

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

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

RETURN WITH BID

196

| |
|-----------------------|
| Proposal Submitted By |
| Name |
| Address |
| City |

Letting March 6, 2015

NOTICE TO PROSPECTIVE BIDDERS

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

BIDDERS NEED NOT RETURN THE ENTIRE PROPOSAL

**Notice to Bidders,
Specifications,
Proposal, Contract
and Contract Bond**



**Illinois Department
of Transportation**

Springfield, Illinois 62764

**Contract No. 60Y95
DUPAGE County
Section 2013-083-R&B
Route FAP 345
Project ACCM-0345(062)
District 1 Construction Funds**

PLEASE MARK THE APPROPRIATE BOX BELOW:

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

Prepared by

Checked by

F

Page intentionally left blank

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. 60Y95
DUPAGE County
Section 2013-083-R&B
Project ACCM-0345(062)
Route FAP 345
District 1 Construction Funds**

Interchange reconstruction on IL 390 at I-290 including new interchange ramps, flyover bridge structures, retaining walls, lighting and other related work located in Itasca.

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

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)

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER -

State Job # - C-91-068-15

60Y95

Project Number

Route

County Name - DUPAGE - -

FAP 345

Code - 43 - -

District - 1 - -

Section Number - 2013-083-R&B

| Item Number | Pay Item Description | Unit of Measure | Quantity | x | Unit Price | = | Total Price |
|-------------|-----------------------|-----------------|-----------|---|------------|---|-------------|
| JI602751 | DR STR T4 MOD | EACH | 2.000 | | | | |
| JI637011 | CONC BAR S F REINF 42 | FOOT | 397.000 | | | | |
| JI637020 | CONC BAR SF REINF 54 | FOOT | 153.000 | | | | |
| JI637021 | CONC BAR BS RF 1F 42 | FOOT | 10.000 | | | | |
| JI637022 | CONC BAR BS RF 1F 54 | FOOT | 153.000 | | | | |
| JS821010 | SIGN LUMIN LED 76W | EACH | 4.000 | | | | |
| JT250001 | SEEDG TALL FESCUE MIX | ACRE | 1.400 | | | | |
| JT250002 | SGCL4NAT GR LPMIX MOD | ACRE | 3.600 | | | | |
| JT250003 | SDG CL2EST RD MIX MOD | ACRE | 4.300 | | | | |
| JT599050 | NOISE AB WALL SM SPEC | SQ FT | 2,682.000 | | | | |
| JT599051 | PERF BSD ACRL NA WALL | L SUM | 1.000 | | | | |
| XX005712 | ARCHITECT FORM LINER | SQ YD | 525.000 | | | | |
| X0301423 | NOISE AB WALL GRD MT | SQ FT | 4,156.000 | | | | |
| X0323149 | TEMP M S EARTH RET WL | SQ FT | 555.000 | | | | |
| X0324013 | NOISE AB WALL STR MT | SQ FT | 8,933.000 | | | | |

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|-------------|-----------------------|-----------------|------------|---|------------|---|-------------|
| X0326382 | CONC BARRIER BASE SPL | FOOT | 387.000 | | | | |
| X0327235 | LOC UNDERGR UTILITIES | FOOT | 100.000 | | | | |
| X1400034 | RF SFTY TRNG/PRC MSRS | L SUM | 1.000 | | | | |
| X2020502 | BRACED EXCAVATION | CU YD | 1,871.000 | | | | |
| X5210120 | HLMR BRG GUID EXP 250 | EACH | 16.000 | | | | |
| X5210140 | HLMR BRG GUID EXP 350 | EACH | 6.000 | | | | |
| X5210210 | HLMR BRG GUID EXP 700 | EACH | 13.000 | | | | |
| X5210230 | HLMR BRG GUID EXP 800 | EACH | 7.000 | | | | |
| X5210315 | HLMR BRNG FIXED 250K | EACH | 1.000 | | | | |
| X5210365 | HLMR BRNG FIXED 750K | EACH | 6.000 | | | | |
| X5210790 | HLMR BRG N-G EXP 300 | EACH | 2.000 | | | | |
| X5860110 | GRANULAR BACKFILL STR | CU YD | 44,749.000 | | | | |
| X6700410 | ENGR FLD OFF A SPL | CAL MO | 29.000 | | | | |
| X7010216 | TRAF CONT & PROT SPL | L SUM | 1.000 | | | | |
| X7010410 | SPEED DISPLAY TRAILER | CAL MO | 54.000 | | | | |

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|-------------|-----------------------|-----------------|------------|---|------------|---|-------------|
| X7011015 | TR C-PROT EXPRESSWAYS | L SUM | 1.000 | | | | |
| X7013820 | TR CONT SURVEIL EXPWY | CAL DA | 821.000 | | | | |
| X7030030 | WET REF TEM TAPE T3 4 | FOOT | 7,752.000 | | | | |
| X7030035 | WET REF TEM TAPE T3 5 | FOOT | 4,456.000 | | | | |
| X7030045 | WET REF TEM TAPE T3 8 | FOOT | 6,351.000 | | | | |
| X7030050 | WET REF TEM TPE T3 12 | FOOT | 177.000 | | | | |
| X8040100 | ELECT CONN TO SIN STR | EACH | 1.000 | | | | |
| Z0013797 | STAB CONSTR ENTRANCE | SQ YD | 1,573.000 | | | | |
| Z0013798 | CONSTRUCTION LAYOUT | L SUM | 1.000 | | | | |
| Z0016702 | DETOUR SIGNING | L SUM | 1.000 | | | | |
| Z0018002 | DRAINAGE SCUPPR DS-11 | EACH | 2.000 | | | | |
| Z0030850 | TEMP INFO SIGNING | SQ FT | 373.000 | | | | |
| Z0033020 | LUM SFTY CABLE ASMBLY | EACH | 31.000 | | | | |
| Z0033028 | MAINTAIN LIGHTING SYS | CAL MO | 24.000 | | | | |
| Z0034210 | MECH ST EARTH RET WL | SQ FT | 66,567.000 | | | | |

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|-------------|-----------------------|-----------------|-------------|---|------------|---|-------------|
| Z0034806 | MODULAR EXP JT-SW 6 | FOOT | 69.000 | | | | |
| Z0034809 | MODULAR EXP JT-SW 9 | FOOT | 46.000 | | | | |
| Z0034812 | MODULAR EXP JT-SW 12 | FOOT | 59.000 | | | | |
| Z0062456 | TEMP PAVEMENT | SQ YD | 2,367.000 | | | | |
| Z0073002 | TEMP SOIL RETEN SYSTM | SQ FT | 8,349.000 | | | | |
| Z0076600 | TRAINEES | HOUR | 2,000.000 | | 0.800 | | 1,600.000 |
| Z0076604 | TRAINEES TPG | HOUR | 2,000.000 | | 15.000 | | 30,000.000 |
| 20200100 | EARTH EXCAVATION | CU YD | 51,350.000 | | | | |
| 20201200 | REM & DISP UNS MATL | CU YD | 18,980.000 | | | | |
| 20400800 | FURNISHED EXCAVATION | CU YD | 114,035.000 | | | | |
| 20800150 | TRENCH BACKFILL | CU YD | 867.000 | | | | |
| 21001000 | GEOTECH FAB F/GR STAB | SQ YD | 3,055.000 | | | | |
| 21101505 | TOPSOIL EXC & PLAC | CU YD | 8,150.000 | | | | |
| 25000400 | NITROGEN FERT NUTR | POUND | 171.000 | | | | |
| 25000600 | POTASSIUM FERT NUTR | POUND | 513.000 | | | | |

