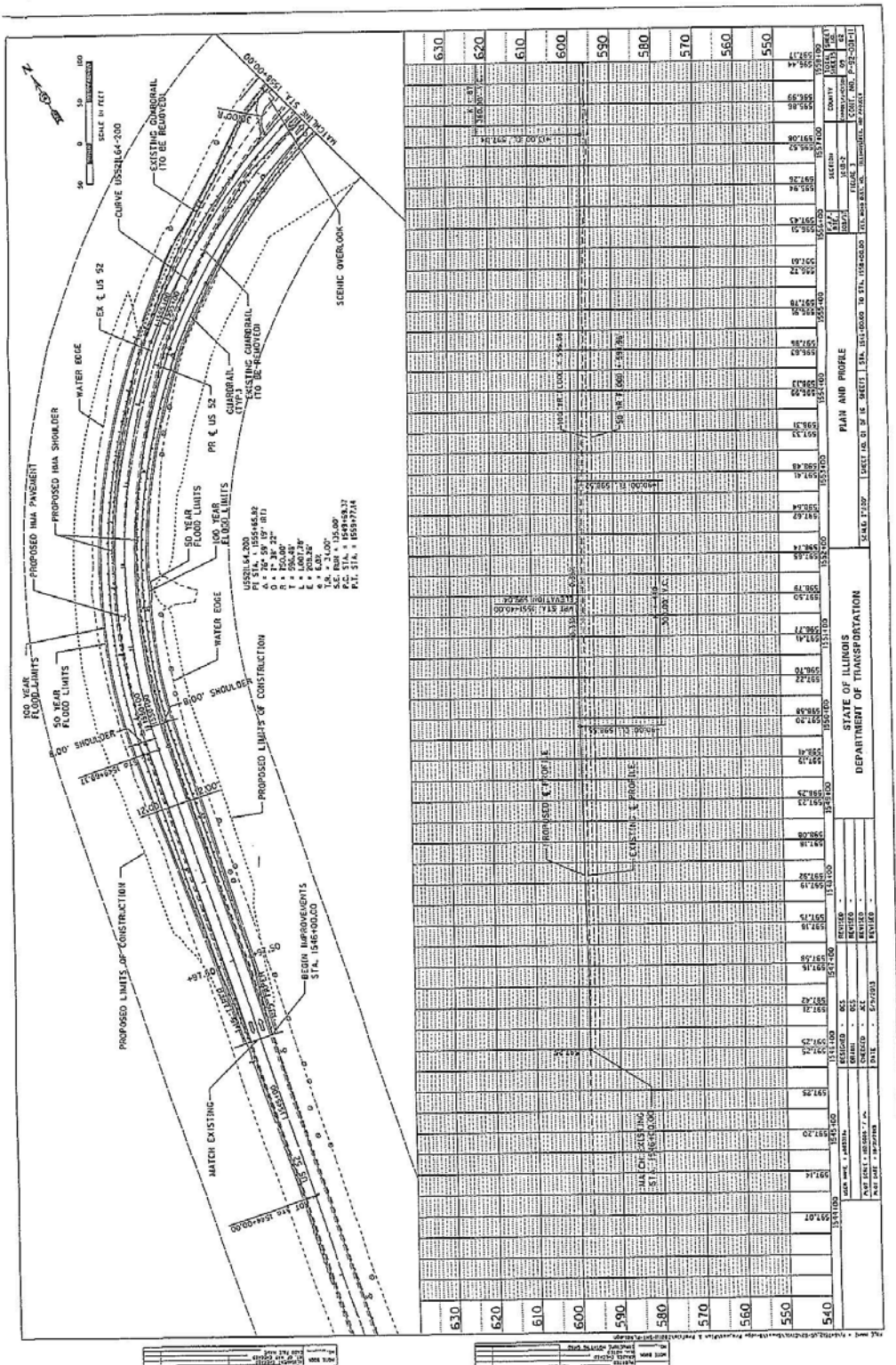
CEMVR-OD-P-2014-1885  
 Bridge Details  
 Sheet 2 of 8



CEMVR-OD-P-2014-1885  
 Bridge Details  
 Sheet 3 of 8







CEMVR-OD-P-2014-1885  
 Causeway  
 Sheet 4 of 8



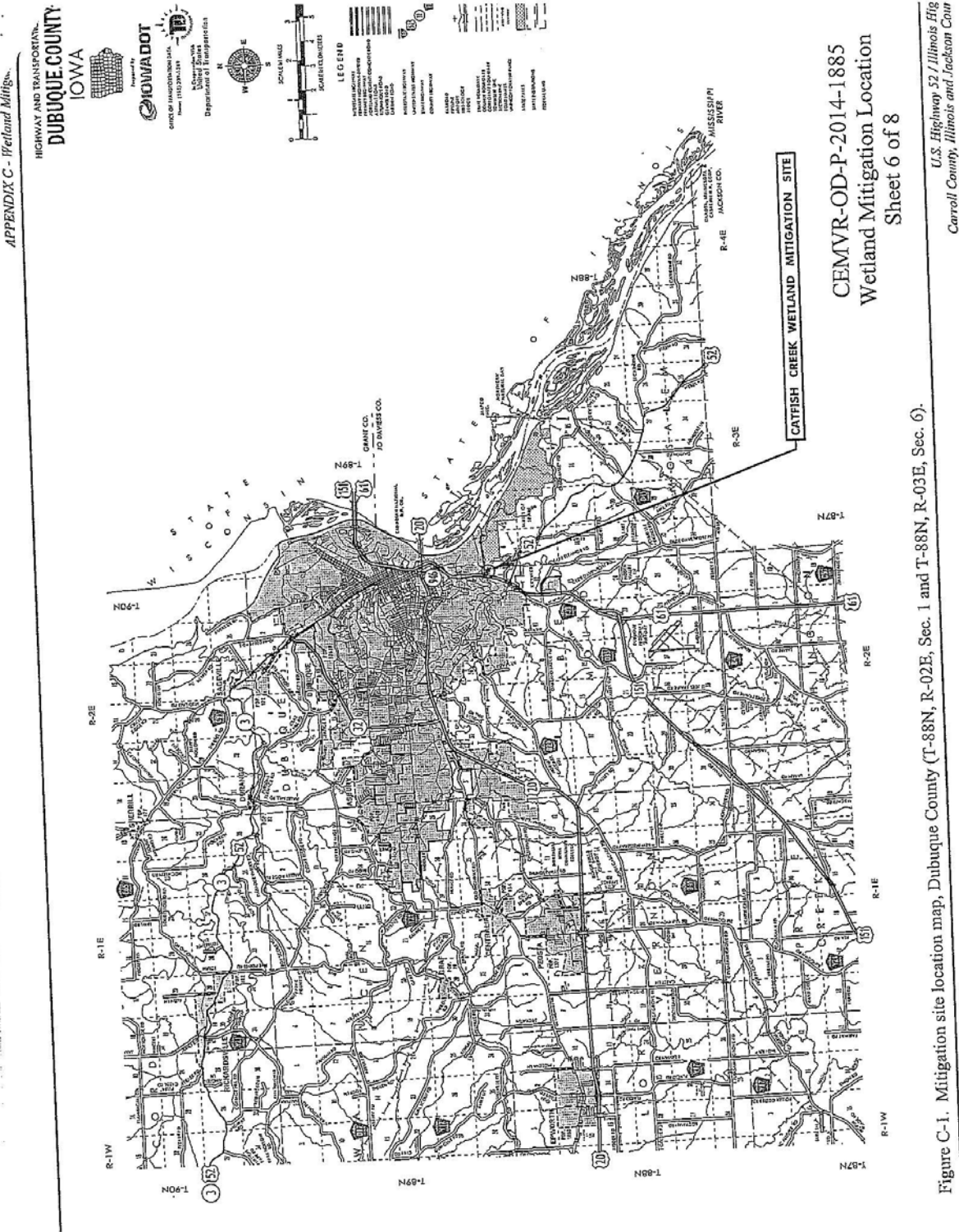


Figure C-1. Mitigation site location map, Dubuque County (T-88N, R-02E, Sec. 1 and T-88N, R-03E, Sec. 6).

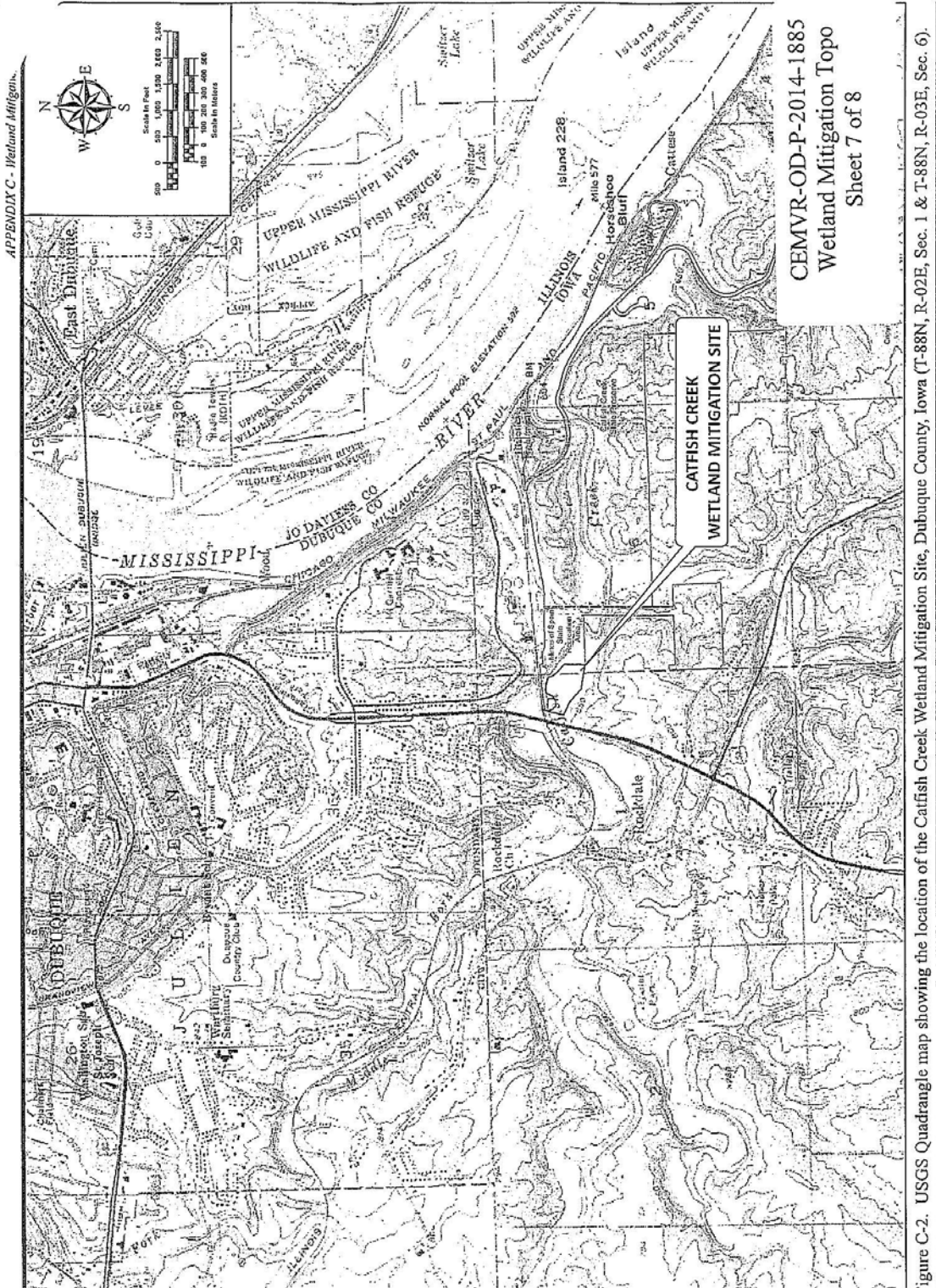
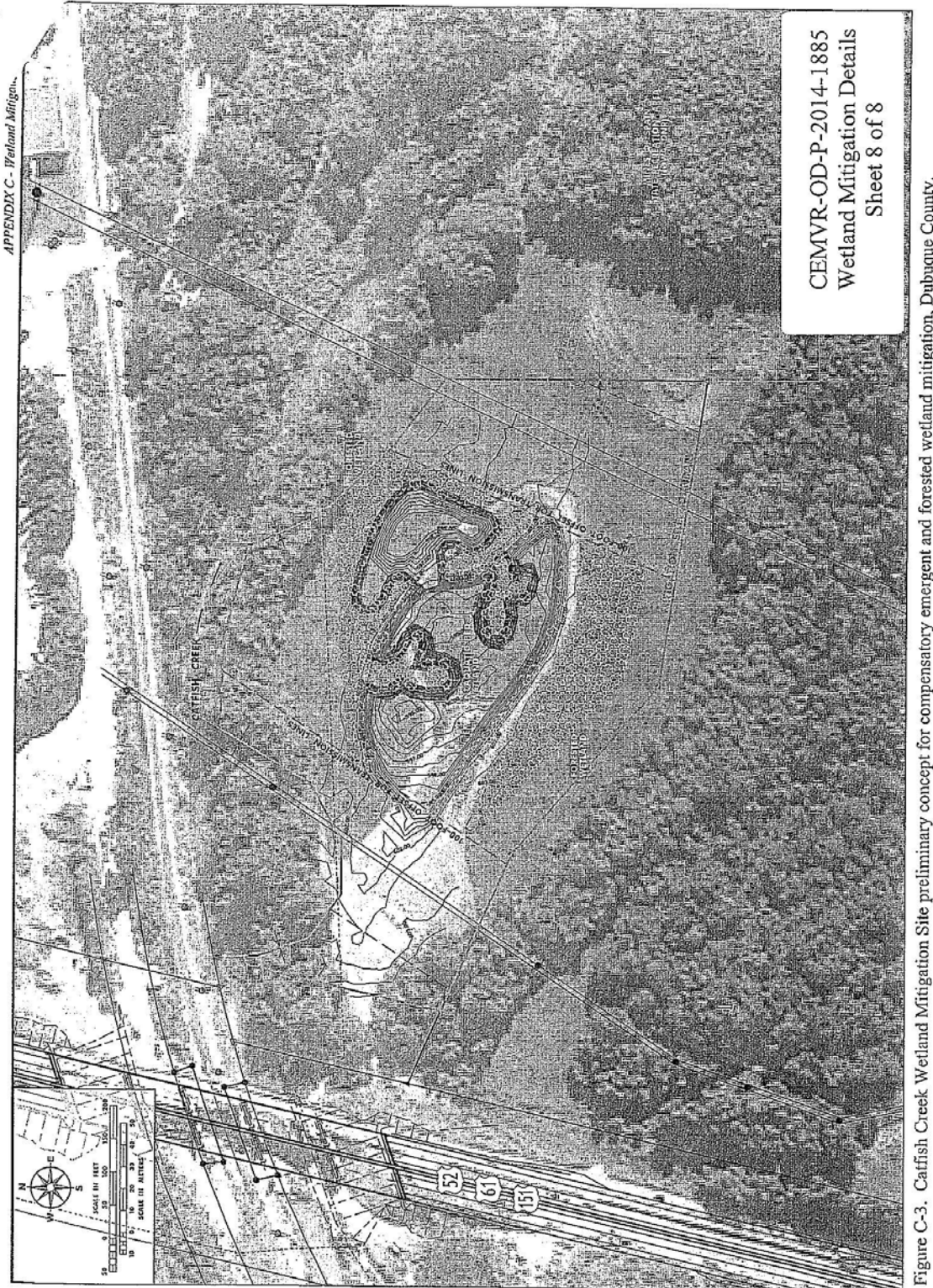


Figure C-2. USGS Quadraangle map showing the location of the Catfish Creek Wetland Mitigation Site, Dubuque County, Iowa (T-88N, R-02E, Sec. 1 & T-88N, R-03E, Sec. 6).





APPENDIX C - Wetland Mitigation

CEMVR-OD-P-2014-1885  
Wetland Mitigation Details  
Sheet 8 of 8

Figure C-3. Catfish Creek Wetland Mitigation Site preliminary concept for compensatory emergent and forested wetland mitigation, Dubuque County.