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|-------------|-----------------------|-----------------|------------|---|------------|---|-------------|
| 25100115 | MULCH METHOD 2 | ACRE | 2.000 | | | | |
| 25100630 | EROSION CONTR BLANKET | SQ YD | 45,012.000 | | | | |
| 28000200 | EARTH EXC - EROS CONT | CU YD | 1,218.000 | | | | |
| 28000250 | TEMP EROS CONTR SEED | POUND | 1,265.000 | | | | |
| 28000305 | TEMP DITCH CHECKS | FOOT | 599.000 | | | | |
| 28000400 | PERIMETER EROS BAR | FOOT | 2,663.000 | | | | |
| 28000510 | INLET FILTERS | EACH | 29.000 | | | | |
| 28001000 | AGGREGATE - EROS CONT | TON | 25.000 | | | | |
| 28001100 | TEMP EROS CONTR BLANK | SQ YD | 61,234.000 | | | | |
| 28100103 | STONE RIPRAP CL A2 | SQ YD | 142.000 | | | | |
| 28100105 | STONE RIPRAP CL A3 | SQ YD | 142.000 | | | | |
| 28200200 | FILTER FABRIC | SQ YD | 270.000 | | | | |
| 28500400 | ARTICUL BLOCK REV MAT | SQ YD | 128.000 | | | | |
| 30300001 | AGG SUBGRADE IMPROVE | CU YD | 17,320.000 | | | | |
| 30300112 | AGG SUBGRADE IMPR 12 | SQ YD | 13,779.000 | | | | |

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|-------------|-----------------------|-----------------|-----------|---|------------|---|-------------|
| 31101200 | SUB GRAN MAT B 4 | SQ YD | 3,076.000 | | | | |
| 31102000 | SUB GRAN MAT C | CU YD | 434.000 | | | | |
| 31200502 | STAB SUBBASE HMA 4.5 | SQ YD | 9,832.000 | | | | |
| 40300100 | BIT MATLS PR CT | GALLON | 7,081.000 | | | | |
| 42000501 | PCC PVT 10 JOINTED | SQ YD | 7,459.000 | | | | |
| 42001420 | BR APPR PVT CON (PCC) | SQ YD | 748.000 | | | | |
| 44000100 | PAVEMENT REM | SQ YD | 1,357.000 | | | | |
| 44004250 | PAVED SHLD REMOVAL | SQ YD | 438.000 | | | | |
| 44213200 | SAW CUTS | FOOT | 1,082.000 | | | | |
| 48101620 | AGGREGATE SHLDS B 10 | SQ YD | 2,529.000 | | | | |
| 48203048 | HMA SHOULDERS 12 3/4 | SQ YD | 1,443.000 | | | | |
| 48300500 | PCC SHOULDERS 10 | SQ YD | 2,833.000 | | | | |
| 50104400 | CONC HDWL REM | EACH | 1.000 | | | | |
| 50200100 | STRUCTURE EXCAVATION | CU YD | 6,348.000 | | | | |
| 50200450 | REM/DISP UNS MATL-STR | CU YD | 441.000 | | | | |

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|-------------|-----------------------|-----------------|---------------|---|------------|---|-------------|
| 50300225 | CONC STRUCT | CU YD | 3,008.800 | | | | |
| 50300255 | CONC SUP-STR | CU YD | 6,215.400 | | | | |
| 50300260 | BR DECK GROOVING | SQ YD | 7,306.000 | | | | |
| 50300300 | PROTECTIVE COAT | SQ YD | 15,892.000 | | | | |
| 50400735 | F&E PPC BULB T-BM 63 | FOOT | 731.000 | | | | |
| 50500105 | F & E STRUCT STEEL | L SUM | 1.000 | | | | |
| 50500405 | F & E STRUCT STEEL | POUND | 1,830.000 | | | | |
| 50500505 | STUD SHEAR CONNECTORS | EACH | 18,624.000 | | | | |
| 50800205 | REINF BARS, EPOXY CTD | POUND | 1,890,435.000 | | | | |
| 50800515 | BAR SPLICERS | EACH | 365.000 | | | | |
| 51200957 | FUR M S PILE 12X0.250 | FOOT | 3,375.000 | | | | |
| 51200959 | FUR M S PILE 14X0.312 | FOOT | 19,550.000 | | | | |
| 51202305 | DRIVING PILES | FOOT | 22,925.000 | | | | |
| 51203200 | TEST PILE MET SHELLS | EACH | 14.000 | | | | |
| 51204650 | PILE SHOES | EACH | 370.000 | | | | |

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|-------------|-----------------------|-----------------|-----------|---|------------|---|-------------|
| 51500100 | NAME PLATES | EACH | 10.000 | | | | |
| 52000110 | PREF JT STRIP SEAL | FOOT | 192.500 | | | | |
| 52100010 | ELAST BEARING ASSY T1 | EACH | 7.000 | | | | |
| 52100520 | ANCHOR BOLTS 1 | EACH | 92.000 | | | | |
| 52100530 | ANCHOR BOLTS 1 1/4 | EACH | 114.000 | | | | |
| 542A1069 | P CUL CL A 2 24 | FOOT | 100.000 | | | | |
| 54261315 | CONC ES 542001 15 1:3 | EACH | 1.000 | | | | |
| 54261324 | CONC ES 542001 24 1:3 | EACH | 2.000 | | | | |
| 54261415 | CONC ES 542001 15 1:4 | EACH | 2.000 | | | | |
| 550A0360 | STORM SEW CL A 2 15 | FOOT | 1,555.000 | | | | |
| 550A0380 | STORM SEW CL A 2 18 | FOOT | 93.000 | | | | |
| 550A0660 | STORM SEW CL A 3 15 | FOOT | 132.000 | | | | |
| 550A1010 | STORM SEW CL A 4 24 | FOOT | 256.000 | | | | |
| 55100500 | STORM SEWER REM 12 | FOOT | 5.000 | | | | |
| 55100700 | STORM SEWER REM 15 | FOOT | 19.000 | | | | |

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Code - 43 - -

District - 1 - -

Section Number - 2013-083-R&B

| Item Number | Pay Item Description | Unit of Measure | Quantity | x | Unit Price | = | Total Price |
|-------------|-----------------------|-----------------|-----------|---|------------|---|-------------|
| 58700300 | CONCRETE SEALER | SQ FT | 6,472.000 | | | | |
| 60100060 | CONC HDWL FOR P DRAIN | EACH | 1.000 | | | | |
| 60108100 | PIPE UNDERDRAIN 4 SP | FOOT | 226.000 | | | | |
| 60109510 | P UNDR FAB LINE TR 4 | FOOT | 4,078.000 | | | | |
| 60200905 | CB TA 4 DIA T9F&G | EACH | 2.000 | | | | |
| 60201005 | CB TA 4 DIA T10F&G | EACH | 1.000 | | | | |
| 60201310 | CB TA 4 DIA T20F&G | EACH | 18.000 | | | | |
| 60206600 | CB TB T7G | EACH | 2.000 | | | | |
| 60218400 | MAN TA 4 DIA T1F CL | EACH | 1.000 | | | | |
| 60500050 | REMOV CATCH BAS | EACH | 1.000 | | | | |
| 60602500 | CONC GUTTER TA | FOOT | 931.000 | | | | |
| 63000001 | SPBGR TY A 6FT POSTS | FOOT | 25.000 | | | | |
| 63000003 | SPBGR TY A 9FT POSTS | FOOT | 912.500 | | | | |
| 63100089 | TRAF BAR TERM T6B | EACH | 6.000 | | | | |
| 63100105 | TRAF BAR TERM T10 | EACH | 2.000 | | | | |

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER -

60Y95

State Job # - C-91-068-15

Project Number

Route

County Name - DUPAGE - -

FAP 345

Code - 43 - -

District - 1 - -

Section Number - 2013-083-R&B

| Item Number | Pay Item Description | Unit of Measure | Quantity | x | Unit Price | = | Total Price |
|-------------|-----------------------|-----------------|------------|---|------------|---|-------------|
| 63100167 | TR BAR TRM T1 SPL TAN | EACH | 4.000 | | | | |
| 63500105 | DELINEATORS | EACH | 28.000 | | | | |
| 63700275 | CONC BAR 2F 42HT | FOOT | 141.000 | | | | |
| 63700900 | CONC BARRIER BASE | FOOT | 141.000 | | | | |
| 64300770 | IMP ATTEN SU NAR TL3 | EACH | 1.000 | | | | |
| 64301090 | ATTENUATOR BASE | SQ YD | 22.000 | | | | |
| 67100100 | MOBILIZATION | L SUM | 1.000 | | | | |
| 70103815 | TR CONT SURVEILLANCE | CAL DA | 821.000 | | | | |
| 70106800 | CHANGEABLE MESSAGE SN | CAL MO | 62.000 | | | | |
| 70301000 | WORK ZONE PAVT MK REM | SQ FT | 21,876.000 | | | | |
| 70400100 | TEMP CONC BARRIER | FOOT | 4,100.000 | | | | |
| 70400200 | REL TEMP CONC BARRIER | FOOT | 775.000 | | | | |
| 70600260 | IMP ATTN TEMP FRN TL3 | EACH | 5.000 | | | | |
| 70600332 | IMP ATTN REL FRN TL3 | EACH | 1.000 | | | | |
| 72000100 | SIGN PANEL T1 | SQ FT | 42.000 | | | | |