U.S. Highway 52 / Illinois Highway 64  
Carroll County, Illinois and Jackson County, Iowa



TERRY E. BRANSTAD, GOVERNOR  
KIM REYNOLDS, LT. GOVERNOR

## STATE OF IOWA

DEPARTMENT OF NATURAL RESOURCES  
CHUCK GIPP, DIRECTOR

May 12, 2015

MR PAUL LOETE  
ILLINOIS DEPARTMENT OF TRANSPORTATION  
819 DEPOT AVE  
DIXON IL 61021

MR JIM ROST  
IOWA DEPARTMENT OF TRANSPORTATION  
800 LINCOLN WAY  
AMES IA 50010

Dear Messrs. Loete and Rost:

After reviewing your request for State 401 Water Quality Certification, the Iowa Department of Natural Resources (IDNR) has issued the enclosed Certification. Please read the attached conditions carefully before beginning work on the project.

A copy of this Certification has been forwarded to the office of the Army Corps of Engineers (Corps) as indicated below.

If you have any questions or comments about the certification or any conditions contained therein, please contact me at the address shown below or call (515) 725-8399.

Sincerely,

A handwritten signature in blue ink that reads "Christine M Schwake".

Christine M. Schwake  
Environmental Specialist

cc: Mr. Al Frohlich, Department of the Army Corps of Engineers, Rock Island District,  
Clock Tower Building, P.O. Box 2004, Rock Island, IL 61204-2004

**IOWA DEPARTMENT OF NATURAL RESOURCES**  
**SECTION 401 WATER QUALITY CERTIFICATION**

**Certification issued to:** **Effective:** May 12, 2015

Illinois Department of Transportation  
819 Depot Avenue  
Dixon, IL 61021

Iowa Department of Transportation  
800 Lincoln Way  
Ames, IA 50010

Prepared By: Christine M Schwake Date Executed: May 12, 2015  
Christine M. Schwake, IDNR, Wallace State Office Building, Des Moines, IA 50319-0034 (515) 725-8399

STATE OF IOWA COUNTY OF POLK  
I HEARBY CERTIFY I AM THE OFFICIAL AND LAWFUL CUSTODIAN OF THE PUBLIC RECORDS MAINTAINED BY THE IOWA DEPARTMENT OF NATURAL RESOURCES AND THE FOREGOING DOCUMENT IS A TRUE AND ACCURATE PHOTOCOPY OF THE RECORD COPY MAINTAINED IN MY CUSTODY AS A PUBLIC RECORD OF THE DEPARTMENT IN THE ORDINARY COURSE OF ITS BUSINESS. EXECUTED AT DES MOINES BY CRAIG OTTO (515-725-8480) ON MAY 12, 2015

**Project certified:** US Army Corps of Engineers, No. CEMVR-OD-P-2014-1885  
State 401 Water Quality Certification, No. 15-N-097-01-01-S

**Project Description:** The Illinois Department of Transportation (ILDOT), and Iowa Department of Transportation (IADOT) will replace the existing U.S. 52/Illinois Highway 64 (US 52/IL 64) bridge that spans the Mississippi River near Sabula, Iowa and Savanna, Illinois (S8, T84N, R7E, Jackson County, Iowa & S4, T24N, R3E, Carroll County, Illinois).

The Illinois DOT will replace the existing causeway with a re-aligned causeway to match with the new US 52 Bridge that spans the Mississippi River. A scenic pull off overlook will be part of the new causeway.

This project will result in the navigation channel being shifted 150 feet towards the right descending bank with the resulting navigation channel being 508' wide. The United States Coast Guard (USCG) has approved this change and will issue a permit to the ILDOT for this shift. During construction a temporary navigation channel will be maintained at a minimum 350' width.

The new bridge will have eleven piers. Five of the piers will be in the Mississippi River channel and six will be in the backwater areas. Upon completion of the new bridge, all of the old piers will be removed to a depth specified by the USCG.

The project will result in unavoidable temporary and permanent impact to wetlands and waters of the U.S. Permanent impacts will total 0.43 acres of wetlands (0.06 ac of emergent and 0.37 ac of forested wetlands), and 1.88 acres of Mississippi River. Temporary impacts will total 2.32 acres of wetlands (0.30 ac of emergent and 2.02 ac of forested wetlands). The fill will be the result of new piers in the river and backwater areas, and to reconstruct 1500' of the US 52 causeway. Additional fill will be required for the construction of the new bridge piers and/or clearing and grubbing of trees underneath the footprint of the new bridge. Other temporary impacts will result from access clearing to give contractors access to the site.

To construct the bridge and causeway, work may be performed using temporary work structures, which may include earth embankments, causeway work pads or prefabricated modular bridges. Barges may also be used and shall be used in accordance with the USCG permit that ILDOT obtains.

Upon completion of the new bridge, the old bridge will be removed through the use of explosives. This work will be in coordination with the USCG and ILDOT will follow all aspects of any USCG permit specifications for removal. All material from this bridge will be removed from the Mississippi River and backwaters immediately.

To mitigate for the loss of wetlands, the IADOT will construct the wetland mitigation site. All of the wetland impacts are strictly on the Iowa side of this project. The IADOT will create 0.09 acres of emergent and 1.1 acres of forested wetland at the Catfish Creek Wetland Mitigation Site in S1, T88N, R2E and S6, T88N, R3E, Dubuque County, Iowa. The IADOT will also restore all temporarily impacted wetlands (0.30 ac of emergent wetland and 2.02 ac of forested wetland) at the bridge location (S8, T84N, R7E, Jackson County, Iowa).

The ILDOT will serve as the lead agency for this project and will be responsible for its letting, overseeing the construction and demolition of the old bridge. The IADOT will be responsible for ensuring that all aspects of the wetland mitigation are completed.

**Water quality use designation:**

This reach of the Mississippi River is designated as Class A1 Primary contact recreational use. These are waters in which recreational or other uses may result in prolonged and direct contact with the water, involving considerable risk of ingesting water in quantities sufficient to pose a health hazard. This reach of the Mississippi River is also designated as Class B(WW-1) which are waters in which temperature, flow and other habitat characteristics are suitable to maintain warm water game fish populations along with a resident aquatic community that includes a variety of native nongame fish and invertebrate species. This reach of the Mississippi River is also designated as Class HH, human health, which are waters in which fish are routinely harvested for human consumption or waters both designated as a drinking water supply and in which fish are routinely harvested for human consumption. All surface waters in Iowa, including wetlands and those designated for Class "A", "B", and/or "C" are classified for the following general uses: livestock and wildlife watering, noncontact recreation, crop irrigation, and industrial, agricultural, domestic, and other incidental withdrawal uses.



The Iowa Department of Natural Resources (IDNR) has issued this State 401 Water Quality Certification pursuant to Section 401 of the Clean Water Act. The Army Corps of Engineers (Corps) requires state Certification before a Section 404 permit can be issued. Section 401 Certification represents the IDNR's concurrence that the project certified is consistent with the Water Quality Standards of the state of Iowa as set forth in Chapter 61, Iowa Administrative Code.

Subject to the attached conditions, incorporated by reference herein, the IDNR has determined that there is reasonable assurance the proposed activities will be conducted in a manner that will not violate water quality standards of the state of Iowa.

#### GENERAL CONDITIONS

1. Prior to construction, the IADOT is responsible for securing and for compliance with such other permits or approvals as may be required by the IDNR, federal, state, or local governmental agencies for the project activities described.
2. You are encouraged to conduct your construction activities during a period of low flow.
3. Clearing of vegetation, including trees located in or immediately adjacent to waters of the state, shall be limited to that which is absolutely necessary for construction of the project. All vegetative clearing material shall be removed to an upland non-wetland disposal site.
4. All construction debris shall be disposed of on land in such a manner that it cannot enter a waterway or wetland. Construction equipment, activities, and materials shall be kept out of the water to the maximum extent possible. Equipment for handling and conveying materials during construction shall be operated to prevent dumping or spilling the material into waterbodies, streams or wetlands except as approved herein. Care shall be taken to prevent any petroleum products, chemicals, or other deleterious materials from entering waterbodies, streams or wetlands.
5. Erosion control features (i.e., silt fences, silt ditches, silt dikes, silt basins, etc.) must be installed to provide continuous erosion control throughout the construction and post construction period as well as the revegetation of all disturbed areas upon project completion. Where siltation control features have been reduced in capacity by 50% or more, the features shall be restored to their original condition with a minimum of delay.
6. All disturbed areas not covered with riprap shall be seeded with native grasses, excluding Reed Canarygrass (*Phalaris arundinacea*) or any aggressive or invasive species, during an optimal seeding period. If excavation and construction are completed outside an optimal seeding period, temporary erosion control protection shall be implemented immediately upon completion of excavation and construction and shall be maintained until such time as seeding can be completed during an optimal period. The IADOT shall monitor revegetated areas continuously to assure success of revegetation. If rye is initially planted to stabilize the soil then native warm season grasses shall be planted during the following growing season.

plan. If 2.32 acres of wetlands do not develop, wetland mitigation may be required off-site.

3. The IADOT shall provide an annual report to the Corps and IDNR documenting the extent of the mitigation completed. The IADOT shall conduct an annual survey of the mitigation area to monitor the survival rate of the plantings, and soil and hydrology conditions at the site. The results of the survey may be documented annually on the Rock Island District Standard Mitigation Reporting Form which is available at: <http://www2.mvr.usace.army.mil/Regulatory/> or in an annual progress report as specified in RGL 08-03, <http://www.usace.army.mil/cecw/pages/ralsindx.aspx>. The information and photographs for these reports must clearly demonstrate conditions of the mitigation during the growing season. These annual reports are due no later than December 31 of each year for the monitoring period. All annual monitoring reports shall be formatted for an 8.5 x 11 inch piece of paper. The mitigation monitoring reports will be submitted to the IDNR and to the Corps. Reports are due after the first full growing season after the mitigation is constructed and annually thereafter for a minimum of ten years.
4. These reports shall include the following information at a minimum: (1) Information concerning the survival rate of all plant species which were to be established at the mitigation site. This information shall be collected by a qualified biologist. (2) Annual photographs (taken during the growing season and from consistent photo points) showing representative areas of the site. (3) Vegetative cover map indicating dominant cover species in each area. (4) Wetland hydrology assessment (See Delineation Information <http://www2.mvr.usace.army.mil/Regulatory/>). (5) Monthly surface water elevations at the site.
5. To ensure mitigation success, we will require all newly planted trees be guaranteed for 10 years. All emergent plants will be guaranteed for 5 years. During each monitoring period, there should be at least 50 wetland trees as specified by the mitigation plan accounted for. Emergent plant success will be determined by the aerial coverage. There shall be no areas devoid of wetland vegetation that was planted. Any newly planted tree or shrub (including replacements), which dies to the point that the main leader has died back or where there is 25 percent or more of the crown dead, will be replaced. All replacements will be of the same kind and size of equal wildlife value and function as originally planted. Damages incurred in making replacements will be repaired.
6. The IADOT is required to provide 60-day advance notification to the Corps district engineer before any action is taken to void or modify the instrument, management plan, or long-term protection mechanism, including transfer of title to or establishment of any other legal claims over, the compensatory mitigation site.
7. To preserve the mitigation site for its authorized purpose, there shall be no commercial, industrial or residential activity undertaken or allowed within the mitigation area. There shall be no buildings, dwellings, barns, roads, advertising signs, billboards or other structures built or placed in the mitigation area, except when provided in the original mitigation plan, the IADOT may install a viewing site, outdoor seating facility along with a plaque or other historical signage, tree stands or water fowl hunting blinds; There shall be no dredging, filling, excavating, mining, drilling or removal of any topsoil, sand, gravel, rock, minerals or other materials.
8. To preserve the mitigation site for its authorized purpose, no plowing, tilling, cultivating, planting, timbering, or other agricultural activities may take place within the mitigation area except for the purposes described in the IADOT's approved mitigation plan. The IADOT is

7. The removal of the bridge structure will be in conformance with all applicable state and local requirements.
8. Any debris from the bridge removal/replacement that falls into the water will remain there only temporarily and will be removed accordingly. The debris will be properly disposed of in an upland non-wetland location.
9. If temporary structures are needed for the project, then the temporary structures and fills shall involve the least damaging and minimum amount of disturbance/impacts to waters of the state and appropriate measures must be taken to maintain near normal downstream flows, allow the passage of fish, and minimize flooding. Fills shall be constructed of clean aggregate of suitable size to prevent washing out of the structure by high flows. All temporary fills shall be completely removed to an upland non-wetland site and the area restored to pre-project conditions within 30 days of the end of their use.
10. Riprap shall consist of clean native fieldstone, clean quarry run rock or clean broken concrete. If broken concrete is used all reinforcement material shall be completely removed from it; if removal is not possible, said reinforcement material shall be cut flush with the flat surface of the concrete. It shall be the ILDOT & IADOT's responsibility to maintain the riprap such that any reinforcement material that becomes exposed in the future is removed. The concrete pieces shall be appropriately graded and no piece shall be larger than 3 feet across the longest flat surface. No asphalt or petroleum based material shall be used as or included in riprap material.

**MITIGATION CONDITIONS**

Mitigation			
Type of mitigation	Emergent (acres)	Forested (acres)	Total (acres)
Create @ Catfish Cr.	0.09	1.1	1.19
Restore @ Bridge	0.30	2.02	2.32
Total (acres)	0.39	3.12	3.51

1. The IADOT will create 0.09 acres of emergent and 1.1 acres of forested wetland at the Catfish Creek Wetland Mitigation Site in S1, T88N, R2E and S6, T88N, R3E, Dubuque County, Iowa. The IADOT will also restore all temporarily impacted wetlands at the bridge location (a total of 2.32 acres of wetlands - 0.30 acres of emergent & 2.02 acres of forested wetlands).
2. Mitigation work shall begin concurrent with the initiation of project construction. The mitigation work shall be completed within one year of the initiation of project construction on the site. The IADOT will notify the Corps and IDNR in writing upon the completion of the wetland mitigation plan. A post construction report shall be submitted to the IDNR and to the Corps upon completion. At least 1.19 acres of wetland (1.1 ac forested and 0.09 ac emergent) will develop at the Catfish Creek Wetland Mitigation Site. At the bridge location, 2.32 acres of wetland will be fully restored. A post construction survey will be conducted to show that the ground elevations at these locations are at or below the original contours. These restored wetlands will be monitored once they are replanted with appropriate species as outlined in the mitigation

obligated to establish or re-establish vegetation through seedings or plantings in furtherance of that plan. Further, the IADOT may manipulate vegetation, topography and hydrology on the mitigation area through diking, pumping, water management, excavating, burning, cutting pesticide application and other suitable methods for the purpose of protecting, enhancing buffers, wetlands and wetland vegetation. The IADOT is responsible for compliance with all federal, state and local laws governing the safety and maintenance of the property, including the control of noxious weeds within the mitigation area. Grazing of the mitigation area by domestic livestock is prohibited.