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER -

60Y95

State Job # - C-91-068-15

Project Number

Route

County Name - DUPAGE - -

FAP 345

Code - 43 - -

District - 1 - -

Section Number - 2013-083-R&B

| Item Number | Pay Item Description | Unit of Measure | Quantity | x | Unit Price | = | Total Price |
|-------------|-----------------------|-----------------|------------|---|------------|---|-------------|
| 72000200 | SIGN PANEL T2 | SQ FT | 36.000 | | | | |
| 72000300 | SIGN PANEL T3 | SQ FT | 503.000 | | | | |
| 72700100 | STR STL SIN SUP BA | POUND | 710.000 | | | | |
| 73000100 | WOOD SIN SUPPORT | FOOT | 68.000 | | | | |
| 73300100 | OVHD SIN STR-SPAN T1A | FOOT | 110.000 | | | | |
| 73301810 | OSS WALKWAY TY A | FOOT | 41.000 | | | | |
| 73400100 | CONC FOUNDATION | CU YD | 1.400 | | | | |
| 73400200 | DRILL SHAFT CONC FDN | CU YD | 11.300 | | | | |
| 78000100 | THPL PVT MK LTR & SYM | SQ FT | 36.300 | | | | |
| 78000200 | THPL PVT MK LINE 4 | FOOT | 9,531.000 | | | | |
| 78000500 | THPL PVT MK LINE 8 | FOOT | 7,538.000 | | | | |
| 78000600 | THPL PVT MK LINE 12 | FOOT | 619.000 | | | | |
| 78004220 | PREF PL PM TB INL L5 | FOOT | 5,786.000 | | | | |
| 78005110 | EPOXY PVT MK LINE 4 | FOOT | 19,726.000 | | | | |
| 78005120 | EPOXY PVT MK LINE 5 | FOOT | 4,897.000 | | | | |

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER -

60Y95

State Job # - C-91-068-15

Project Number

Route

County Name - DUPAGE - -

FAP 345

Code - 43 - -

District - 1 - -

Section Number - 2013-083-R&B

| Item Number | Pay Item Description | Unit of Measure | Quantity | x | Unit Price | = | Total Price |
|-------------|-----------------------|-----------------|------------|---|------------|---|-------------|
| 78005140 | EPOXY PVT MK LINE 8 | FOOT | 5,434.000 | | | | |
| 78005150 | EPOXY PVT MK LINE 12 | FOOT | 786.000 | | | | |
| 78008200 | POLYUREA PM T1 LTR-SY | SQ FT | 72.600 | | | | |
| 78008210 | POLYUREA PM T1 LN 4 | FOOT | 9,679.000 | | | | |
| 78008220 | POLYUREA PM T1 LN 5 | FOOT | 3,964.000 | | | | |
| 78008240 | POLYUREA PM T1 LN 8 | FOOT | 8,886.000 | | | | |
| 78008250 | POLYUREA PM T1 LN 12 | FOOT | 684.000 | | | | |
| 78100100 | RAISED REFL PAVT MKR | EACH | 1,185.000 | | | | |
| 78100200 | TEMP RAIS REF PVT MKR | EACH | 935.000 | | | | |
| 78200410 | GUARDRAIL MKR TYPE A | EACH | 29.000 | | | | |
| 78200520 | BAR WALL MKR TYPE B | EACH | 101.000 | | | | |
| 78200530 | BAR WALL MKR TYPE C | EACH | 173.000 | | | | |
| 78201000 | TERMINAL MARKER - DA | EACH | 4.000 | | | | |
| 78300100 | PAVT MARKING REMOVAL | SQ FT | 32,986.000 | | | | |
| 78300200 | RAISED REF PVT MK REM | EACH | 1,185.000 | | | | |

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER -

60Y95

State Job # - C-91-068-15

Project Number

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County Name - DUPAGE - -

FAP 345

Code - 43 - -

District - 1 - -

Section Number - 2013-083-R&B

| Item Number | Pay Item Description | Unit of Measure | Quantity | x | Unit Price | = | Total Price |
|-------------|------------------------|-----------------|-----------|---|------------|---|-------------|
| 81028220 | UNDRGRD C GALVS 3 | FOOT | 420.000 | | | | |
| 81028390 | UNDRGRD C PVC 4 | FOOT | 60.000 | | | | |
| 81100805 | CON AT ST 3 PVC GALVS | FOOT | 75.000 | | | | |
| 81200230 | CON EMB STR 2 PVC | FOOT | 3,083.000 | | | | |
| 81200250 | CON EMB STR 3 PVC | FOOT | 120.000 | | | | |
| 81300900 | JUN BX SS AS 20X16X6 | EACH | 4.000 | | | | |
| 81400200 | HD HANDHOLE | EACH | 1.000 | | | | |
| 81603081 | UD 3#2#4GXLP USE 1.5 P | FOOT | 3,887.000 | | | | |
| 81702140 | EC C XLP USE 1C 4 | FOOT | 3,283.000 | | | | |
| 81702150 | EC C XLP USE 1C 2 | FOOT | 9,849.000 | | | | |
| 82102400 | LUM SV HOR MT 400W | EACH | 31.000 | | | | |
| 83050715 | LT P A 47.5MH 6DA | EACH | 19.000 | | | | |
| 83050825 | LT P A 47.5MH 15DA | EACH | 12.000 | | | | |
| 83600200 | LIGHT POLE FDN 24D | FOOT | 108.000 | | | | |
| 83800205 | BKWY DEV TR B 15BC | EACH | 9.000 | | | | |

CONTRACT NUMBER

60Y95

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.

RETURN WITH BID

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.

NA-FEDERAL

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)

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

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

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

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

- 1. Are you currently an officer or employee of either the Capitol Development Board or the Illinois 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 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 ___

(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. 60Y95
DUPAGE County
Section 2013-083-R&B
Project ACCM-0345(062)
Route FAP 345
District 1 Construction Funds**

PART II. WORKFORCE PROJECTION - continued

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

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

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

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

PART III. AFFIRMATIVE ACTION PLAN

- A. The undersigned bidder understands and agrees that in the event the foregoing minority and female employee utilization projection included under **PART II** is determined to be an underutilization of minority persons or women in any job category, and in the event that the undersigned bidder is awarded this contract, he/she will, prior to commencement of work, develop and submit a written Affirmative Action Plan including a specific timetable (geared to the completion stages of the contract) whereby deficiencies in minority and/or female employee utilization are corrected. Such Affirmative Action Plan will be subject to approval by the contracting agency and the **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. 60Y95
DUPAGE County
Section 2013-083-R&B
Project ACCM-0345(062)
Route FAP 345
District 1 Construction Funds**

PROPOSAL SIGNATURE SHEET

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

(IF AN INDIVIDUAL)

Firm Name _____
Signature of Owner _____
Business Address _____

(IF A CO-PARTNERSHIP)

Firm Name _____
By _____
Business Address _____
Name and Address of All Members of the Firm: _____

(IF A CORPORATION)

Corporate Name _____
By _____
Signature of Authorized Representative _____
Typed or printed name and title of Authorized Representative _____
Attest _____
Signature _____
(IF A JOINT VENTURE, USE THIS SECTION FOR THE MANAGING PARTY AND THE SECOND PARTY SHOULD SIGN BELOW)
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.