9. To ensure that the mitigation site can be maintained for its authorized purpose, the IADOT must acquire, preserve and defend acquisition and any water or land rights where needed to maintain the ecological functions of the required mitigation. The IADOT is obligated to install, operate and maintain water control structures for the purpose of protecting, re-establishing and enhancing wetlands and their functional values. This includes the right to transport construction materials to and from the site of any existing or proposed water control structure. The hydrology of the mitigation area will not otherwise be altered in any way or by any means including pumping, draining, diking, impounding or diverting surface or ground water into or out of the mitigation area.
10. The IADOT shall notify the Corps district engineer within 60 days if the compensatory mitigation project is not achieving its performance standards as anticipated. The IADOT shall provide 60-day advance notification to the Corps district engineer if any action is taken to modify the approved mitigation plan. Remedial work may include re-grading and/or replanting the mitigation site. The IADOT shall take immediate proactive steps necessary to correct any deficiencies outlined in the monitoring reports and shall coordinate with this office during implementation to insure compliance with the terms and conditions in this permit.
11. The IADOT shall provide 60-day advance notification to the Corps district engineer prior to any planned conveyance of mitigation lands for the Corps district engineer's approval. The notification shall identify how and by whom the approved mitigation shall be accomplished. The IADOT shall provide documentation of any conveyance in writing and by certified mail within 15 days after the conveyance. The responsible party identified in the permit shall retain all liability for maintaining adequate mitigation and accomplishing any needed corrective work should the Corps district engineer determine that the mitigation is not satisfactory.
12. The IADOT must take the actions required to record this Section 401 Water Quality Certification and Section 404 Permit with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property. A copy of the "Filed" stamped copy of the permit/certification will be sent to the Corps and IDNR. Future development or land-use conversion of the wetland mitigation area, or any part thereof, for any purpose which may interfere with or be detrimental to wetland functions, is prohibited without prior written approval from the IDNR and the Corps.
13. The IADOT shall assume all liability for accomplishing any needed corrective work. Remedial work may include grading and/or planting the mitigation site, or may require a new mitigation site. Corrective action may also require additional monitoring to insure successful wetland creation/restoration. IADOT's responsibility to complete the required compensatory mitigation will not be considered fulfilled until you have demonstrated mitigation success and have received written verification from the Corps.



STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR  
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES  
ROGER L. LANDE, DIRECTOR

April 18, 2012

Mr. Ward Lenz  
Chief, Regulatory Branch  
Rock Island District Corps of Engineers  
Clock Tower Building - PO BOX 2004  
Rock Island, IL 61204-2004



Subject: Section 401 Water Quality Certification for the 2012 Nationwide Permits

Dear Mr. Lenz,

The Environmental Protection Commission granted Section 401 Water Quality Certification for the 2012 Nationwide Permits on April 17, 2012. An administrative rule reflecting the Commission's actions was adopted and has an effective date of June 20, 2012.

Based on the inclusion of the 6 Iowa Regional Conditions, the Iowa Department of Natural Resources is issuing Section 401 Water Quality Certification for the 2012 Nationwide Permits with the following conditions:

- For projects that impact an outstanding national resource water, outstanding Iowa water, fens, bogs, seeps, or sedge meadows, an individual Section 401 Water Quality Certification will be required.
- For nationwide permits when the Corps' district engineer has issued a waiver to allow the permittee to exceed the limits of the nationwide permit, an individual Section 401 Water Quality Certification will be required.
- Heavy equipment shall not be used or operated within the stream channel. If in-stream work is unavoidable, it shall be performed in such a manner as to minimize the duration of the disturbance, turbidity increases, substrate disturbance, bank disturbance, and riparian vegetation. This condition does not further restrict otherwise authorized drainage ditch maintenance activities.

For any project that occurs on a water body listed in the Iowa Department of Natural Resources (IDNR) "Special Waters of Concern" list, attached, the Corps of Engineers will contact the IDNR for project-specific comments/conditions to protect the water quality/aquatic resources of the site prior to finalizing the permit decision.

In accordance with the Iowa antidegradation rules, an individual Section 401 Water Quality Certification will be required for any project occurring within an Outstanding Iowa Water or its designated watershed/drainage area. The list and maps of the Outstanding Iowa Waters

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515-281-5918 FAX 515-281-6794 www.iowadnr.gov

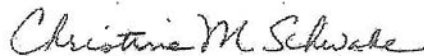
and their designated watersheds/drainage areas can be found on the IDNR website  
<http://www.iowadnr.gov/InsideDNR/RegulatoryWater/WetlandsPermitting.aspx>.

Best management practices must be used to prevent and control spills of hazardous substances and if there is a release, it must be immediately reported to the Iowa Department of Natural Resources at 515-281-8694.

We would like to ask the Corps to encourage applicants to use natural channel design principles and bioengineering techniques when the project involves reconstructing stream channels. This will help restore or enhance the habitat values of the reconstructed stream channel.

If you have any questions or comments regarding this Section 401 Water Quality Certification, please contact me at the address shown below or call (515) 281-6615.

Sincerely,



Christine M. Schwake  
Environmental Specialist

Attachment

To ensure projects covered by a nationwide permit will result in minimal adverse impacts to the aquatic environment, we propose the following Regional Conditions for projects proposed within the State of Iowa, including Indian Country:

1. Side slopes of a newly constructed channel will be no steeper than 2:1 and planted to permanent, perennial, native vegetation if not armored.
2. Nationwide permits with mitigation may require recording of the nationwide permit and pertinent drawings with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to, or interest in, real property, and that the permittee provide proof of that recording to the Corps.
3. Mitigation shall be scheduled prior to, or concurrent with the discharge of dredged or fill material into waters of the United States.
4. For newly constructed channels through areas that are unvegetated, native grass filter strips, or a riparian buffer with native trees or shrubs a minimum of 35 feet wide from the top of bank must be planted along both sides of the new channel. A survival rate of 80% of desirable species shall be achieved within 3 years of establishment of the buffer strip.
5. For single family residences authorized under Nationwide Permit No. 29, the permanent loss of waters of the United States (including jurisdictional wetlands) must not exceed 1/4 acre.
6. For NWP 46, the discharge of dredged or fill material into ditches that would sever the jurisdiction of an upstream water of the United States from a downstream water of the United States is not allowed.



**WETLAND MITIGATION WORK PLAN**  
**CATFISH CREEK WETLAND MITIGATION SITE, DUBUQUE COUNTY, IOWA**  
**U.S. 52/IL 64 MISSISSIPPI RIVER BRIDGE ON-SITE MITIGATION, JACKSON COUNTY, IOWA**

**1. Mitigation Objectives**

The proposed U.S. Highway 52/Illinois Highway 64 (U.S. 52/IL 64) bridge replacement over the Mississippi River will result in the unavoidable permanent and temporary discharges of fill material into wetlands. Permanent impacts will total 0.43 acre (0.06 acre emergent wetland and 0.37 acre forested wetland) and temporary impacts will total 2.32 acres (0.30 acre emergent wetland and 2.02 acres forested wetland).

Iowa Department of Transportation's (Iowa DOT) mitigation objectives are to offset wetland impacts through in-kind wetland restoration and/or creation. The Iowa DOT proposes to provide compensatory wetland mitigation for permanent wetland impacts at an off-site location and will mitigate temporary wetland impacts on-site. Specifically, Iowa DOT will create 0.09 acre of palustrine emergent wetland and 1.1 acres of palustrine forested wetland at an off-site location, and will restore 0.30 acre of emergent wetland and 2.02 acres of forested wetland on-site at the U.S. 52/IL 64 project location. Anticipated benefits of the mitigation include: flood retention, pollution control, nutrient transformation, habitat for aquatic and terrestrial plants and animals, groundwater recharge, and recreational opportunities.

*Please note that all wetland impacts resulting from the proposed project will occur within the State of Iowa; therefore, Iowa DOT will be solely responsible for the success of the wetland mitigation described herein.*

**2. Mitigation Alternatives/Site Selection Process**

Iowa DOT performed a mitigation site search and selection in accordance with the 2008 Compensatory Mitigation Rule [33 CFR part 332] and internal DOT policy.

*Mitigation Bank Credits:*

Iowa DOT first considered the availability of an approved wetland mitigation bank. At the time of investigation, the proposed bridge replacement project did not fall within the service area of an approved wetland mitigation bank.

*In-Lieu Fee Program Credits:*

Iowa DOT then considered the availability of an approved in-lieu fee program. At the time of investigation, there are no approved in-lieu fee programs available that would satisfy the project's mitigation needs.

*Permittee-Responsible Mitigation Under A Watershed Approach:*

Watershed Considerations: The proposed U.S. 52/IL 64 project is located within the Apple-Plum (#07060005) HUC8 watershed and the Wisconsin/Chippewa Ecological Drainage Unit (EDU). Our preliminary site search was focused on potential mitigation areas located within the Apple-Plum or the Grant-Little Maquoketa (#07060003) HUC 8 watersheds within the Wisconsin/Chippewa EDU, as well as sites located within the Maquoketa (#07060006) HUC 8 watershed and the Maquoketa/Upper Cedar EDU. Potential mitigation areas were considered if they could successfully replace acreage, functions, and services lost at the impact sites while taking into account such watershed-scale features as aquatic habitat diversity, habitat connectivity, relationships to hydrologic sources, trends in land-use, ecological benefits, and compatibility with adjacent land-uses.

On-Site Alternatives: Iowa DOT determined that on-site mitigation opportunities are limited to only areas within existing right of way because all land surrounding the project area is owned by the U.S. Army Corps of Engineers and is considered to be part of the Upper Mississippi River National Wildlife and Fish Refuge.

Off-Site Alternatives: Iowa DOT sought input from several resources regarding opportunities to meet the mitigation objectives, including the Iowa Department of Natural Resources, the Jackson County Conservation Board, as well as discussions with local landowners and other individuals knowledgeable with the area. Iowa DOT also screened landscape features (i.e. Soil Survey Geographic and Iowa Soil Properties And Interpretations databases, National Wetland Inventory maps, USGS topographic maps, multiple years of aerial photos) using Geographic Information Systems to locate potential sites that may satisfy the mitigation objectives.



APPENDIX C – Wetland Mitigation Work Plan

Iowa DOT investigated 11 off-site areas with the potential to meet the objectives. Nine of the 11 sites were located in the Apple-Plum HUC8 watershed (Wisconsin/Chippewa EDU) and two sites were located within the Maquoketa HUC 8 watershed (Maquoketa/Upper Cedar EDU). Two of the sites were eliminated from further consideration after contact was made with the landowner and it was learned that they were not interested in creating wetlands on their property. Five other sites were eliminated after a field-review revealed that the site had limited potential to satisfy the mitigation objectives. Three sites appeared to be potentially suitable but were eliminated for various reasons; one was a privately owned site that was part of the Upper Mississippi River National Wildlife Refuge, one site's parcel size greatly exceeded our mitigation needs, and one had recently been purchased by the Iowa Natural Heritage Foundation.

*Selected alternative:*

The proposed mitigation site chosen for development is located in Dubuque County within the Apple-Plum HUC8 watershed and Wisconsin/Chippewa EDU, and is hereafter known as the "Catfish Creek Wetland Mitigation Site". The site will allow Iowa DOT to achieve in-kind wetland restoration/creation, and will serve to replace wetland functions lost as a result of construction of the proposed roadway project identified above. The Catfish Creek Wetland Mitigation site is intended to provide the wetland mitigation required for permanent impacts that will occur during the replacement of the U.S. 52/IL 64 bridge over the Mississippi River. See Table C-1 for a mitigation site identification summary, including mitigation objectives, site location information, and a site description.

**Table C-1. Catfish Creek Wetland Mitigation Site identification summary.**

Mitigation Site Identification and Location Information						
Mitigation Site Name: <u>Catfish Creek Wetland Mitigation Site</u>						
County: <u>Dubuque</u>			HUC 8 Watershed: <u>Apple-Plum (#07060005)</u>			
Section(s): <u>1/6</u>			USGS Quad: <u>Dubuque South, Iowa-III.</u>			
Township: <u>88N</u>		Legal Description: <div style="border: 1px solid black; height: 40px; width: 100%;"></div>				
Range: <u>02E/03E</u>						
Projects Mitigated at Mitigation Site						
Permit No.	County	Highway Number	Project Wetland Impacts			
			Permanent		Temporary	
			Emergent (acres)	Forested (acres)	Emergent (acres)	Forested (acres)
TBD	Jackson (Iowa) Carroll (Illinois)	U.S. 52/IL 64	0.06	0.37	0.30	2.02
Total:			<b>0.06</b>	<b>0.37</b>	<b>0.30</b>	<b>2.02</b>
Wetland Mitigation Design Objectives						
Type of Mitigation:	Wetland Mitigation					
	Emergent (acres)	Forested (acres)	TOTAL (acres)			
Restoration/Creation:	0.09	1.1	1.19			
Enhancement:	0.00	0.00	0.00			
Preservation:	0.00	0.00	0.00			
<b>TOTAL:</b>	<b>0.09</b>	<b>1.1</b>	<b>1.19</b>			
Mitigation Site Description						
Wetland creation will be conducted at a borrow site that is currently being used for the reconstruction of U.S. Highway 52/151/61 in the City of Dubuque (Dubuque County), including a new bridge over Catfish Creek, Mar Jo Quarry Road, and the BNSF Railroad. The borrow area will be re-graded to create at least 0.09 acre emergent wetland, and trees and shrubs will be planted adjacent to the emergent wetland area to create forested wetland on at least 1.1 acres of the site.						

### **3. Site Acquisition and Protection**

The Catfish Creek Wetland Mitigation Site was previously acquired to be used as a borrow area for U.S. 52/151/61 reconstruction in the City of Dubuque. The borrow parcel was acquired in conformance with the Uniform Relocation Assistance and Real Property Acquisition Act, Title 49 Code of Federal Regulations, Part 24 and the Right of Way Acquisition Policy contained in Title 23 of the Code of Federal Regulations, Part 170.

The Iowa DOT intends to retain ownership of the property, but the Iowa Department of Natural Resources (Iowa DNR) will oversee the management of the site as part of the Mines of Spain State Recreational Area. An inter-governmental agreement will be executed in the future to formalize the long-term management of the site. The Iowa DOT and Iowa DNR will cooperatively prohibit future development or land-use conversion of the mitigation areas, or any part thereof, for any purpose which may interfere with or be detrimental to wetland functions without prior written approval from the Iowa DNR and the U.S. Army Corps of Engineers.

### **4. Baseline Site Information**

**Location:** The Catfish Creek Mitigation Site is located in Section 1 of Table Mound Township (T-88N, R-02E) and Section 6 of Mosalem Township (88N, R-03E), in Dubuque County, Iowa (**Figure C-1**). The UTM NAD83 coordinates at the center of the site are: 4,704,245N and 691,870E (Zone 15N). The Site appears on the Dubuque South, Iowa-III, USGS 7.5 minute topographic map (**Figure C-2**).

**HUC6 Watershed:** Upper Mississippi-Maquoketa-Plum (#070600)

**HUC8 Watershed:** Apple-Plum (#07060005)

**Ecological Drainage Unit:** Wisconsin/Chippewa

**Existing Site Conditions:** The Catfish Creek Wetland Mitigation Site is approximately 10.2 acres in size. The central portion of the site is actively being mined for borrow (top-soil only), and the remainder of the site is being used for row-crop production. Catfish Creek flows along the northern boundary of the site, and there is a narrow band of riparian buffer that parallels Catfish Creek. Crossing through the site are two separate transmission lines and a City of Dubuque sanitary sewer line (**Figure C-3**).

**Existing Wetlands:** The National Wetland Inventory (NWI) shows no wetlands mapped on the site. A wetland determination was performed using the Food Security Act Offsite Determination for Agricultural Lands (FSA Determination) and four most recent “Normal” years of precipitation (2005, 2006, 2007, 2008) plus one “Wet” year (2009). One small farmed wetland was identified near the southeast corner of the site, although most of this wetland is located on the adjacent property to the south, and therefore, will not be affected by the proposed mitigation. A site visit on August 14, 2014 confirmed the results of the FSA Determination.

**Hydrological Features:** The site is located within the active floodplain of Catfish Creek (**Figure C-3**). Hydrology to the site is supplied by surface run-off from the adjacent property to the south and from Catfish Creek when it overbanks. The Federal Emergency Management Agency (FEMA) has a mapped floodway boundary crossing the site and is published on the Flood Insurance Rate Map for Dubuque County, Iowa (map #19061C0358E, effective October 18, 2011).

**Soils:** The Soil Survey Geographic (SSURGO) database for Dubuque County shows the mitigation area mapped as predominately Chaseburg silt loam, moderately well drained, 0-2 percent slopes, with a narrow strip of Medary silt loam, 18-30 percent slopes along the southern border of the site. The Iowa Soil Properties and Interpretations Database (ISPAID) lists both soils as being non-hydric.

### **5. Determination of Credits**

The DOT will offset unavoidable, permanent impacts to 0.06 acre of emergent wetland and 0.37 acre of forested wetland by creating at least 0.09 acre of emergent wetland and 1.1 acres of forested wetland at the Catfish Creek Wetland Mitigation Site (see **Figure C-3**).

Temporary wetland impacts that will occur during construction, totaling 0.30 acre of emergent wetland and 2.02 acres of forested wetland, will be mitigated on-site by restoring 0.30 acre of emergent wetland and 2.02 acres of forested wetland at the same locations as where the impacts occurred.

**6a. Mitigation Work Plan (Catfish Creek Wetland Mitigation Site)**

**Mitigation Site Concept:** The general concept of the design is to re-grade the existing borrow area to create emergent and aquatic bed wetland areas in the central portion of the site, and to plant wetland trees and shrubs surrounding the graded areas. Emergent wetland, with water depths of less than two feet, will be created on at least 0.09 acre of the site. Trees and shrubs will be planted on at least 1.1 acre of the site.

**Vegetation:** Areas intended to be emergent and/or aquatic bed wetland, as shown in **Figures C-3**, will be seeded with a wetland seed mixture that is appropriate for site conditions and anticipated hydrology. Seed planted on the site is anticipated to be pure live seed obtained from Iowa, Minnesota, Wisconsin, or Illinois. Depending on species availability, the seed mixture for the emergent wetland area is anticipated to include:

Virginia wild-rye ( <i>Elymus virginicus</i> )	softstem bulrush ( <i>Schoenoplectus tabernaemontani</i> )
bluejoint grass ( <i>Calamagrostis canadensis</i> )	spike rush ( <i>Eleocharis palustris</i> )
rice cutgrass ( <i>Leersia oryzoides</i> )	blue vervain ( <i>Verbena hastata</i> )
switchgrass ( <i>Panicum virgatum</i> )	common boneset ( <i>Eupatorium perfoliatum</i> )
big bluestem ( <i>Andropogon gerardii</i> )	nodding bur marigold ( <i>Bidens cernua</i> )
dark green bulrush ( <i>Scirpus atrovirens</i> )	swamp milkweed ( <i>Asclepias incarnata</i> )
fox sedge ( <i>Carex vulpinoidea</i> )	sneezeweed ( <i>Helenium autumnale</i> )
porcupine sedge ( <i>Carex hystericina</i> )	water plantain ( <i>Alisma plantago-aquatica</i> )
broom sedge ( <i>Carex scoparia</i> )	arrowhead ( <i>Sagittaria latifolia</i> )
tussock sedge ( <i>Carex stricta</i> )	New England aster ( <i>Symphyotrichum novae-angliae</i> )

The area intended to develop as forested wetland as shown in **Figure C-3** will be planted with suitable wetland tree and shrub species. All trees will be air-pruned method trees that are three to five feet in height and a minimum 0.5-inch caliper. Trees/shrubs will be planted with at a rate of at least 50 per acre, will be planted with no more than 20% planted to any one species, and depending on species availability, may include:

silver maple ( <i>Acer saccharinum</i> )	American sycamore ( <i>Platanus occidentalis</i> )
river birch ( <i>Betula nigra</i> )	American elm ( <i>Ulmus americana</i> )
swamp white oak ( <i>Quercus bicolor</i> )	black walnut ( <i>Juglans nigra</i> )
bur oak ( <i>Quercus macrocarpa</i> )	silky dogwood ( <i>Cornus amomum</i> )
eastern cottonwood ( <i>Populus deltoides</i> )	elderberry ( <i>Sambucus canadensis</i> )

In addition to trees, the understory of the designated forested wetland is anticipated to be seeded with the following species (depending on species availability):

tall coneflower ( <i>Rudbeckia lacinata</i> )	bluejoint grass ( <i>Calamagrostis canadensis</i> )
cup plant ( <i>Silphium perfoliatum</i> )	wood reed grass ( <i>Cinna arundinacea</i> )
cardinal flower ( <i>Lobelia cardinalis</i> )	hop sedge ( <i>Carex lupulina</i> )
calico aster ( <i>Symphyotrichum lateriflorum</i> )	fox sedge ( <i>Carex vulpinoidea</i> )
Virginia wild-rye ( <i>Elymus virginicus</i> )	dark green bulrush ( <i>Scirpus atrovirens</i> )

**Invasive Species Control Plan:** The Iowa DOT will attempt to control nuisance vegetative species at the mitigation site. Nuisance vegetative species will account for no more than 10 percent aerial coverage of the total wetland mitigation site prior to the final growing season of the monitoring period. When and where it is appropriate, the Iowa DOT will use currently accepted methodologies in an attempt to control nuisance vegetative species should they account for more than 10 percent aerial coverage. Nuisance vegetative species will be determined by the Iowa DOT on a project-specific basis.

**Soils:** Standard erosion and sediment control measures will be implemented on an as-needed basis and may include (but is not limited to) temporary cover crops and silt fencing. Because the excavation is intended to be shallow and the existing soils have deep surface layers, topsoil will not be stockpiled or re-spread.

**Timing and Sequence of Mitigation Construction:** Letting for construction of the Catfish Creek Wetland Mitigation Site is currently scheduled for June 16, 2015. The letting date for the replacement of the U.S. 52/IL 64 Mississippi River bridge is June 16, 2015.

## **6b. Mitigation Work Plan (On-Site Mitigation)**

**Mitigation Site Concept:** All temporarily impacted wetland areas will be restored to pre-construction elevations and then planted to native vegetation as needed.

**Vegetation:** Temporarily impacted forested wetland areas will be planted with tree and shrub species that are appropriate for site conditions and anticipated hydrology. All trees/shrubs will be air-pruned method stock and will be planted at approximately 300 stems per acre. Species will include at least four of the following species:

silver maple ( <i>Acer saccharinum</i> )	eastern cottonwood ( <i>Populus deltoides</i> )
river birch ( <i>Betula nigra</i> )	buttonbush ( <i>Cephalanthus occidentalis</i> )
swamp white oak ( <i>Quercus bicolor</i> )	elderberry ( <i>Sambucus canadensis</i> )
American sycamore ( <i>Platanus occidentalis</i> )	

The understory of the designated forested wetland areas will be reseeded with native vegetation as needed. It is anticipated that temporarily impacted emergent wetland areas will be allowed to naturally revegetate.

## **7. Maintenance Plan**

### **Maintenance**

The Iowa DOT will be responsible for all maintenance of the Catfish Creek Wetland Mitigation Site during the monitoring period. In order to determine if site maintenance is needed, the Iowa DOT will conduct at least one site visit per year during the growing season throughout the monitoring period. Maintenance activities will be conducted on an as-needed basis and may include mowing, herbicide control of noxious weeds and invasive plants, prescribed burning, and sedimentation control.

### **Maintenance and Protection of Tree Plantings**

The contractor will be responsible for monitoring and replacing all forested wetland trees at the Catfish Creek Wetland Mitigation Site that are not in a live, healthy growing condition at end of the first two growing seasons. In addition, all newly planted trees will have UV-resistant tree shelters installed to protect from depredation.

Trees/shrubs planted on-site to compensate for temporary impacts during construction will not be replaced unless there is catastrophic failure of the plantings (greater than 75% mortality) within the monitoring period.

## **8. Performance Standards**

To measure the ecological performance and development of mitigation wetlands at the Catfish Creek Wetland Mitigation Site, Iowa DOT will document the presence of the three wetland parameters (wetland hydrology, hydrophytic vegetation, hydric soils) required to make a positive wetland determination (under normal conditions), as defined in the *1987 Corps of Engineers Wetlands Delineation Manual* and its *Midwest Regional Supplement*. Within the areas designated as forested wetland, Iowa DOT must demonstrate the survival of at least 50 hydrophytic trees per acre after ten years.

### **Success Criteria**

Iowa DOT must demonstrate by the end of the monitoring period that at least 0.09 acre of emergent wetland and 1.1 acres of forested wetland has been created at the Catfish Creek Wetland Mitigation Site, and that the temporarily impacted wetland areas have been restored to pre-construction wetland conditions (0.30 acre of emergent wetland and 2.02 acres of forested wetland).

## **9. Monitoring**

Iowa DOT proposes to monitor the Catfish Creek Wetland Mitigation Site in accordance with DOT's Mitigation Monitoring Protocol. Monitoring of the mitigation site will begin the first full growing season after construction is complete (including planting) and will occur during the growing season. Monitoring shall occur for a period of no less than five years for the site.

Annual monitoring reports will be submitted to the Rock Island District Corps of Engineers and Iowa DNR by December 31<sup>st</sup> of each year for the duration of the monitoring period. The reports will follow the standard Iowa DOT Mitigation Monitoring Protocol and include the following information:

- Site-specific information, including D.A. Permit number, the permittee/authorized agent, and site location information;
- A list of projects mitigated at the site, with D.A. Permit number of each;
- Mitigation design objectives;
- Delineated wetland acreage for a particular year (broken down by type), and an annual progression of delineated wetland from previous years in which monitoring has been done;
- A description of the site;
- A summary of mitigation data for the wetland mitigation area, including information on hydrology, vegetation, and soils;
- A table showing the status of 404 Permit Special Conditions related to mitigation;
- Conclusions regarding the development/success of the site;
- Specific recommendations for remedial actions;
- A vegetative cover map showing each vegetative community and a list of dominant species in each community (according to guidance within the *1987 Corps of Engineers Wetlands Delineation Manual* and its *Midwest Regional Supplement*);
- A map with drawn boundaries indicating exactly what areas are wetland according to the *1987 Corps of Engineers Wetlands Delineation Manual* and its *Midwest Regional Supplement*, and what wetland types are present (based on the Cowardin Wetland Classification system);
- Ground-level photographs, and a map showing the locations of the photo points.

Iowa DOT also proposes to monitor the development of the on-site emergent and forested wetland mitigation. Iowa DOT will visit the site on annual basis during the growing season, and photo document the development of the site from the new bridge. Photos showing the development of the on-site mitigation areas will be included along with the Catfish Creek Wetland Mitigation Site monitoring report.

#### **10. Long-Term Management Plan**

The Iowa DOT will draft a management plan listing the management provisions and responsibilities for the site. Site management and maintenance will be appropriate to meet the conditions of the D.A. Permit, and future development or land-use conversion of the wetland mitigation area will be strictly prohibited. Iowa DOT will retain a copy of this management plan, and it may be amended, as necessary.

#### **11. Adaptive Management Plan**

Iowa DOT will monitor the proposed mitigation site for a minimum period of five years following site construction. If, after completion of the third year monitoring report, it does not appear as though the site is progressing towards achieving the objectives of this mitigation plan, or it is failing to meet the mitigation requirements of the D.A. Permit, appropriate corrective actions will be taken by Iowa DOT. Corrective actions may include modifications to the mitigation site (i.e. re-grading, re-planting, etc.), and Iowa DOT shall assume all liability for accomplishing any corrective work.

If, after corrective measures have been taken, the site still fails to meet the objectives of the mitigation plan or requirements of the D.A. Permit, and it is determined that additional corrective actions are not feasible, Iowa DOT will seek an alternate site within the Apple-Plum or an adjacent HUC 8 watershed and within the Wisconsin/Chippewa EDU to compensate for the deficiency.

#### **12. Financial Assurances**

The Iowa DOT will fully fund the planning, construction, long-term monitoring and management, and any necessary remediation of the Catfish Creek Wetland Mitigation Site, subject to Iowa DOT Commission approval, programming in Iowa DOT's 5-year program, and availability of funds.



HIGHWAY AND TRANSPORTATION MAP  
**DUBUQUE COUNTY**  
IOWA

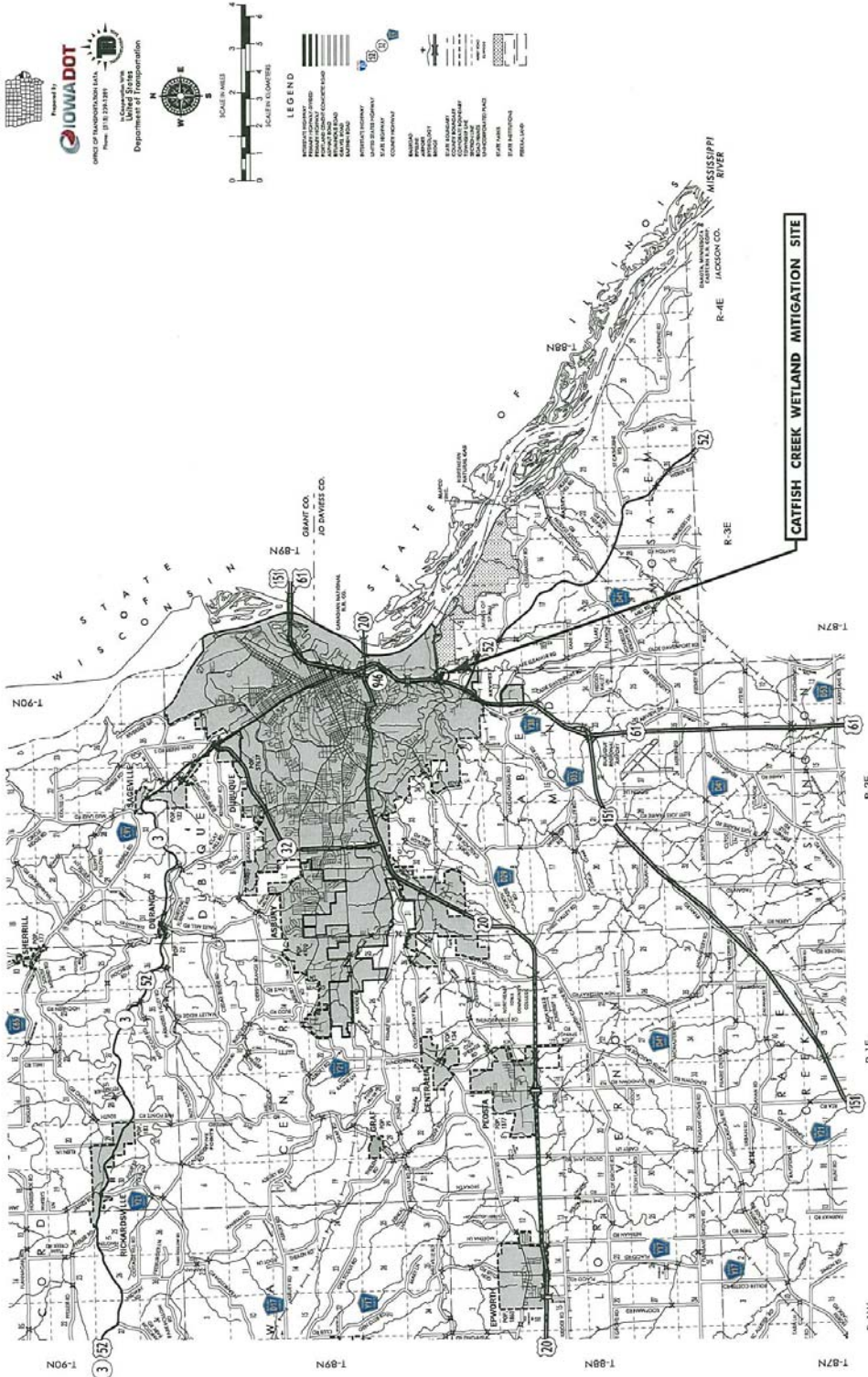


Figure C-1. Mitigation site location map, Dubuque County (T-88N, R-02E, Sec. 1 and T-88N, R-03E, Sec. 6).