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

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.



Return with Bid

Division of Highways
Proposal Bid Bond

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 _____ (Percent) _____ (Dollar Amount) |
| Project _____ | |
| 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 2300 South Dirksen Parkway Springfield, Illinois 62764 | Local Let Projects Submit forms to the Local Agency |
|---|--|

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. 60Y95
DUPAGE County
Section 2013-083-R&B
Project ACCM-0345(062)
Route FAP 345
District 1 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.

| | | |
|---|---------------|--|
| _____ Name of Subcontracting Company | | |
| _____ Authorized Officer | _____ Date | |

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.

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.

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

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

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

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

1. Are you currently an officer or employee of either the Capitol Development Board or the Illinois 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 ___

(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. This Form B 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.

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. March 6, 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. 60Y95
DUPAGE County
Section 2013-083-R&B
Project ACCM-0345(062)
Route FAP 345
District 1 Construction Funds**

Interchange reconstruction on IL 390 at I-290 including new interchange ramps, flyover bridge structures, retaining walls, lighting and other related work located in Itasca.

- 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 reconstruction of FAP Route 345 (IL 390), Project ACCM-0345(062), Section 2013-083-R&B, DuPage County, Contract 60Y95, and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

FAP Route 345 (IL 390)
Project ACCM-0345(062)
Section 2013-083-R&B
DuPage County
Contract 60Y95

LOCATION OF PROJECT

The improvements to be constructed under this contract shall be performed along the Elgin O'Hare (IL 390) and I-290 Interchange in DuPage County, Illinois. The improvement includes the entrance and exit ramps along Interstate I 290 to Elgin O'Hare (IL 390) and partial reconstruction of outside shoulder of west bound Interstate I-290. The gross and net length of the improvement is approximately 3009.35 feet (0.57 mile) and 1831.09 feet (0.347 mile) along Ramp G1, 1452.90 feet (0.275 mile) and 1285.53 feet (0.243 mile) along Ramp G6 and 1751.89 feet (0.332 mile) and 1350.87 feet (0.256 mile) along Ramp K3 and 1075.37 feet (0.204 mile) and 1075.37 feet (0.204 mile) along Interstate I-290.

DESCRIPTION OF PROJECT

The work under this contract includes, but is not limited to:

1. Construction of the following Interchange Ramps:
 - a. Eastbound I-290 to Eastbound Elgin O'Hare (Ramp G1)
 - b. Partial construction of Westbound I-290 to Eastbound Elgin O'Hare (Ramp G6)
 - c. Eastbound I-290 to Park Boulevard (Ramp K3)

2. Construction of the following new structures:
 - a. Ramp G1 Structure over Ramp G7 (Structure Number 022-0556)
 - b. Ramp G1 Flyover Structure (Structure Number 022-0557)
 - c. Ramp G6 Structure over Ramp K3 (Structure Number 022-0549)
 - d. Retaining Wall at north abutment of Ramp G1 over Ramp G7 (Structure Number 022-0560)
 - e. Retaining Wall at south abutment of Ramp G1 over Ramp G7 (Structure Number 022-0558)
 - f. Retaining Wall at north abutment of Ramp G1 Flyover (Structure Number 022-0559)
 - g. Retaining Wall at south abutment of Ramp G1 Flyover (Structure Number 022-0553)
 - h. Retaining Wall along Ramp G1 just east of Ramp K3 (Structure Number 022-0552)
 - i. Retaining Wall at west abutment of Ramp G6 over Ramp K3 (Structure Number 022-0550)
 - j. Partial Retaining Wall construction along Ramp G6 between east abutment of Ramp G6 over Ramp K3 to eastern project limits (Structure Number 022-0551)
3. Traffic Control and protection
4. Temporary Pavement construction –Temporary Ramp K7 from Ramp G3 to Ramp K3 connection
5. Construction of Noise abatement wall along Ramp G6
6. Partial reconstruction of outside shoulder along Westbound I-290
7. Drainage Construction.
8. Installation of Lighting along proposed ramps.
9. Erosion control.
10. Roadway signing, pavement markings and other miscellaneous work required to complete proposed contract improvements as shown in the plans and described herein.

COORDINATION WITH OTHER CONTRACTORS

The Contractor is advised that certain operations will involve cooperation with Tollway personnel and Contractors performing work on or adjacent to this contract. The Contractor shall cooperate to the fullest extent with the Illinois Department of Transportation, Tollway and the Contractors working on adjacent projects in compliance with the Article 105.08 of Standard Specifications.

No additional compensation will be allowed to this Contractor for compliance with the above requirements, nor for any delays or inconvenience resulting from the activities of the other contractors.

The following Tollway projects in the vicinity of Contract 60Y95 may be under construction during the term of this Contract:

1. I-13-4606 – Elgin O'Hare (IL 390) at I-290 Interchange Westbound I-290 to Elgin O'Hare
2. I-13-4607 – Elgin O'Hare (IL 390) at I-290 Interchange – From Illinois Route 53 (Rohlwing Road) to Park Boulevard
3. I-13-4629 – Elgin O'Hare from Park Boulevard to Arlington Heights Road
4. I-13-4628 – Tolling and ITS installation from Lake Street (US-20) to I-290
5. I-13-4608 – Devon Avenue Bridge over I-290 Reconstruction

COORDINATION WITH THE VILLAGE OF ITASCA

For construction on or adjacent to any Village roadway, the Contractor will be required to contact the Village of Itasca Public Works Department, as listed below, to secure necessary permits and obtain written authorization for any lane closures on any Village roadway. The Contractor shall notify the Engineer and Village of Itasca 14 days prior to performing work.

The Contractor is responsible for meeting all requirements of the Village of Itasca Public Works Department in connection therewith:

Itasca Public Works Department
411 N Prospect Avenue
Itasca, IL 60143
Ross Hitchcock
Director of Public Works
(630)773-2455

COORDINATION WITH COUNTY OF DUPAGE

For construction on or adjacent to any county highway, the Contractor will be required to contact the County of DuPage, as listed below, to secure necessary permits and obtain written authorization for any lane closures on the aforementioned roadway. The Permit Application fee of \$100.00 shall be paid by the Contractor to DuPage County upon request by IDOT. The Contractor shall notify the Corridor Construction Manager who will notify DuPage County Division of Transportation Permitting Department (attention Robert J. Kolar) 14 days prior to the commencement of onsite work on DuPage County right of way. The Contractor is required to secure a permit from DuPage County for access to the DuPage County right of way for purposes of performing the contract work.

The Contractor will not be allowed access to DuPage County right of way prior to securing the permit. The Contractor shall include the date of anticipated DuPage County Highway Permit approval on the Preliminary Detailed Progress Schedule and on the Detailed Progress Schedule submitted as required by Article 108.02 of the IDOT Standard Specifications. The date of anticipated DuPage County Permit approval is April 1, 2015.

The Contractor is responsible for meeting all requirements of the County of DuPage in connection therewith:

General Contact:

DuPage County
421 N County Farm Road
Wheaton, IL 60187
Chris Snyder, PE
Division of Transportation
630-407-6900

Permits Contact:

Robert J. Kolar
Highway Permitting Department – Manager/
Deputy FOIA Officer
County of DuPage
421 N. County Farm Road
Wheaton, IL 60187-2553
(O) 630/407-6900 (M-F 8 am - 4:30 pm)

COORDINATION WITH PERMITTING AGENCIES

This project requires an individual permit from the United States Army Corp of Engineers (USACOE 404 Permit) and the Illinois Environmental Protection Agency (IEPA 401 Water Quality Certification). The USACOE Section 404/IEPA Section 401 permit was secured on March 17, 2014 for the entire Elgin O'Hare Western Access project corridor. Prior to disturbing or otherwise impacting the jurisdictional wetlands or waterways indicated on the contract plans, the contractor shall review terms and conditions of the 404 permit modification letter pertaining to Contract 60Y95. This includes, but is not limited to excavation, proposed culvert extension, proposed retaining wall and proposed bridge work. Existing resources are shown on the construction contract plans.

The Contractor is responsible for meeting all requirements of these agencies in connection therewith and in coordination with:

Bryan Wagner
Environmental Policy & Program Manager
Illinois Tollway
2700 Ogden Ave
Downers Grove, IL 60515
630-241-6800 Ext. 3872

PROGRESS SCHEDULE REQUIREMENTS

- (a) Baseline Schedule. The Contractor shall submit to the Engineer within 14 Calendar days of the issuance of the Notice to Proceed. A Baseline Schedule shall be in accordance with the provisions outlined herein. The Engineer will review the Baseline Schedule and provide a response to the Contractor within 14 Calendar days from the submittal date. If the Engineer is going to reject a Baseline Schedule, the Engineer will call a meeting with the Contractor in order to discuss the deficiencies in an attempt to more quickly reach resolution and obtain an acceptable Baseline Schedule. The Contractor will be required to make corrections to the Baseline Schedule to comply with the contract requirements and will adjust the Baseline Schedule to incorporate any missing information requested by the Engineer within 14 calendar days.

The Baseline Schedule shall utilize the latest version of Primavera as the scheduling software package. A waiver to the Primavera software can be requested prior to the start of the contract. Approval of the alternative software by the Engineer may be granted provided the substitution is comparable to the latest Primavera software and the alternate software and licenses are provided to the Engineer. The Baseline Schedule shall clearly and separately define the progression of Work from the Notice to Proceed date to the Contract Completion Date by using separate activities for all work components. The schedule shall be in sufficient detail to allow evaluation of progress of all work activities.

If the Baseline Schedule has not been accepted within 30 calendar days after the original submittal, and the Engineer has provided responses to the Baseline Schedule submittal within 14 calendar days of the submittal, the Contractor shall provide the Engineer with a corrective action plan. This plan shall include resumes for the proposed scheduler(s) for acceptance by the Engineer. The proposed scheduler(s) shall have experience developing and updating CPM schedules for projects of similar magnitude and scope. Payment will be withheld until a Baseline Schedule has been submitted and accepted by the Engineer unless the Engineer has not provided responses to the Baseline Schedule submittal within 14 calendar days of the submittal. The Baseline Schedule shall consist of the following items:

- (1) A Schedule Narrative that describes the critical path(s) of the project, outlines the Contractor's approach to complete the work, defines the project calendars and identifies critical resources. Updated Schedule Narratives will also be required for each monthly update and Revised Baseline Schedules.
- (2) Activity description shall be descriptive to identify its intent, including location of work.
- (3) Activity Durations for construction activities in excess of 30 calendar days will not be allowed.

- (4) Activity Calendar-Types: The Contractor must coordinate working hours with local townships and municipalities and plan its work in accordance with local ordinances and Article 107.35 of the Standard Specifications, unless written waivers can be obtained by the Contractor from the township/municipality. If winter slow-downs are allowed on a project, the non-work periods are to be shown using the project calendar and not through the inclusion of a winter slow-down activity.
- (5) Each scheduled activity shall show the intended rate of production for each item of work.
- (6) The Contractor shall provide additional schedule tasks as requested to assist the Engineer with communicating how its work will impact local communities and traffic.
- (7) The Contractor shall consider and include in the schedule planning and scheduling of all work, seasonal weather conditions, utility coordination, expected job learning curves, and work of other contractors. The National Oceanic and Atmospheric Administration's (NOAA) National Weather Service or Weather Underground will be used as a comparison to evaluate seasonal weather conditions. The inclusion of weather days in the schedule should be described in the Project Narrative.
- (8) Predecessor and Successor Activity Logic: Standard Finish-to-Start logic without lags should be the used when developing and updating Project Schedules. Other logic types such as Start-to-Start and Finish-to-Finish and any lags must be identified and justified in a general narrative and are subject to review and acceptance by the Engineer. Negative lags are generally discouraged.
- (9) The Contractor must submit a schedule in Portable Document Format (.pdf) and in a condensed native file format of the schedule software application (Example .xer) as part of every schedule submittal to the Engineer.
- (10) The Baseline Schedule shall show no progress and the Data Date shall be the same date as the actual Notice to Proceed date. The Notice to Proceed shall be the first activity on the schedule. As an option the Contractor may utilize the Notice of Intent to Award date as the first activity on the schedule in order to start project documentation but may not start any 'physical' work until the actual Notice to Proceed has been received.
- (11) The Contractor shall develop the Baseline Schedule to coincide with the Staging/Phasing plan contained within the contract documents. Should the Contractor request a deviation from the staging/phasing plan outlined in the contract, prior approval must be secured from the Engineer before it is contained in the Baseline Schedule. The Contractor should submit any such requests for deviation to the Engineer, who will coordinate through the Tollway Project Manager. The Contractor must continue to schedule the project to coincide with the latest approved phasing/staging plan while the request is under consideration by the Engineer. The Baseline Schedule will not be accepted with an alternative staging plan until the Engineer has accepted the revised plan. The Baseline Schedule submittal is not considered the appropriate method of requesting a revised staging plan.
- (12) Multiple schedule calendars should be used to accommodate specific imposed installation constraints.

- (13) Start constraints and finish milestones are to be included for all contract milestones. Early Start and Late Finish constraints, respectively, are to be applied according to Contract requirements. Mandatory or Expected constraints should not be used. Constraints not identified in the Contract are discouraged and may not be accepted.
- (14) All Contractual Milestones must be shown on the Baseline Schedule and should be clearly identifiable by Special Provision number in the Activity Description (i.e Contract Completion).
- (15) The Baseline Schedule cannot contain negative float.
- (16) The Baseline Schedule shall be submitted in the Construction Schedule Review (CSR) Process via the Web Based Project Management System for subsequent review and acceptance.
- (17) The Baseline Schedule shall include all work to be executed on the contract.

The Baseline Schedule shall include, in addition to all activities required to execute work, such tasks as permits, Right-of-Way (ROW) acquisition requirements, known utility coordination, owner defined access constraints as described in the bid documents, mobilization, demobilization, punchlist, submittals, submittal review by the Engineer and approval of material samples and shop drawings, procurement of significant materials and fabrication of special items, as well as installation and testing. The Engineer will have 14 calendar days from receipt of the submittal to review the schedule.

The activities shall be sufficiently detailed so that a reviewer can readily follow the sequence. The activities are to be described so that work is readily identifiable. All activities, with the exception of the Notice to Proceed, the Notice of Intent to Award and the project completion milestone shall have at least one predecessor and one successor, respectively. No open-ended schedules will be permitted without prior approval of the Engineer.

The Contractor's accepted Baseline Schedule shall be subject to updates in accordance with the "Monthly Schedule Update" as described in Article 108.02(c). The current accepted Baseline Schedule will be used to evaluate potential Contractor Time Extension Requests.

When the total contract dollar value is over \$10 million, the Contractor is required to check their Baseline Schedule and subsequent Monthly Progress Schedules using Schedule Analyzer Pro, or other approved equal analyzing software, prior to submitting to the Engineer. The report produced by the analyzing software shall accompany each schedule.

- (b) Revised Baseline Schedule (RBS). If the Contractor requests changes to the accepted Baseline Schedule or when actual critical path contains 14 or more Calendar days negative float and the Contractor has not submitted a Request for Extension of Time per 108.08, the Contractor shall submit a Revised Baseline Schedule which shall show actual project history and the Contractor's proposed plan to complete the balance of the work by the contract completion dates. The Revised Baseline Schedule shall include all project work completed to date. Completed work must not be removed from any schedule. The Revised Baseline Schedule shall be submitted in the Construction Schedule Review (CSR) Process via the Web Based Project Management System for subsequent review and acceptance within 14 Calendar Days of the Engineer's request and shall be subject to review and acceptance by the Engineer. The Engineer will have 14 Calendar days from receipt of the submittal to review the schedule. If the Engineer is going to reject a RBS, the Engineer will call a meeting with the Contractor in order to discuss the deficiencies in an attempt to more quickly reach resolution and obtain an acceptable RBS. Upon the Engineer's acceptance of the RBS, this schedule will be deemed the current Baseline Schedule. Payment will be withheld until a satisfactory schedule has been submitted and accepted by the Engineer.