APPENDIX C - Wetland Mitigation Work Plan

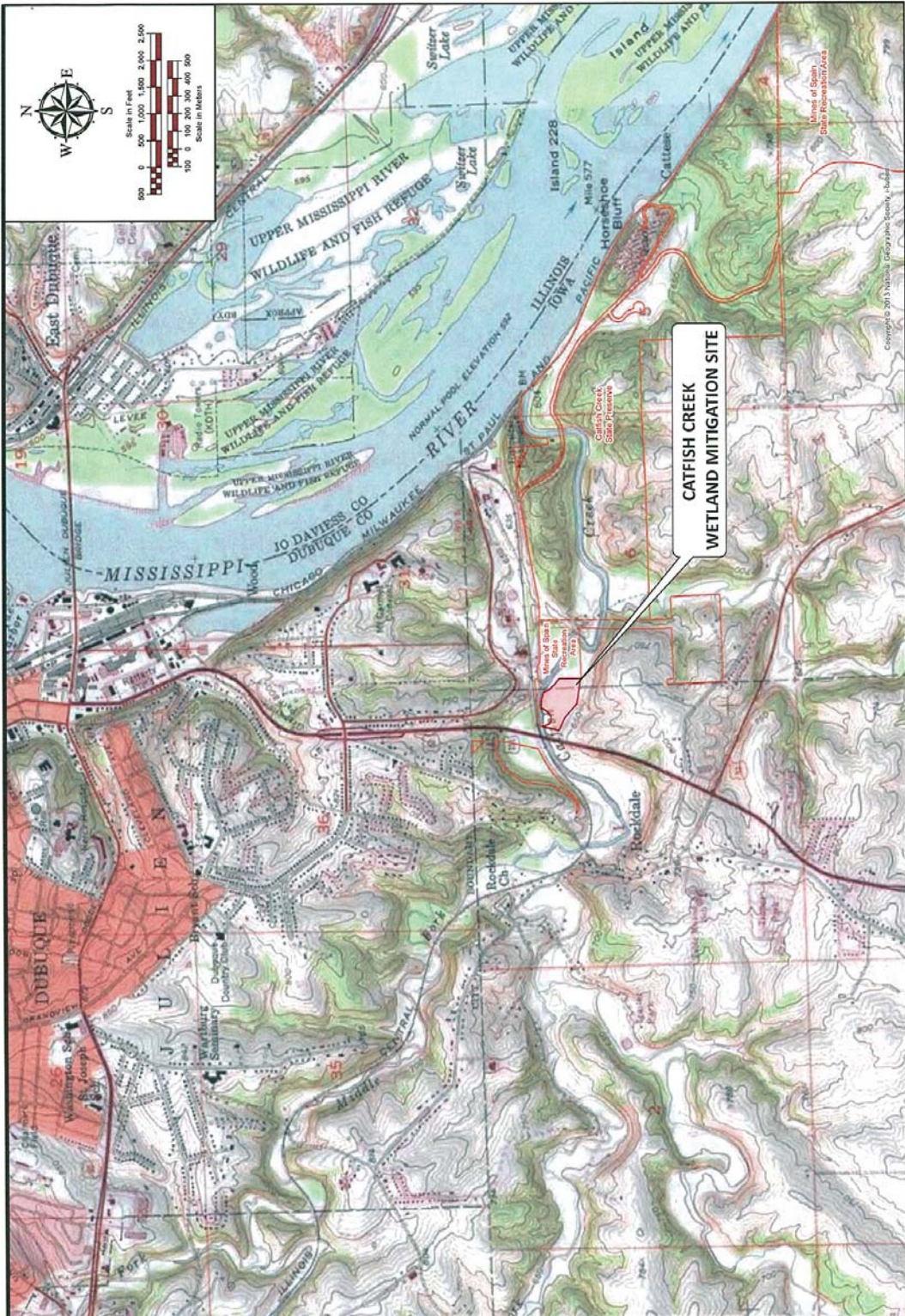


Figure C-2. USGS Quadrangle map showing the location of the Catfish Creek Wetland Mitigation Site, Dubuque County, Iowa (T-88N, R-02E, Sec. 1 & T-88N, R-03E, Sec. 6).

U.S. Highway 52 Illinois Highway 64  
 Carroll County, Illinois and Jackson County, Iowa



APPENDIX C - Wetland Mitigation Work Plan

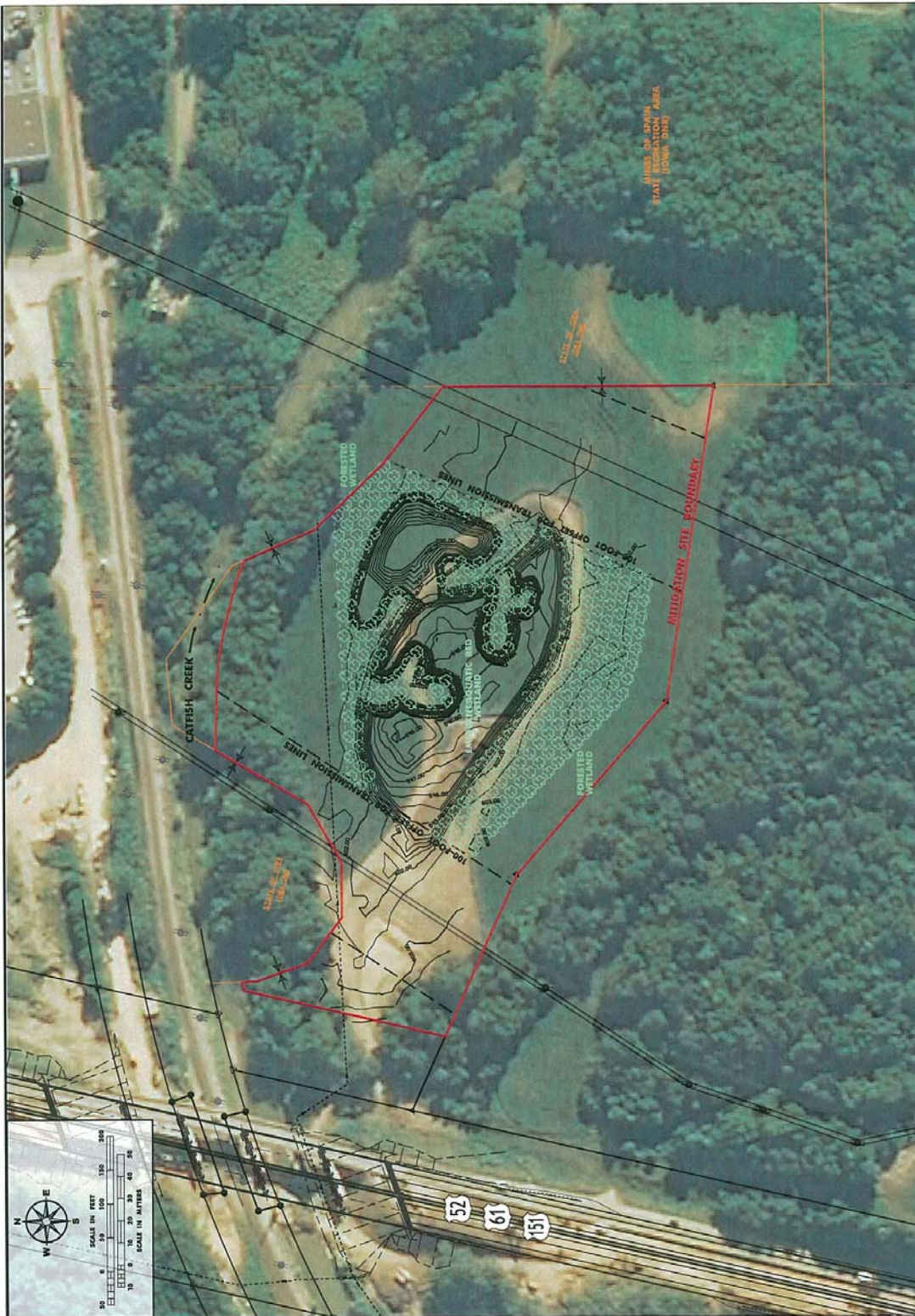


Figure C-3. Catfish Creek Wetland Mitigation Site preliminary concept for compensatory emergent and forested wetland mitigation, Dubuque County, Iowa.

U.S. Highway 52 / Illinois Highway 64  
Carroll County, Illinois and Jackson County, Iowa

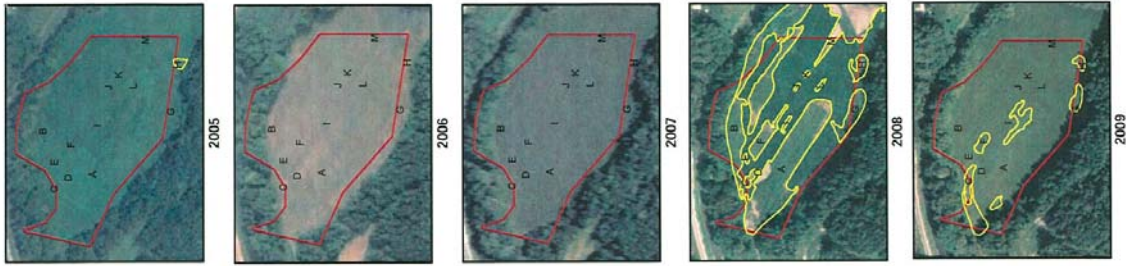


**DATA FORM**  
**FSA Offsite Determination for Agricultural Lands**  
 (Iowa 1994 Wetland Mapping Conventions for Agricultural Lands for 1985 Food Security Act as Amended and Section 404 Clean Water Act)

Project/Site: Catfish Creek Wetland Mitigation Site											Date: August 15, 2014									
Applicant/Owner: Iowa Department of Transportation											County: Dubuque									
Investigator(s): Marc Solberg											State: Iowa									
Wetland Site ID	Station	Twp	Range	Section(s)	NW1 (Y/N)	FSA Slides -- Enter Wetland Signature(s) From List Below												Meets Wetland Mapping Convention (Y/N)	Final Determination (Y/N)	Wetland Size (acres)
						YR 2005	YR 2006	YR 2007	YR 2008	YR 2009										
						W D (N)		W D (N)		W D (N)		W D (N)		W D (N)						
A		88N	02E	1	N							3, 5		4	N	N				
B		88N	02E/03E	1/6	N							3, 5			N	N				
C		88N	02E	1	N							3		3, 4	N	N				
D		88N	02E	1	N							4			N	N				
E		88N	02E	1	N							3			N	N				
F		88N	02E	1	N							3, 5		4	N	N				
G		88N	02E	1	N							3, 5		4	N	N				
H		88N	02E/03E	1/6	N	4						3, 4		3	Y	Y	0.03			
I		88N	02E	1	N							4			N	N				
J		88N	02E	1	N							3			N	N				
K		88N	03E	6	N							3			N	N				
L		88N	02E/03E	1/6	N							4			N	N				
M		88N	03E	6	N							3, 4			N	N				

**Wetland Signatures:**

- 1 = Hydrophytic vegetation (observed as different color than crop or forage)
- 2 = Surface water (oxbows, depressions, etc.)
- 3 = Flooded or drowned out crops, wet/bare soil within cropped fields
- 4 = Stressed crops due to wetness (crop stress is seen as areas of yellowish tined crop, or sparse canopy of coverage of crop, that has been in stress due to wetness)
- 5 = Difference in vegetation within field due to different planting dates
- 6 = Inclusion of wet areas as set aside (these generally show on photos as areas of close grown legumes/grasses surrounded by or bordering areas of row crops)
- 7 = Patches of greener vegetation during years of below normal precipitation (use only as a signature for a "dry year" photo)



APPROVED JURISDICTIONAL DETERMINATION FORM

U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

**SECTION I: BACKGROUND INFORMATION**

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 5/12/2015

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: ROCK ISLAND, CEMVR-OD-P-2014-1885

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: IA/IL County/parish/borough: Jackson/Carroll City: Near Savanna/Sabula  
Center coordinates of site (lat/long in degree decimal format): Lat. ° Pick List, Long. ° Pick List.  
Universal Transverse Mercator: N 4665255 E 734734

Name of nearest waterbody: Mississippi River

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Mississippi River

Name of watershed or Hydrologic Unit Code (HUC): 7060005

- Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.  
 Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- Office (Desk) Determination. Date: May 12, 2015  
 Field Determination. Date(s):

**SECTION II: SUMMARY OF FINDINGS**

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There Are "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

- Waters subject to the ebb and flow of the tide.  
 Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.  
Explain: The Mississippi River is regulated under Section 10 of the RHA of 1899.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There Are "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs  
 Non-RPWs that flow directly or indirectly into TNWs  
 Wetlands directly abutting RPWs that flow directly or indirectly into TNWs  
 Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs  
 Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs  
 Impoundments of jurisdictional waters  
 Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: linear feet: width (ft) and/or 1.88 acres.  
Wetlands: 2.75 acres.

c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual

Elevation of established OHWM (if known):

2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

**SECTION III: CWA ANALYSIS**

**A. TNWs AND WETLANDS ADJACENT TO TNWs**

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW  
Identify TNW: Mississippi River.

Summarize rationale supporting determination: The Mississippi River is regulated under Section 10 of the RHA of 1899.

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": All of the wetlands in the project area directly abut the Mississippi River or its backwaters.

**B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):**

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody<sup>4</sup> is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

- (i) General Area Conditions:  
Watershed size: Pick List  
Drainage area: Pick List  
Average annual rainfall: inches  
Average annual snowfall: inches

(ii) Physical Characteristics:

- (a) Relationship with TNW:  
 Tributary flows directly into TNW.  
 Tributary flows through Pick List tributaries before entering TNW.

Project waters are Pick List river miles from TNW.  
Project waters are Pick List river miles from RPW.  
Project waters are Pick List aerial (straight) miles from TNW.  
Project waters are Pick List aerial (straight) miles from RPW.  
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW<sup>5</sup>:

<sup>4</sup> Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

<sup>5</sup> Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known:

(b) **General Tributary Characteristics (check all that apply):**

Tributary is:  Natural  
 Artificial (man-made). Explain:  
 Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: feet  
 Average depth: feet  
 Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

Silts  Sands  Concrete  
 Cobbles  Gravel  Muck  
 Bedrock  Vegetation. Type/% cover:  
 Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope): %

(c) **Flow:**

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime:

Other information on duration and volume:

Surface flow is: **Pick List.** Characteristics:

Subsurface flow: **Pick List.** Explain findings:

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (check all indicators that apply):  
 clear, natural line impressed on the bank  the presence of litter and debris  
 changes in the character of soil  destruction of terrestrial vegetation  
 shelving  the presence of wrack line  
 vegetation matted down, bent, or absent  sediment sorting  
 leaf litter disturbed or washed away  scour  
 sediment deposition  multiple observed or predicted flow events  
 water staining  abrupt change in plant community  
 other (list):  
 Discontinuous OHWM.<sup>7</sup> Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

High Tide Line indicated by:  Mean High Water Mark indicated by:  
 oil or scum line along shore objects  survey to available datum;  
 fine shell or debris deposits (foreshore)  physical markings;  
 physical markings/characteristics  vegetation lines/changes in vegetation types.  
 tidal gauges  
 other (list):

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain:

Identify specific pollutants, if known:

<sup>6</sup>A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

<sup>7</sup>Ibid.



(iv) **Biological Characteristics. Channel supports (check all that apply):**

- Riparian corridor. Characteristics (type, average width):
- Wetland fringe. Characteristics:
- Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size:        acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain:

Surface flow is: **Pick List**

Characteristics:

Subsurface flow: **Pick List**. Explain findings:

Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain:

Ecological connection. Explain:

Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

Riparian buffer. Characteristics (type, average width):

Vegetation type/percent cover. Explain:

Habitat for:

Federally Listed species. Explain findings:

Fish/spawn areas. Explain findings:

Other environmentally-sensitive species. Explain findings:

Aquatic/wildlife diversity. Explain findings:

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately (        ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
------------------------------	------------------------	------------------------------	------------------------

Summarize overall biological, chemical and physical functions being performed:

**C. SIGNIFICANT NEXUS DETERMINATION**

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

**D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):**

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:  
 TNWs: linear feet      width (ft), Or, 1.88 acres.  
 Wetlands adjacent to TNWs: 2.75 acres.
2. **RPWs that flow directly or indirectly into TNWs.**  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:  
 Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).  
 Other non-wetland waters: acres.  
Identify type(s) of waters:

3. **Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: linear feet width (ft).  
 Other non-wetland waters: acres.  
Identify type(s) of waters:

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.  
 Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:  
  
 Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.<sup>9</sup>**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from "waters of the U.S.," or  
 Demonstrate that water meets the criteria for one of the categories presented above (1-6), or  
 Demonstrate that water is isolated with a nexus to commerce (see E below).