The Revised Baseline Schedule submittal shall be consistent with all requirements of the Baseline Schedule submittal (See Article (a) above) and the narrative shall detail how the Contractor intends to recover lost time and bring the project back on schedule in order to comply with the contract completion dates. The Revised Baseline Schedule cannot contain negative float.

- (c) Monthly Schedule Update (MSU). After acceptance of the Contractor's Baseline Schedule, the Contractor shall monitor progress of The Work and update the schedule every 30 Calendar Days from the date of acceptance and every 30 Calendar days thereafter to reflect actual progress. Completed work must not be removed from the MSU. The Monthly Schedule Update will be used as the basis for reviewing the Contractor's monthly progress. The purpose of the Monthly Schedule Update is to report progress in accordance with the latest accepted schedule and is not to be used to revise the schedule logic, resources, durations or constraints. If the Engineer is going to reject a MSU, the Engineer will call a meeting with the Contractor and CM in order to discuss the deficiencies in an attempt to more quickly reach resolution and obtain an acceptable MSU.

A progress narrative shall be submitted along with the Contractor's Monthly Schedule Update, which describes progress made since the last Monthly Schedule Update submittal with special emphasis on critical and near critical activities, actual and potential delays to contract milestones and the utilization of any critical resources. The Contractor shall outline in the progress narrative its plan for executing The Work for the next 30 Calendar days. Monthly Schedule Updates shall be submitted in the Construction Schedule Review (CSR) Process through the Web Based Project Management System.

The Contractor shall make every Monthly Schedule Update submittal consistent with all Contract requirements and use all practicable means to make the progress of The Work conform to the logic included in the latest accepted schedule. If the Contractor falls behind the scheduled progress as a result of its actions, it shall take appropriate action to provide schedule recovery plans and other necessary measures to meet the contract specified completion dates in accordance with section "Revised Detailed Progress Schedule".

Where the Contractor believes the cause of a delay is beyond their control, the Contractor shall identify and promptly report to the Engineer progress delays during the prosecution of the work. If the Contractor has an outstanding Time Extension Request affecting any Interim, Substantial or Final Completion dates, the Contractor's Monthly Schedule Update may contain negative float provided there is opportunity for the contractor to recover lost time. Within 14 Calendar days following the Department determination of the Time Extension Request, the Contractor shall provide a Revised Detailed Schedule to the Engineer that reflects the Department disposition of the Contractor's Time Extension request.

Monthly Schedule Updates may be suspended or the frequency reduced, with prior approval of the Engineer and Tollway Project Manager, after the Contract has reached the "Substantial Completion Date" or during periods of suspended work. A Final or As Built Monthly Progress Schedule shall be submitted to the Engineer within 30 calendar days after the project has reached Final Contract Completion. The Final or As Built Schedule shall include all tasks (including approved extra work) accomplished during the life of the project. Final Payment will be withheld until a satisfactory schedule has been submitted and accepted by the Engineer.

- (d) Measurement and Payment. There will be no separate measurement or payment for fulfilling the requirements described herein, and all costs, direct or indirect, shall be included in the prices for other items. Failure to provide satisfactory schedule submittals within the time specified herein will result in Liquidated Damages, per Article (e) Liquidated Damages, being assessed and will result in payment being withheld or in the Engineer managing the contractor's latest accepted schedule until such time as the Contractor fulfills the requirements.
- (e) Liquidated Damages. The Contractor shall be subject to liquidated damages in the amount of **\$300** per day for each and every calendar day the Contractor is delinquent in the submission of the Baseline Schedule, the Revised Baseline Schedule or the Monthly Schedule Update as required by these specifications.

TOLLWAY PERMIT AND BOND

Effective: January 13, 1989

The Contractor will be required to obtain a permit from the Illinois State Toll Highway Authority (ISTHA) according to Article 107.04 of the Standard Specifications prior to initiating any lane closures on the Tollway or doing any work on the Tollway right of way. As part of the permit, the Contractor will be required to post a surety bond with the Tollway.

The Contractor will furnish a copy of the authorized permit to the Engineer.
Paul D. Kovacs, P.E.
Chief Engineer
2700 Ogden Avenue
Downers Grove, IL 60515

COORDINATION WITH WBBM RADIO

For construction involving cranes and other large construction equipment, long cables, wires or other long sections of metal, the contractor will be required to contact the WBBM AM Radio's Representative, as listed below, prior to construction, to receive consultation and/or training on health on safety considerations and actions which must be followed as a result of the project's proximity to the WBBM AM Radio antenna. The antenna is located northwest of the I-290/Thorndale Avenue interchange, and is licensed by the Federal Communications Commission to transmit with 50,000 watts of power on the AM radio band.

The contractor is responsible for meeting the requirements as described elsewhere in the Special Provisions.

WBBM Radio
c/o Jeremy Ruck
Jeremy Ruck & Associates, Inc.
221 S. 1st Avenue
Canton, IL 61520
309-647-1200

INDEMNIFICATION

In addition to indemnifying the Department under Article 107.26, the Contractor shall also indemnify and save harmless the Tollway, Cook County Department of Transportation and Highways, County of DuPage, the Village of Itasca, CH2MHILL Inc. and all subconsultants, Corridor Construction Manager and all subconsultants, Construction Manager and all subconsultants, the Program Management Office (PMO), AECOM Technical Services, Inc. and all their officers, agents and employees, in accordance with the indemnification requirements of Article 107.26 of said Standard Specifications.

STATUS OF UTILITIES TO BE ADJUSTED

Effective: January 30, 1987

Revised: January 24, 2013

Utilities companies involved in this project have provided the following estimated durations:

| Name of Utility | Type | Location | Estimated Duration of Time for the Completion of Relocation or Adjustments |
|------------------------|-------------|--------------------------------|---|
| Village of Itasca | Sanitary | Crossing Ramp G6 at Sta 614+68 | N/A – watch and protect |
| ComEd | Electric | Crossing Ramp G6 at Sta 616+90 | N/A – watch and protect |
| G4S | Fiber optic | Along east side of I-290 WB | N/A – watch and protect |
| Nicor | Gas | Crossing Ramp G6 at Sta 617+95 | N/A – watch and protect |
| ISTHA | Fiber optic | Crossing Ramp G6 at Sta 605+97 | N/A – watch and protect |

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

In accordance with 605 ILCS 5/9-113 of the Illinois Compiled Statutes, utility companies have 90 days to complete the relocation of their facilities after receipt of written notice from the Department. The 90-day written notice will be sent to the utility companies after the following occurs:

- 1) Proposed right of way is clear for contract award.
- 2) Final plans have been sent to and received by the utility company.
- 3) Utility permit is received by the Department and the Department is ready to issue said permit.
- 4) If a permit has not been submitted, a 15 day letter is sent to the utility company notifying them they have 15 days to provide their permit application. After allowing 15 days for submission of the permit the 90 day notice is sent to the utility company.
- 5) Any time within the 90 day relocation period the utility company may request a waiver for additional time to complete their relocation. The Department has 10 days to review and respond to a waiver request.

MAINTENANCE OF ROADWAYS

Effective: September 30, 1985

Revised: November 1, 1996

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

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

INTERIM AND SUBSTANTIAL COMPLETION DATES

Revise and add to Article 108.05 (a) of the Standard Specifications as follows:

“When an interim completion date and a substantial completion date are specified, the Contractor shall complete all contract work items to safely open the roadways to traffic by the dates as specified herein.

1. Interim Completion Date

The Contractor shall complete the associated work for the bridge B-21 - Ramp G1 Flyover Structure (SN 022-0557) I-290 median Pier No. 4 in Construction Stage 1, and vacate the staging area and construction zone (CZ01). All work to be completed, the staging area and construction zone (CZ01) vacated, and traffic control measures for the commencement of Construction Stage 1A shall be installed in their entirety and ready to open to traffic by 11:59 p.m. on **June 30, 2015**.

2. Interim Completion Date

The Contractor shall complete the associated work for the bridge B-34 - Ramp G1 Structure over Ramp G7 (SN 022-0556) north abutment in Construction Stage 1. All work to be completed and traffic control measures for the commencement of Construction Stage 1A shall be installed in their entirety and ready to open to traffic by 11:59 p.m. on **June 30, 2015**.