**E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):<sup>10</sup>**

- which are or could be used by interstate or foreign travelers for recreational or other purposes.  
 from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.  
 which are or could be used for industrial purposes by industries in interstate commerce.  
 Interstate isolated waters. Explain:  
 Other factors. Explain:

Identify water body and summarize rationale supporting determination:

<sup>8</sup>See Footnote # 3.

<sup>9</sup>To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

<sup>10</sup>Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.



Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
- Other non-wetland waters: acres.  
Identify type(s) of waters: .
- Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:IL DOT.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: .
- Corps navigable waters' study: .
- U.S. Geological Survey Hydrologic Atlas: .
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name:IL Savanna, 24K.
- USDA Natural Resources Conservation Service Soil Survey. Citation:Carrol - Jackson County Soil Survey.
- National wetlands inventory map(s). Cite name:NWI Google Layers.
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): .  
or  Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD:

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL		
Applicant: Illinois and Iowa DOT		Date: 5/20/2015
File No.: 2014-1885		
Attached is:		
X	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	See Section below
	PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PERMIT DENIAL	B
X	APPROVED JURISDICTIONAL DETERMINATION	C
	PRELIMINARY JURISDICTIONAL DETERMINATION	D
		E
SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <a href="http://usace.army.mil/inet/functions/cw/cecwo/reg">http://usace.army.mil/inet/functions/cw/cecwo/reg</a> or Corps regulations at 33 CFR Part 331.		
A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.		
<ul style="list-style-type: none"> <li>ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.</li> <li>OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.</li> </ul>		
B: PROFFERED PERMIT: You may accept or appeal the permit		
<ul style="list-style-type: none"> <li>ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.</li> <li>APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.</li> </ul>		
C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.		
D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.		
<ul style="list-style-type: none"> <li>ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.</li> <li>APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.</li> </ul>		
E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.		

<b>SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT</b>		
<p>REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)</p>		
<p>ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.</p>		
<b>POINT OF CONTACT FOR QUESTIONS OR INFORMATION:</b>		
<p>If you have questions regarding this decision and/or the appeal process you may contact:</p> <p>Albert J. Frohlich          USACE – Rock Island District – Regulatory Branch          P.O. Box 2004          Rock Island, IL 61204          309-794-5859</p>	<p>If you only have questions regarding the appeal process you may also contact the Division Engineer through:</p> <p>Mr. Thomas McCabe          Administrative Appeals Review Officer          US Army Engineer Division, Mississippi Valley          ATTN: CEMVD-PD-OD          P. O. Box 80          Vicksburg, MS 39181-0080</p>	
<p>RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.</p>		
<p>_____          Signature of appellant or agent.</p>	<p>Date:</p>	<p>Telephone number:</p>

IOWA 401 PERMIT



TERRY E. BRANSTAD, GOVERNOR  
KIM REYNOLDS, LT. GOVERNOR

STATE OF IOWA

DEPARTMENT OF NATURAL RESOURCES  
CHUCK GIPP, DIRECTOR

May 12, 2015

✓ MR PAUL LOETE  
ILLINOIS DEPARTMENT OF TRANSPORTATION  
819 DEPOT AVE  
DIXON IL 61021

MR JIM ROST  
IOWA DEPARTMENT OF TRANSPORTATION  
800 LINCOLN WAY  
AMES IA 50010

RECEIVED REGION 2	D-2	D-3	PROGRAM DEVELOPMENT
			PROGRAM IMPLEMENTATION
			OPERATIONS
			ADMINISTRATIVE SERVICES
			LOCAL ROADS
MAY 19 2015			
REGION ENGINEER			
Center with Region Engineer Correspondence for RE signature Correspondence for your signature			

Dear Messrs. Loete and Rost:

After reviewing your request for State 401 Water Quality Certification, the Iowa Department of Natural Resources (IDNR) has issued the enclosed Certification. Please read the attached conditions carefully before beginning work on the project.

A copy of this Certification has been forwarded to the office of the Army Corps of Engineers (Corps) as indicated below.

If you have any questions or comments about the certification or any conditions contained therein, please contact me at the address shown below or call (515) 725-8399.

Sincerely,

Christine M. Schwake  
Environmental Specialist

cc: Mr. Al Frohlich, Department of the Army Corps of Engineers, Rock Island District,  
Clock Tower Building, P.O. Box 2004, Rock Island, IL 61204-2004

**IOWA DEPARTMENT OF NATURAL RESOURCES**  
**SECTION 401 WATER QUALITY CERTIFICATION**

**Certification issued to:** \_\_\_\_\_ **Effective:** May 12, 2015

Illinois Department of Transportation  
819 Depot Avenue  
Dixon, IL 61021

Iowa Department of Transportation  
800 Lincoln Way  
Ames, IA 50010

Prepared By: Christine M Schwake Date Executed: May 12, 2015  
Christine M. Schwake, IDNR, Wallace State Office Building, Des Moines, IA 50319-0034 (515) 725-8399

STATE OF IOWA COUNTY OF POLK  
I HERBY CERTIFY I AM THE OFFICIAL AND LAWFUL CUSTODIAN OF THE PUBLIC RECORDS MAINTAINED BY THE IOWA DEPARTMENT OF NATURAL RESOURCES AND THE FOREGOING DOCUMENT IS A TRUE AND ACCURATE PHOTOCOPY OF THE RECORD COPY MAINTAINED IN MY CUSTODY AS A PUBLIC RECORD OF THE DEPARTMENT IN THE ORDINARY COURSE OF ITS BUSINESS. EXECUTED AT DES MOINES BY CRAIG OTTO (515-725-8480) ON MAY 12, 2015

*Craig Otto*

**Project certified:** US Army Corps of Engineers, No. CEMVR-OD-P-2014-1885  
State 401 Water Quality Certification, No. 15-N-097-01-01-S

**Project Description:** The Illinois Department of Transportation (ILDOT), and Iowa Department of Transportation (IADOT) will replace the existing U.S. 52/Illinois Highway 64 (US 52/IL 64) bridge that spans the Mississippi River near Sabula, Iowa and Savanna, Illinois (S8, T84N, R7E, Jackson County, Iowa & S4, T24N, R3E, Carroll County, Illinois).

The Illinois DOT will replace the existing causeway with a re-aligned causeway to match with the new US 52 Bridge that spans the Mississippi River. A scenic pull off overlook will be part of the new causeway.

This project will result in the navigation channel being shifted 150 feet towards the right descending bank with the resulting navigation channel being 508' wide. The United States Coast Guard (USCG) has approved this change and will issue a permit to the ILDOT for this shift. During construction a temporary navigation channel will be maintained at a minimum 350' width.



The new bridge will have eleven piers. Five of the piers will be in the Mississippi River channel and six will be in the backwater areas. Upon completion of the new bridge, all of the old piers will be removed to a depth specified by the USCG.

The project will result in unavoidable temporary and permanent impact to wetlands and waters of the U.S. Permanent impacts will total 0.43 acres of wetlands (0.06 ac of emergent and 0.37 ac of forested wetlands), and 1.88 acres of Mississippi River. Temporary impacts will total 2.32 acres of wetlands (0.30 ac of emergent and 2.02 ac of forested wetlands). The fill will be the result of new piers in the river and backwater areas, and to reconstruct 1500' of the US 52 causeway. Additional fill will be required for the construction of the new bridge piers and/or clearing and grubbing of trees underneath the footprint of the new bridge. Other temporary impacts will result from access clearing to give contractors access to the site.

To construct the bridge and causeway, work may be performed using temporary work structures, which may include earth embankments, causeway work pads or prefabricated modular bridges. Barges may also be used and shall be used in accordance with the USCG permit that ILDOT obtains.

Upon completion of the new bridge, the old bridge will be removed through the use of explosives. This work will be in coordination with the USCG and ILDOT will follow all aspects of any USCG permit specifications for removal. All material from this bridge will be removed from the Mississippi River and backwaters immediately.

To mitigate for the loss of wetlands, the IADOT will construct the wetland mitigation site. All of the wetland impacts are strictly on the Iowa side of this project. The IADOT will create 0.09 acres of emergent and 1.1 acres of forested wetland at the Catfish Creek Wetland Mitigation Site in S1, T88N, R2E and S6, T88N, R3E, Dubuque County, Iowa. The IADOT will also restore all temporarily impacted wetlands (0.30 ac of emergent wetland and 2.02 ac if forested wetland) at the bridge location (S8, T84N, R7E, Jackson County, Iowa).

The ILDOT will serve as the lead agency for this project and will be responsible for its letting, overseeing the construction and demolition of the old bridge. The IADOT will be responsible for ensuring that all aspects of the wetland mitigation are completed.

**Water quality use designation:**

This reach of the Mississippi River is designated as Class A1 Primary contact recreational use. These are waters in which recreational or other uses may result in prolonged and direct contact with the water, involving considerable risk of ingesting water in quantities sufficient to pose a health hazard. This reach of the Mississippi River is also designated as Class B(WW-1) which are waters in which temperature, flow and other habitat characteristics are suitable to maintain warm water game fish populations along with a resident aquatic community that includes a variety of native nongame fish and invertebrate species. This reach of the Mississippi River is also designated as Class HH, human health, which are waters in which fish are routinely harvested for human consumption or waters both designated as a drinking water supply and in which fish are routinely harvested for human consumption. All surface waters in Iowa, including wetlands and those designated for Class "A", "B", and/or "C" are classified for the following general uses: livestock and wildlife watering, noncontact recreation, crop irrigation, and industrial, agricultural, domestic, and other incidental withdrawal uses.

The Iowa Department of Natural Resources (IDNR) has issued this State 401 Water Quality Certification pursuant to Section 401 of the Clean Water Act. The Army Corps of Engineers (Corps) requires state Certification before a Section 404 permit can be issued. Section 401 Certification represents the IDNR's concurrence that the project certified is consistent with the Water Quality Standards of the state of Iowa as set forth in Chapter 61, Iowa Administrative Code.

Subject to the attached conditions, incorporated by reference herein, the IDNR has determined that there is reasonable assurance the proposed activities will be conducted in a manner that will not violate water quality standards of the state of Iowa.

#### **GENERAL CONDITIONS**

1. Prior to construction, the IADOT is responsible for securing and for compliance with such other permits or approvals as may be required by the IDNR, federal, state, or local governmental agencies for the project activities described.
2. You are encouraged to conduct your construction activities during a period of low flow.
3. Clearing of vegetation, including trees located in or immediately adjacent to waters of the state, shall be limited to that which is absolutely necessary for construction of the project. All vegetative clearing material shall be removed to an upland non-wetland disposal site.
4. All construction debris shall be disposed of on land in such a manner that it cannot enter a waterway or wetland. Construction equipment, activities, and materials shall be kept out of the water to the maximum extent possible. Equipment for handling and conveying materials during construction shall be operated to prevent dumping or spilling the material into waterbodies, streams or wetlands except as approved herein. Care shall be taken to prevent any petroleum products, chemicals, or other deleterious materials from entering waterbodies, streams or wetlands.
5. Erosion control features (i.e., silt fences, silt ditches, silt dikes, silt basins, etc.) must be installed to provide continuous erosion control throughout the construction and post construction period as well as the revegetation of all disturbed areas upon project completion. Where siltation control features have been reduced in capacity by 50% or more, the features shall be restored to their original condition with a minimum of delay.
6. All disturbed areas not covered with riprap shall be seeded with native grasses, excluding Reed Canarygrass (*Phalaris arundinacea*) or any aggressive or invasive species, during an optimal seeding period. If excavation and construction are completed outside an optimal seeding period, temporary erosion control protection shall be implemented immediately upon completion of excavation and construction and shall be maintained until such time as seeding can be completed during an optimal period. The IADOT shall monitor revegetated areas continuously to assure success of revegetation. If rye is initially planted to stabilize the soil then native warm season grasses shall be planted during the following growing season.

7. The removal of the bridge structure will be in conformance with all applicable state and local requirements.
8. Any debris from the bridge removal/replacement that falls into the water will remain there only temporarily and will be removed accordingly. The debris will be properly disposed of in an upland non-wetland location.
9. If temporary structures are needed for the project, then the temporary structures and fills shall involve the least damaging and minimum amount of disturbance/impacts to waters of the state and appropriate measures must be taken to maintain near normal downstream flows, allow the passage of fish, and minimize flooding. Fills shall be constructed of clean aggregate of suitable size to prevent washing out of the structure by high flows. All temporary fills shall be completely removed to an upland non-wetland site and the area restored to pre-project conditions within 30 days of the end of their use.
10. Riprap shall consist of clean native fieldstone, clean quarry run rock or clean broken concrete. If broken concrete is used all reinforcement material shall be completely removed from it; if removal is not possible, said reinforcement material shall be cut flush with the flat surface of the concrete. It shall be the ILDOT & IADOT's responsibility to maintain the riprap such that any reinforcement material that becomes exposed in the future is removed. The concrete pieces shall be appropriately graded and no piece shall be larger than 3 feet across the longest flat surface. No asphalt or petroleum based material shall be used as or included in riprap material.

**MITIGATION CONDITIONS**

Mitigation			
Type of mitigation	Emergent (acres)	Forested (acres)	Total (acres)
Create @ Catfish Cr.	0.09	1.1	1.19
Restore @ Bridge	0.30	2.02	2.32
Total (acres)	0.39	3.12	3.51

1. The IADOT will create 0.09 acres of emergent and 1.1 acres of forested wetland at the Catfish Creek Wetland Mitigation Site in S1, T88N, R2E and S6, T88N, R3E, Dubuque County, Iowa. The IADOT will also restore all temporarily impacted wetlands at the bridge location (a total of 2.32 acres of wetlands - 0.30 acres of emergent & 2.02 acres of forested wetlands).
2. Mitigation work shall begin concurrent with the initiation of project construction. The mitigation work shall be completed within one year of the initiation of project construction on the site. The IADOT will notify the Corps and IDNR in writing upon the completion of the wetland mitigation plan. A post construction report shall be submitted to the IDNR and to the Corps upon completion. At least 1.19 acres of wetland (1.1 ac forested and 0.09 ac emergent) will develop at the Catfish Creek Wetland Mitigation Site. At the bridge location, 2.32 acres of wetland will be fully restored. A post construction survey will be conducted to show that the ground elevations at these locations are at or below the original contours. These restored wetlands will be monitored once they are replanted with appropriate species as outlined in the mitigation



plan. If 2.32 acres of wetlands do not develop, wetland mitigation may be required off-site.

3. The IADOT shall provide an annual report to the Corps and IDNR documenting the extent of the mitigation completed. The IADOT shall conduct an annual survey of the mitigation area to monitor the survival rate of the plantings, and soil and hydrology conditions at the site. The results of the survey may be documented annually on the Rock Island District Standard Mitigation Reporting Form which is available at: <http://www2.mvr.usace.army.mil/Regulatory/> or in an annual progress report as specified in RGL 08-03, <http://www.usace.army.mil/cecw/pages/rqlsindx.aspx>. The information and photographs for these reports must clearly demonstrate conditions of the mitigation during the growing season. These annual reports are due no later than December 31 of each year for the monitoring period. All annual monitoring reports shall be formatted for an 8.5 x 11 inch piece of paper. The mitigation monitoring reports will be submitted to the IDNR and to the Corps. Reports are due after the first full growing season after the mitigation is constructed and annually thereafter for a minimum of ten years.
4. These reports shall include the following information at a minimum: (1) Information concerning the survival rate of all plant species which were to be established at the mitigation site. This information shall be collected by a qualified biologist. (2) Annual photographs (taken during the growing season and from consistent photo points) showing representative areas of the site. (3) Vegetative cover map indicating dominant cover species in each area. (4) Wetland hydrology assessment (See Delineation Information <http://www2.mvr.usace.army.mil/Regulatory/>). (5) Monthly surface water elevations at the site.
5. To ensure mitigation success, we will require all newly planted trees be guaranteed for 10 years. All emergent plants will be guaranteed for 5 years. During each monitoring period, there should be at least 50 wetland trees as specified by the mitigation plan accounted for. Emergent plant success will be determined by the aerial coverage. There shall be no areas devoid of wetland vegetation that was planted. Any newly planted tree or shrub (including replacements), which dies to the point that the main leader has died back or where there is 25 percent or more of the crown dead, will be replaced. All replacements will be of the same kind and size of equal wildlife value and function as originally planted. Damages incurred in making replacements will be repaired.
6. The IADOT is required to provide 60-day advance notification to the Corps district engineer before any action is taken to void or modify the instrument, management plan, or long-term protection mechanism, including transfer of title to or establishment of any other legal claims over, the compensatory mitigation site.
7. To preserve the mitigation site for its authorized purpose, there shall be no commercial, industrial or residential activity undertaken or allowed within the mitigation area. There shall be no buildings, dwellings, barns, roads, advertising signs, billboards or other structures built or placed in the mitigation area, except when provided in the original mitigation plan, the IADOT may install a viewing site, outdoor seating facility along with a plaque or other historical signage, tree stands or water fowl hunting blinds; There shall be no dredging, filling, excavating, mining, drilling or removal of any topsoil, sand, gravel, rock, minerals or other materials.
8. To preserve the mitigation site for its authorized purpose, no plowing, tilling, cultivating, planting, timbering, or other agricultural activities may take place within the mitigation area except for the purposes described in the IADOT's approved mitigation plan. The IADOT is

obligated to establish or re-establish vegetation through seedings or plantings in furtherance of that plan. Further, the IADOT may manipulate vegetation, topography and hydrology on the mitigation area through diking, pumping, water management, excavating, burning, cutting pesticide application and other suitable methods for the purpose of protecting, enhancing buffers, wetlands and wetland vegetation. The IADOT is responsible for compliance with all federal, state and local laws governing the safety and maintenance of the property, including the control of noxious weeds within the mitigation area. Grazing of the mitigation area by domestic livestock is prohibited.

9. To ensure that the mitigation site can be maintained for its authorized purpose, the IADOT must acquire, preserve and defend acquisition and any water or land rights where needed to maintain the ecological functions of the required mitigation. The IADOT is obligated to install, operate and maintain water control structures for the purpose of protecting, re-establishing and enhancing wetlands and their functional values. This includes the right to transport construction materials to and from the site of any existing or proposed water control structure. The hydrology of the mitigation area will not otherwise be altered in any way or by any means including pumping, draining, diking, impounding or diverting surface or ground water into or out of the mitigation area.
10. The IADOT shall notify the Corps district engineer within 60 days if the compensatory mitigation project is not achieving its performance standards as anticipated. The IADOT shall provide 60-day advance notification to the Corps district engineer if any action is taken to modify the approved mitigation plan. Remedial work may include re-grading and/or replanting the mitigation site. The IADOT shall take immediate proactive steps necessary to correct any deficiencies outlined in the monitoring reports and shall coordinate with this office during implementation to insure compliance with the terms and conditions in this permit.
11. The IADOT shall provide 60-day advance notification to the Corps district engineer prior to any planned conveyance of mitigation lands for the Corps district engineer's approval. The notification shall identify how and by whom the approved mitigation shall be accomplished. The IADOT shall provide documentation of any conveyance in writing and by certified mail within 15 days after the conveyance. The responsible party identified in the permit shall retain all liability for maintaining adequate mitigation and accomplishing any needed corrective work should the Corps district engineer determine that the mitigation is not satisfactory.
12. The IADOT must take the actions required to record this Section 401 Water Quality Certification and Section 404 Permit with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property. A copy of the "Filed" stamped copy of the permit/certification will be sent to the Corps and IDNR. Future development or land-use conversion of the wetland mitigation area, or any part thereof, for any purpose which may interfere with or be detrimental to wetland functions, is prohibited without prior written approval from the IDNR and the Corps.
13. The IADOT shall assume all liability for accomplishing any needed corrective work. Remedial work may include grading and/or planting the mitigation site, or may require a new mitigation site. Corrective action may also require additional monitoring to insure successful wetland creation/restoration. IADOT's responsibility to complete the required compensatory mitigation will not be considered fulfilled until you have demonstrated mitigation success and have received written verification from the Corps.

**SOVEREIGN LANDS PERMIT**



TERRY E. BRANSTAD, GOVERNOR  
 KIM REYNOLDS, LT. GOVERNOR

**STATE OF IOWA**

**DEPARTMENT OF NATURAL RESOURCES**  
 CHUCK GIPP, DIRECTOR

June 15, 2015

Illinois Department of Transportation  
 Attn: Paul Loete  
 819 Depot Avenue  
 Dixon, IL 61021

Subject: **Sovereign Lands Construction Permit 15-115**  
 U.S. 52/IL 64 over the Mississippi River-Savanna, Illinois and Sabula, Iowa  
 Mississippi River  
 Jackson County  
 Section 8, Township 84N, Range 7E

RECEIVED REGION 2	D-2	D-3	PROGRAM DEVELOPMENT
			PROGRAM IMPLEMENTATION
			OPERATIONS
			ADMINISTRATIVE SERVICES
			LOCAL ROADS
JUN 22 2015			
REGION ENGINEER			
Contact with Region Engineer			
Correspondence for RE Signature			
Correspondence for VLR Signature			

Dear Mr. Loete:

As provided under Chapter 461A of the Code of Iowa, the Department of Natural Resources (DNR) hereby grants permission to the Illinois Department of Transportation (the Permittee) to do the following work subject to stipulations stated herein and in the documents submitted in application for this permit which are now on file in the central office of the DNR. Any special conditions and stipulations contained in this permit shall take precedence over plans or specifications provided by the applicant.

Before the project is let for bid the applicant shall contact and meet the Fisheries Biologist in charge of the area to prepare a plan to minimize impacts to sensitive species and conflicts with boaters at the public ramp. You may contact Scott Gritters at (563)880-8781.

You are required to complete and return the enclosed "Report of Completion" postcard upon conclusion of the project in accordance with 571 IAC—13.18.

The Permittee is hereby authorized to replace the existing U.S. 52/IL 64 bridge over the Mississippi River, consistent with this permit and the plans and specifications the Permittee, or its authorized agent, submitted for consideration of this permit (collectively, the Project).

Several Iowa-protected species are known to occur in the Mississippi River in this area including the state-Threatened Western Sand Darter (*Ammocrypta clara*) and the state-Endangered Bluntnose Minnow (*Etheostoma chlorosoma*). Therefore, to avoid potential impacts to those species as a result of this project, the Permittee shall have qualified biologist on site during construction of the coffer dams to remove and relocate any species that may present themselves during placement of coffer dams and during de-watering in preparation for building piers.

In addition, the federally-Threatened northern long-eared bat is known to inhabit this area of the state and may be impacted by this project. The Permittee shall be responsible for coordinating with the



TERRY E. BRANSTAD, GOVERNOR  
KIM REYNOLDS, LT. GOVERNOR

## STATE OF IOWA

DEPARTMENT OF NATURAL RESOURCES  
CHUCK GIPP, DIRECTOR

May 19, 2015

PAUL LOETE  
ILLINOIS DOT  
819 DEPOT AVE  
DIXON IL 61021

DAVE CLAMAN  
IOWA DOT  
800 LINCOLN WAY  
AMES IA 50010

RE: Proposed Bridge Replacement, US 52/IL 64 (Mississippi River)  
Section 8, T84N, R07E; Jackson County, Iowa  
Iowa DNR WR#: 81442

Dear Mr. Loete and Mr. Claman:

Your application for a Flood Plain Development Permit for the above project has been approved. Enclosed is Flood Plain Development Permit Number FP 2015-135 and an approved copy of the engineering plans. The permit was issued subject to various conditions, which you should review carefully. Please pay particular attention to conditions 7, 8, and 9 which address the requirements and limitations concerning: i) the acceptable sizes and types of riprap materials; ii) spoil material placement; and iii) prohibition of alteration of the US Highway 52 overflow bridge. If you don't agree with any of these conditions, you have 30 days from the date of mailing of the permit to appeal. If you wish to appeal, it is suggested that you contact our Legal Services Section within 15 days to determine the correct procedure and format. Also, you should be aware of the fact that any person can appeal the issuance of this permit within the same 30-day period.

Also enclosed is a DNR Form 37, Notification of Completion of Construction. The Form 37 must be completed and returned within 30 days of the completion of construction.

Please note that the project also requires a Sovereign Lands Construction Permit (Construction Permit) from the Department. It is my understanding that the Construction Permit will be sent to you in the same packet as this Flood Plain Development Permit. The Construction Permit also contains conditions and instructions that the applicant is required to follow. You should be aware that construction may not begin until all necessary permits are obtained.

The permittee is responsible for complying with all other local, state and federal statutes, ordinances, rules and permit requirements applicable to the construction, operation and maintenance of the approved works. The project may require a Section 404 Permit from the Corps of Engineers, Rock Island District.

Page 1 of 2

502 EAST 9th STREET / DES MOINES, IOWA 50319-0034  
PHONE 515-725-8200 FAX 515-725-8202 www.iowadnr.gov

Paul Loete and Dave Claman  
US 52/IL 64 Bridge Replacement  
FP 2015-135

May 19, 2015  
Iowa DNR WR#: 81442  
Page 2 of 2

Thank you for your patience and cooperation. If you have any questions, please contact Jim Hallmark of our office at 515-725-8306.

Sincerely,



Kelly M. Stone, P.E.  
Environmental Engineer Senior  
Flood Plain Management and Dam Safety Section

Enclosures

Copies: -Iowa DNR FO #1  
-Ward Lenz; Rock Island District, U.S. Army Corps of Engineers;  
P.O. Box 2004; Rock Island, IL 61204-2004  
-Ben Kober, Zoning Administrator; Jackson County; 201 West Platt;  
Maquoketa, IA 52060-2295


**FLOOD PLAIN PERMIT**

**IOWA DEPARTMENT OF NATURAL RESOURCES  
FLOOD PLAIN DEVELOPMENT PERMIT**

**PERMIT NUMBER:** FP 2015-135

**PERMIT ISSUED TO:** Illinois Dept. of Transportation  
819 Depot Avenue  
Dixon, Illinois 61021

Iowa Dept. of Transportation  
800 Lincoln Way  
Ames, Iowa 50010

**PERMIT ISSUED BY:**  **DATE:** 5-20-15  
Kelly M. Stone, P.E.  
Environmental Engineer Senior,  
Flood Plain Management and Dam Safety Section

**PROJECT LOCATION:** Section 8, T84N, R07E; Jackson County, Iowa

**WORK RECORD NUMBER :** 81142

**PERMITTED ACTIVITY:** In accordance with the approved engineering plans and subject to the following permit conditions, permittee is authorized to remove and replace the existing 2469' , 26-span steel truss bridge with a 2454', 14-span tied arch and plate girder bridge; perform associated grading, and place revetment on the flood plain of the Mississippi River at the above-described location.

**BASIS FOR ISSUANCE:** The decision to issue this permit was based on a staff review of the project with respect to relevant approval criteria contained in Chapter 72 of the Department's administrative rules (Agency 567, Iowa Administrative Code) and applicable provisions of Iowa Code Sections 455B.262, .264, .275 and .277.

**PERMIT CONDITIONS:**

1. **Disclaimer.** No legal or financial responsibility arising from the construction, operation or maintenance of the approved works shall attach to the State of Iowa or the Department due to issuance of this permit.
2. **Maintenance.** The permittee and any successor in real estate on which the permitted activity is located shall be responsible for proper maintenance.
3. **Other Permits, Licenses and Regulations.** The permittee shall be responsible for complying with all other local, state and federal statutes, ordinances, rules and permit requirements applicable to the construction, operation and maintenance of the approved works.
4. **Revocation.** This permit may be revoked by the Department if construction is not completed within 5 years of the date of issue.
5. **Change in Plans.** This permit only authorizes the project in accordance with the approved engineering plans. No changes shall be made without prior authorization from the Department.

6. **Lands, Easements and Rights-of-Way**. The permittee shall be responsible for obtaining all lands, easements or rights-of-way necessary for the construction and maintenance of the approved works.
7. **Riprap Requirements**. Acceptable riprap material includes: field stone, quarry rock, and broken concrete. If any broken concrete is used, all exposed reinforcing steel must be cut off flush with the surface of the concrete prior to placing the riprap. Also, any concrete pieces larger than three feet across shall either be broken into smaller pieces prior to placement or not used as riprap material. The use of asphalt or other solid waste is prohibited.
8. **Spoil Disposition Requirements**. All excess spoil material resulting from the project shall not be placed in any Floodway Zone delineated in a Flood Insurance Study. In addition, spoil material should not be placed in an area that is, or could be, classified as a regulated wetland.
9. **Alteration of Overflow Structure Prohibition**. The US Highway 52 overflow bridge located in Section 20, T84N, R07E shall not be replaced, removed, or otherwise altered without prior authorization from the Iowa Department of Natural Resources.

#### CERTIFICATION OF MAILING

I hereby certify that I have this 17 day of June, 2015 mailed Flood Plain Development Permit No. FP 2015-135 to the permittee.

By 

IOWA DEPARTMENT OF NATURAL RESOURCES  
CERTIFICATION OF COMPLETION OF CONSTRUCTION

Notice is hereby given that construction of the project authorized by the Department of Natural Resources was completed in accordance with approved plans and specifications.

PERMIT NUMBER(S)	2015-135
------------------	----------

WR#: 81442

ISSUED TO	Illinois Dept of Transportation and Iowa Dept of Transportation
-----------	---

DATE OF PROJECT COMPLETION	SIGNATURE OF APPLICANT OR AUTHORIZED AGENT
----------------------------	--

02/2009 cmc

FP Form 37

DNR Form 542-3018

Please mail form back to:

FLOOD PLAIN PERMITS

IOWA DNR  
502 E 9<sup>TH</sup> ST  
DES MOINES IA 50319



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

*William C. Olson* 3-12-15

William C. Olson, P.E. Date \_\_\_\_\_  
 License Number 21735  
 My License Renewal Date is December 31, 2018

Pages or sheets covered by this seal:  
**1-118, 137-172, 391-528**

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Mark A. Land, P.E. Date \_\_\_\_\_  
 License Number 14045  
 My License Renewal Date is December 31, 2018

Pages or sheets covered by this seal:  
**119-136**

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

*Martin R. Furrer*

Martin R. Furrer, P.E. Date \_\_\_\_\_  
 License Number 15916  
 My License Renewal Date is December 31, 2018

Pages or sheets covered by this seal:  
**173-349**

STATE OF ILLINOIS  
 MARTIN R. FURRER  
 081-005886  
 CHICAGO  
 IL  
 LICENSED STRUCTURAL ENGINEER

NAME \_\_\_\_\_  
 EXPIRES: \_\_\_\_\_  
 DATE : \_\_\_\_\_  
 SHEETS: 173-349

STATE OF ILLINOIS  
 ROGER L. DIGIULIO  
 081-005197  
 CHICAGO  
 IL  
 LICENSED STRUCTURAL ENGINEER

NAME \_\_\_\_\_  
 EXPIRES: \_\_\_\_\_  
 DATE : \_\_\_\_\_  
 SHEETS: 350-390

LICENSED PROFESSIONAL ENGINEER  
 MARK A. LAND  
 062-063448  
 STATE OF ILLINOIS

NAME \_\_\_\_\_  
 EXPIRES: \_\_\_\_\_  
 DATE : \_\_\_\_\_  
 SHEETS: 119-136

Department of Natural Resources  
**APPROVED PLANS**  
 Flood Plain Permit FP No. 205-135  
 1 of 5