3. Interim Completion Date

The Contractor shall complete the associated work for the bridge B-21 - Ramp G1 Flyover Structure (SN 022-0557) north abutment and Pier 1 in Construction Stage 1A. All work to be completed and traffic control measures for the commencement of Construction Stage 1B shall be installed in their entirety and ready to open to traffic by 11:59 p.m. on **August 14, 2015**.

4. Interim Completion Date

The Contractor shall complete the associated work for the substructure of bridge B-35 - Ramp G6 Structure over Ramp K3 (SN 022-0549), including the west and east abutments for SN 022-0549 and the bridge B-21 - Ramp G1 Flyover Structure (SN 022-0557) Pier 3 in Construction Stage 1C. All work to be completed and traffic control measures for the commencement of Construction Stage 1D shall be installed in their entirety and ready to open to traffic by 11:59 p.m. on **November 22, 2015**.

5. Interim Completion Date

The Contractor shall complete the associated work for the bridge B-21 - Ramp G1 Flyover Structure (SN 022-0557) girder erection between Pier 3 and the south abutment in Construction Stage 2, and vacate the staging area and construction zone (CZ12) by 11:59 p.m. on **April 30, 2016**.

1. Interim Completion Date

The Contractor shall complete all associated work for bridge B-21 - Ramp G1 Flyover Structure (SN 022-0557) and bridge B-34 - Ramp G1 Structure over Ramp G7 (SN 022-0556) in Construction Stage 2. All work to be completed and traffic control measures for the commencement of Construction Stage 2A shall be installed in their entirety and ready to open to traffic by 11:59 p.m. on **September 30, 2016**.

2. Substantial Completion Date

The Contractor shall have completed all permanent roadway and ramp work, shoulder work, bridge work, retaining walls, noise abatement walls, pavement markings, signing, lighting, guardrail and roadway barriers, and establishment of traffic lanes to the proposed lane configuration as shown in the plans under this Agreement for the performance of Contract 60Y95 by 11:59 p.m. on **May 31, 2017**.

The Special Provision for "Failure to Complete the Work on Time" shall apply to both the interim completion dates and substantial completion date.

COMPLETION DATE

This project is a Completion Date contract as specified in Article 108.05 (a) of the Standard Specifications. All work shall be completed by 11:59 p.m. on **June 30, 2017**.

RESTRICTION ON WORKING DAYS AFTER A COMPLETION DATE

Effective: January 21, 2003

Revised: January 1, 2007

All temporary lane closures during the period governed by working days after a completion date will not be permitted during the hours of 6:00 a.m. to 9:00 a.m. and 3:00 p.m. to 6:00 p.m. Monday through Friday.

All lane closure signs shall not be erected any earlier than one-half (1/2) hour before the starting hours listed above. Also, these signs should be taken down within one-half (1/2) hour after the closure is removed.

Failure to Open Traffic Lanes to Traffic: Should the Contractor fail to completely open and keep open all the traffic lanes to traffic in accordance with the limitations specified above, the Contractor shall be liable and shall pay to the Department the amount of \$250 per lane blocked, not as a penalty but as liquidated and ascertained damages, for each and every 15 minute interval or a portion thereof that a lane is blocked outside the allowable time limitations. The Department may deduct such damages from any monies due the Contractor. These damages shall apply during the period governed by working days after a completion date and any extensions of that contract time.

FAILURE TO COMPLETE THE WORK ON TIME

Should the Contractor fail to complete the work on or before the completion dates as specified in the Special Provisions for "Interim and Substantial Completion Dates" and "Completion Date", or within such extended time as may have been allowed by the Department, the Contractor shall be liable to the Department in the amount of \$10,000 for each completion date specified, not as a penalty but as liquidated damages, for each calendar day or a portion thereof of overrun in the contract time or such extended time as may have been allowed.

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

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

FAILURE TO OPEN TRAFFIC LANES TO TRAFFIC

Effective: March 22, 1996

Revised: February 9, 2005

Should the Contractor fail to completely open and keep open all the traffic lanes to traffic in accordance with the limitations specified under the Special Provisions for "Keeping the Expressway Open to Traffic", the Contractor shall be liable to the Department for the amount of:

One lane or ramp blocked = \$3,000

Two lanes blocked = \$5,000

Not as a penalty but as liquidated and ascertained damages for each and every 15 minute interval or a portion thereof that a lane is blocked outside the allowable time limitations. Such damages may be deducted by the Department from any monies due the Contractor. These damages shall apply during the contract time and during any extensions of the contract time.

PUBLIC CONVENIENCE AND SAFETY (DIST 1)

Effective: May 1, 2012

Revised: July 15, 2012

Add the following to the end of the fourth paragraph of Article 107.09:

"If the holiday is on a Saturday or Sunday, and is legally observed on a Friday or Monday, the length of Holiday Period for Monday or Friday shall apply."

Add the following sentence after the Holiday Period table in the fourth paragraph of Article 107.09:

"The Length of Holiday Period for Thanksgiving shall be from 5:00 AM the Wednesday prior to 11:59 PM the Sunday After"

Delete the fifth paragraph of Article 107.09 of the Standard Specifications:

"On weekends, excluding holidays, roadways with Average Daily Traffic of 25,000 or greater, all lanes shall be open to traffic from 3:00 P.M. Friday to midnight Sunday except where structure construction or major rehabilitation makes it impractical."

KEEPING ARTERIAL ROADWAYS OPEN TO TRAFFIC

Effective: January 22, 2003

Revised: January 1, 2007

The Contractor shall provide the necessary traffic control devices to warn the public and to delineate the work zone as required in these Special Provisions, the Standard Specifications, and the State Standards.

Daily arterial lane closures shall be in accordance with the Standard Specifications, Highway Standards and the direction of the Engineer. The Contractor shall request and gain approval from the Illinois Department of Transportation's Arterial Traffic Control Supervisor at (847-705-4470) seventy-two (72) hours in advance of all long term (24 hrs. or longer) lane closures.

Arterial lane closures will only be permitted during the off-peak traffic volume hours. **Peak traffic volume hours are defined as weekdays (Monday through Friday) from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM.**

Full closure of any arterial lanes will only be permitted for a maximum period of 15 minutes during the **off-peak** traffic volume hours. During full roadway closures, the Contractor will be required to reduce the roadway to only one open traffic lane in the affected direction of travel using the appropriate State Standard. Police forces shall be notified and requested to close the remaining lane to facilitate the necessary work activities. The Contractor shall notify the District One Arterial Traffic Control Supervisor at (847) 705-4470 seventy-two (72) hours in advance of the proposed road closure.

Private vehicles shall not be parked in the work zone. Contractor's equipment and/or vehicles shall not be parked on the shoulders or in the median during non-working hours. The parking of equipment and/or vehicles on State right-of-way will only be permitted at locations approved by the Engineer.

TRAFFIC CONTROL PLAN

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

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

The Contractor shall contact the District One Bureau of Traffic at least 72 hours in advance of beginning work.