P.L.T. 10/10/15

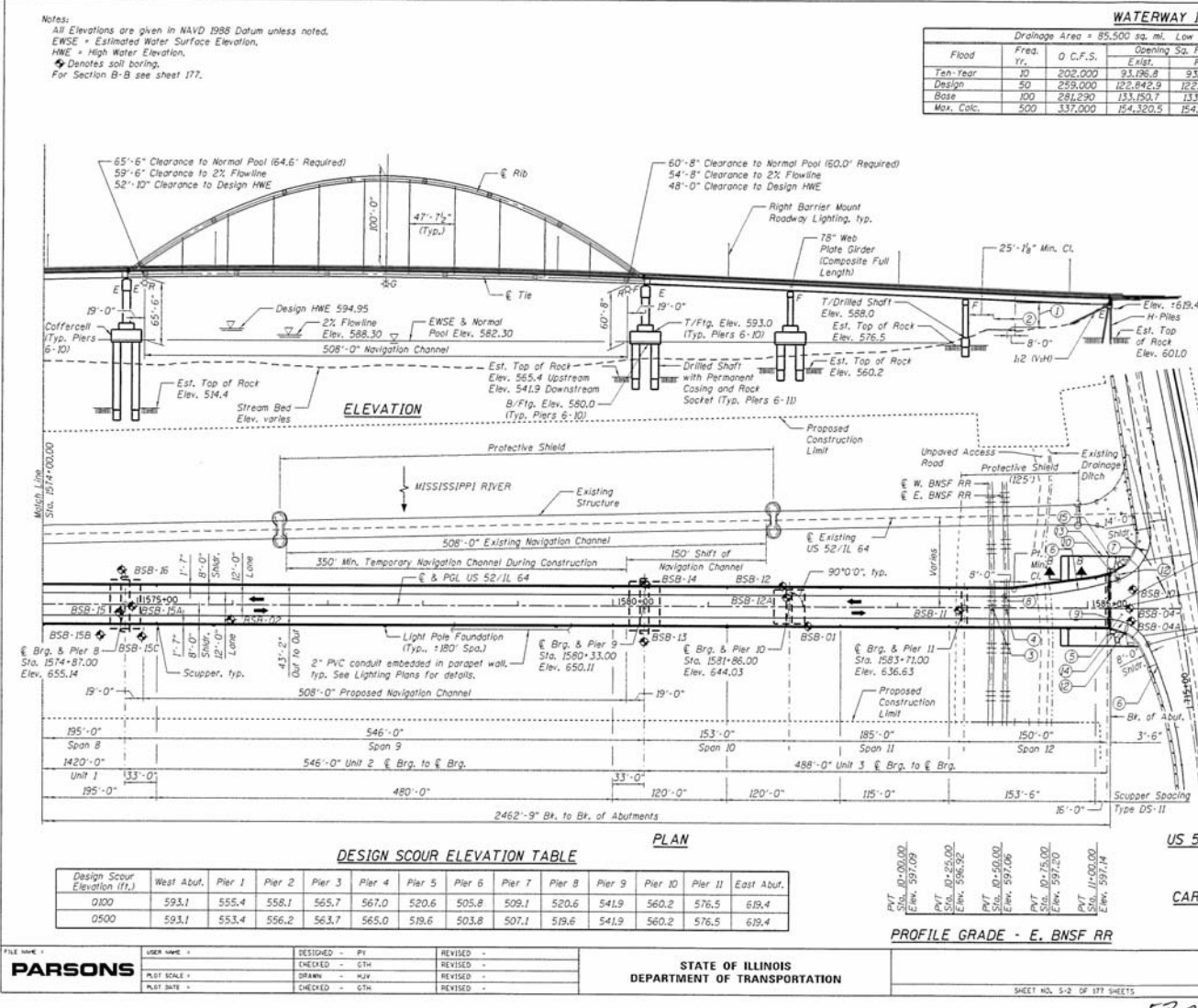
USER NAME : JSMU	DESIGNED - JB	REVISED -
	DRAWN - SO	REVISED -
PLOT SCALE : 2/8000 1" = 200'	CHECKED - JC	REVISED -
PLOT DATE : 3/28/2015	DATE - 03-12-2015	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

ENGINEERING SEALS AND SIGNATURES

SCALE: N/A SHEET 1 OF 1 SHEETS STA.

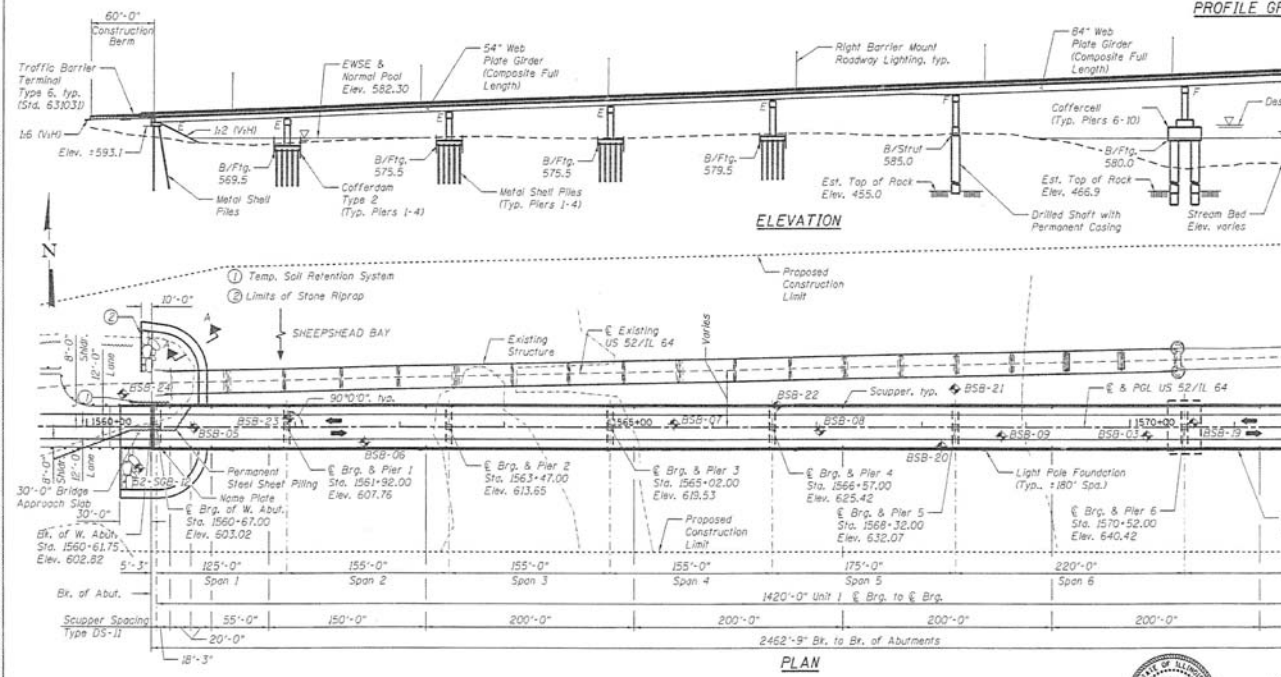
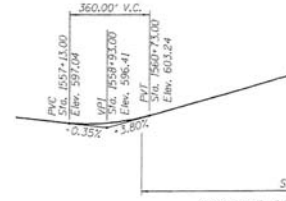
FAP Route 17 (US 52/IL 64)  
 Project ACNHPP-0017(132)  
 Section 104B-2  
 Carroll County, IL & Jackson County, IA  
 Contract No. 64G59



FAP Route 17 (US 52/IL 64)  
 Project ACNHPP-0017(132)  
 Section 104B-2  
 Carroll County, IL & Jackson County, IA  
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**Benchmarks:**  
 BM CPS - Concrete pedestal set south of the west abutment of Illinois River Bridge SN 008-6000 on US 52. Stationing @ Sta. 1560+65.46; Offset 24.85' Lt. NAVD 88 = 597.891 Ft.  
 Existing Structure: SN 008-6000 Steel girder, steel truss and concrete slab superstructure bridge on pile bents and piers. Approximately 50' to 100' upstream. Approximately 2470' long by 20' wide. Constructed in 1932. To be removed after new structure is complete.  
 Traffic Controls: none  
 Salvage existing Navigation Lighting, see note on sheet 179.

**Notes:**  
 All Elevations are given in NAVD 1988 Datum unless noted.  
 NAVD 1988 = NGVD 1929 - 0.01'  
 EWSE = Estimated Water Surface Elevation.  
 HWE = High Water Elevation.  
 \* Denotes soil boring.  
 For Section A-A see sheet 177.



**SEISMIC DATA**  
 Seismic Performance Zone (SPZ) = 1  
 Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.118g  
 Design Spectral Acceleration at 0.2 sec. ( $S_{D2}$ ) = 0.161g  
 Soil Site Class = D (West Abut., Piers 1-8)  
 Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.084g  
 Design Spectral Acceleration at 0.2 sec. ( $S_{D2}$ ) = 0.121g  
 Soil Site Class = C (Piers 9-11, East Abut.)

**DESIGN STRESSES**  
 FIELD UNITS  
 $f'_c$  = 3,500 psi  
 $f'_c$  = 4,000 psi (Drilled Shafts)  
 $f_y$  = 60,000 psi (Reinforcement)  
 $f_y$  = 50,000 psi (M270 Grade 50)  
 $f_y$  = 50,000 psi (M270 Grade HPSSOW, Unit 2 Hanger Plates, Tie Girders & Knuckles)

**LOADING HL-93**  
 Allow 50#/sq. ft. For future wearing surface.

**DESIGN SPECIFICATIONS**  
 2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with 2013 Interims



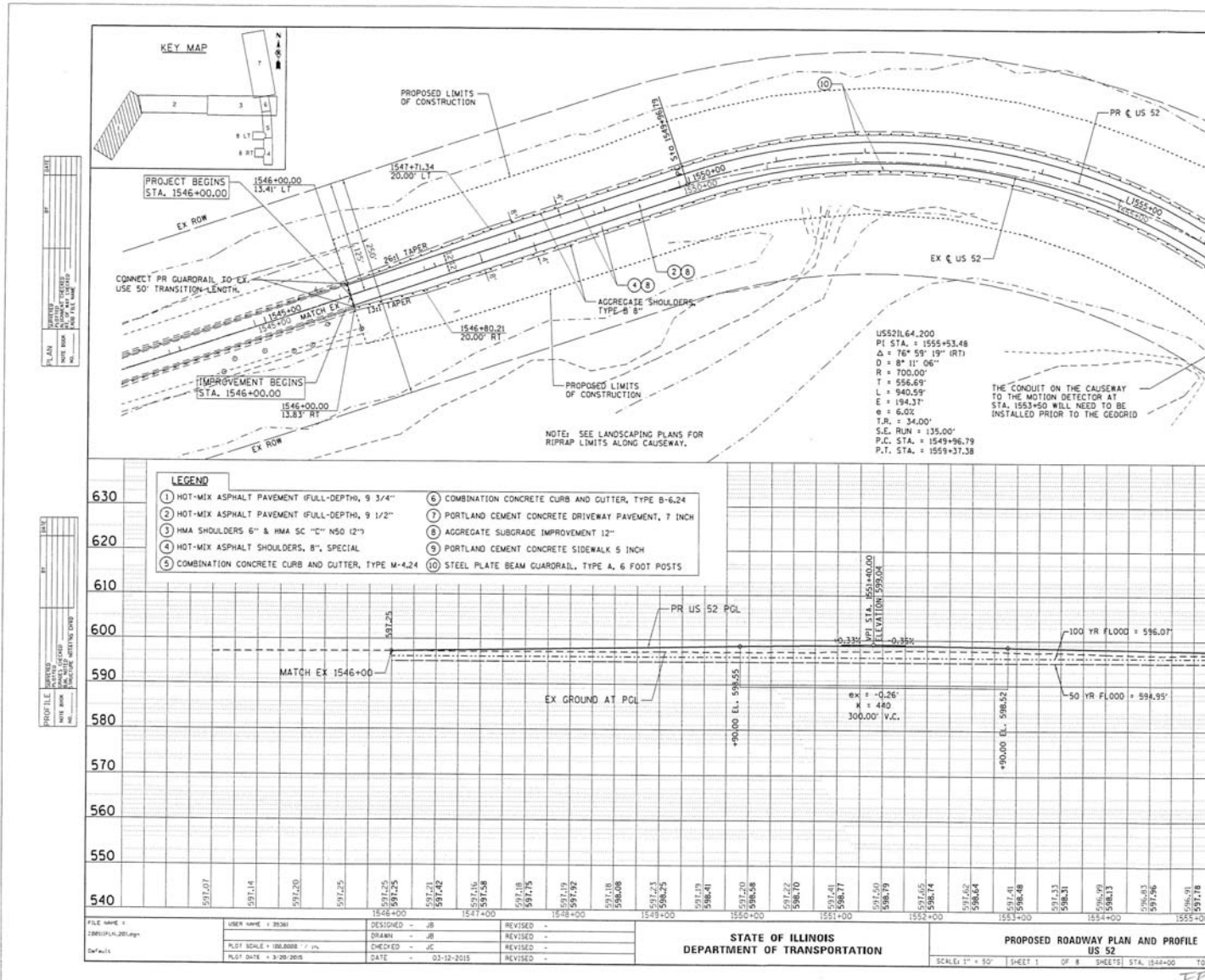
FILE NAME	USER NAME	DESIGNED	TSB	REVISED	-
PLAT SCALE	PLAT SCALE	CHECKED	STH	REVISED	-
PLAT DATE	PLAT DATE	DRAWN	NJR	REVISED	-
		CHECKED	GTH	REVISED	-

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

DATE: 3/12/15  
 EXPIRES: 11/30/16

SHEET NO. 5-1 OF 177 SHEETS

FAP Route 17 (US 52/IL 64)  
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## REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

### ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

#### I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, 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.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

#### II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

**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, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) 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 provisions of the Americans with 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 contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its 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, pre-apprenticeship, and/or on-the-job training."

**2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program 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 minorities and women.

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 minorities and women 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 employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women 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, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such 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 its 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 their avenues of appeal.

## **6. Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

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. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

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 employees who are minorities and women 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 good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 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 good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith 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 contracting agency 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 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 qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. 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 contracting agency.

**8. Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

**9. 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. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

**10. Assurance Required by 49 CFR 26.13(b):**

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor 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 DOT-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 contracting agency deems appropriate.

**11. 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 the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours 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; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency 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](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

**III. NONSEGREGATED FACILITIES**

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color,

religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

**IV. Davis-Bacon and Related Act Provisions**

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

**1. Minimum wages**

a. All laborers and mechanics 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 issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, 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 29 CFR 5.5(a)(4). 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. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) 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.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:



(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), 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 Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The 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.

(3) In the event the contractor, the laborers or mechanics to be employed in the 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 questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour 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.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. 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 shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs 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.

## 2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor 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, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, 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 contracting agency 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.

## 3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of 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. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) 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 shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each 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 Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) 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 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, 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 FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action 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.

#### 4. Apprentices and trainees

##### a. Apprentices (programs of the USDOL).

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 U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or 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 Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen 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 worker 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 on 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 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's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

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 journeymen 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 determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

##### b. Trainees (programs of the USDOL).

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 U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. 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.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor 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. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

##### d. 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.

**5. Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

**6. Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

**7. Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for

debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

**9. Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 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 U.S. Department of Labor, or the employees or their representatives.

#### **10. Certification of eligibility.**

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

#### **V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

**1. Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

**2. Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the 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 or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

**3. Withholding for unpaid wages and liquidated damages.** The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys 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 (2.) of this section.

**4. Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

#### **VI. SUBLETTING OR ASSIGNING THE CONTRACT**

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

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 contracting agency. 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 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased 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 or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

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 or propose 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 VI 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 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 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 contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

## **VII. SAFETY: ACCIDENT PREVENTION**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

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 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. 3704).

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.3704).

## **VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

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, Form FHWA-1022 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:

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 under this title or imprisoned not more than 5 years or both."

## **IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

## **X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

### **1. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier 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 first tier 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 first tier 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 contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier 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," "participant," "person," "principal," and "voluntarily excluded,"

as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first 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 entering into this transaction.

g. The prospective first tier 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 Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

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 is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective 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.

\* \* \* \* \*

## **2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-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;

(3) 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 (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective 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 Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

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," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

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 exceeding the \$25,000 threshold.

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 is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

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 dealings.

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 Participants:**

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 participating in covered transactions 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.

\* \* \* \* \*

**XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

This provision is 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 its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**MINIMUM WAGES FOR FEDERAL AND FEDERALLY  
ASSISTED CONSTRUCTION CONTRACTS**

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision shall be the minimum paid by contractors and subcontractors to laborers and mechanics.