STANDARDS:

| | |
|--------|---|
| 635001 | Delineators |
| 635011 | Reflector Marker and Mounting Details |
| 643001 | Sand Module Impact Attenuators |
| 701101 | Off-Road Operations, Multilane, 15' (4.5 m) to 24" (600 mm) from Pavement Edge |
| 701106 | Off-Road Operations, Multilane, more than 15' (4.5 m) away |
| 701400 | Approach to Lane Closure, Freeway/Expressway |
| 701401 | Lane Closure, Freeway/Expressway |
| 701411 | Lane Closure, Multilane, at Entrance or Exit Ramp, for Speeds \geq 45 MPH |
| 701422 | Lane Closure, Multilane, for Speeds \geq 45 MPH to 55 MPH |
| 701423 | Lane Closure, Multilane, with Barrier, for Speeds \geq 45 MPH to 55 MPH |
| 701426 | Lane Closure, Multilane, Intermittent or Moving Operations for Speeds \geq 45 MPH |
| 701428 | Traffic Control Setup and Removal Freeway/Expressway |
| 701446 | Two Lane Closure Freeway/Expressway |
| 701601 | Urban Lane Closure, Multilane, 1W or 2W with Nontraversable Median |
| 701901 | Traffic Control Devices |
| 704001 | Temporary Concrete Barrier |

DETAILS:

| | |
|-------|--|
| TC-08 | Entrance and Exit Ramp Closure Details |
| TC-09 | Traffic Control Details for Freeway Single & Multi-lane Weave |
| TC-10 | Traffic Control and Protection for Side Roads, Intersections, and Driveways |
| TC-11 | Typical Applications Raised Reflective Pavement Markers (Snow-Plow Resistant) |
| TC-12 | Multi-lane Freeway Pavement Marking Details |
| TC-13 | District One Typical Pavement Markings |
| TC-16 | Pavement Marking Letters and Symbols for Traffic Staging |
| TC-17 | Traffic Control Details for Freeway Shoulder Closures and Partial Ramp Closures |
| TC-18 | Freeway/Expressway Signing for Flagging Operations at Work Zone Openings on Freeways/Expressways |
| TC-21 | Detour Signing for Closing State Highways |
| TC-22 | Arterial Road Information Sign |
| TC-27 | Mile Post Markers – Gore Signs – Major Guide Sign Layout – Arrows |

SPECIAL PROVISIONS:

Maintenance of Roadways [D1]
Interim and Substantial Completion Dates
Completion Date
Restriction on Working Days after a Completion Date [D1]
Failure to Complete the Work on Time
Failure to Open Traffic Lanes to Traffic [D1]
Public Convenience and Safety [D1]
Keeping Arterial Roadways Open to Traffic [D1]
Traffic Control Plan [D1]
Traffic Control and Protection (Arterials) [D1]
Traffic Control and Protection (Expressways) [D1]
Traffic Control Surveillance (Expressways) [D1]
Keeping the Expressway Open to Traffic
Winter Period Work
Nighttime Work Zone Lighting [D1]
Traffic Control for Work Zone Areas [D1]
Sign Shop Drawing Submittal [D1]
Temporary Concrete Barrier
Type III Temporary Tape for Wet Conditions [D1]
Stabilized Construction Entrance
Detour Signing
Temporary Information Signing [D1]
Temporary Pavement [D1]

RECURRING SPECIAL PROVISIONS:

Work Zone Public Information Signs [Check Sheet #24]
Pavement Marking Removal [Check Sheet #33]

BDE SPECIAL PROVISIONS:

Speed Display Trailer [80340]

DEVICES:

Traffic Control Devices shall be per Article 701.15 of the Standard Specifications for Road and Bridge Construction, 2012 and as approved by the Engineer.

All traffic control devices used for the maintenance of traffic, as detailed on the plans, shall be reflectorized prior to installation and cleaned as specified by the Engineer.

SIGNS:

All signs used for the maintenance of traffic, as detailed on the plans, shall be reflectorized prior to installation and cleaned as specified by the Engineer.

All existing roadway signs that restrict access to existing road and driveways based on vehicular classification shall be removed and reinstalled at a location approved by the Engineer per Article 107.25 of the Standard Specifications.

All conflicting existing roadway signs shall be covered during the maintenance of traffic staging. 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.

All signs for traffic control staging shall be considered incidental to the TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS) pay item except for TEMPORARY INFORMATION SIGNING as noted on the plans.

CONSTRUCTION SEQUENCES AND TRAFFIC STAGING:

See the Suggested Stage of Construction and Traffic Control Plans for suggested construction sequencing and traffic staging.

STAGING AREA AND CONSTRUCTION ZONE RESTRICTIONS:

The Contractor is advised that certain work restrictions shall apply to designated staging areas/construction work zones as shown on the "Suggested Stage of Construction and Traffic Control" schematic plans within specific dates as noted below. The Contractor is restricted to working within these limits such that he/she cannot occupy or access areas outside these designated limits for purposes of work, material or equipment storage, or stockpiling.

The following staging areas/construction zones are delineated in the plans, with exact limits to be determined by the Engineer:

1. Staging Area/Construction Zone CZ01.

The Contractor is restricted to working within these limits from April 1, 2015 to June 30, 2015.

The Contractor is advised that construction operations for the bridge B-21 - Ramp G1 Flyover Structure (SN 022-0557) I-290 median Pier No. 4 and the installation of the required traffic control devices for access to this Staging Area/Construction Zone cannot commence until the traffic lane shift to the outside shoulder along eastbound and westbound I-290 and associated traffic control devices have been installed by others.

2. Staging Area/Construction Zone CZ02.

The Contractor is restricted to working within these limits from May 1, 2015 to June 30, 2015.

3. Staging Area/Construction Zone CZ03.

The Contractor is restricted to working within these limits from May 1, 2015 to August 14, 2015.

4. Staging Area/Construction Zone CZ04.

The Contractor is restricted to working within these limits from May 1, 2015 to March 31, 2016.

5. Staging Area/Construction Zone CZ05.

The Contractor is restricted to working within these limits from July 1, 2015 to September 30, 2016.

6. Staging Area/Construction Zone CZ06.

The Contractor is restricted to working within these limits from July 1, 2015 to March 31, 2016.

7. Staging Area/Construction Zone CZ07.

The Contractor is restricted to working within these limits from August 15, 2015 to September 30, 2016.

8. Staging Area/Construction Zone CZ08.

The Contractor is restricted to working within these limits from August 15, 2015 to September 30, 2016.

9. Staging Area/Construction Zone CZ09.

The Contractor is restricted to working within these limits from August 15, 2015 to September 14, 2015.

10. Staging Area/Construction Zone CZ10.

The Contractor is restricted to working within these limits from September 15, 2015 to March 31, 2016.

11. Staging Area/Construction Zone CZ11.

The Contractor is restricted to working within these limits from December 1, 2015 to September 30, 2016.

The Contractor is advised that construction operations for the bridge B-21 - Ramp G1 Flyover Structure (SN 022-0557) Pier 2 cannot commence until the portions of existing Thorndale Avenue and existing Thorndale Avenue bridge over I-290 that are in conflict with this work have been demolished by others. No damages or additional compensation will be allowed to the Contractor for any delays, costs or inconveniences associated with this work.

12. Staging Area/Construction Zone CZ12.

The Contractor is restricted to working within these limits from April 1, 2016 to April 30, 2016.

13. Staging Area/Construction Zone CZ13.

The Contractor is restricted to working within these limits from April 1, 2016 to September 30, 2016.

HOLIDAY PERIODS:

Holiday periods shall be as follows:

A. Easter Weekend

- A1 3:00 P.M., Friday, April 3, 2015 through 12:00 Midnight, Sunday, April 5, 2015
- A2 3:00 P.M., Friday, March 25, 2016 through 12:00 Midnight, Sunday, March 27, 2016
- A3 3:00 P.M., Friday, April 14, 2017 through 12:00 Midnight, Sunday, April 16, 2017

B. Memorial Day Weekend

- B1 3:00 P.M., Friday, May 22, 2015 through 12:00 Midnight, Monday, May 25, 2015
- B2 3:00 P.M., Friday, May 27, 2016 through 12:00 Midnight, Monday, May 30, 2016
- B3 3:00 P.M., Friday, May 26, 2017 through 12:00 Midnight, Monday, May 29, 2017

C. Independence Day

- C1 3:00 P.M., Thursday, July 2, 2015 through 12:00 Midnight, Sunday, July 5, 2015
- C2 3:00 P.M., Friday, July 1, 2016 through 12:00 Midnight, Monday, July 4, 2016
- C3 3:00 P.M., Monday, July 3, 2017 through 12:00 Midnight, Tuesday, July 4, 2017

D. Labor Day Weekend

- D1 3:00 P.M., Friday, September 4, 2015 through 12:00 Midnight, Monday, September 7, 2015
- D2 3:00 P.M., Friday, September 2, 2016 through 12:00 Midnight, Monday, September 5, 2016

E. Thanksgiving Weekend

- E1 5:00 A.M., Wednesday, November 25, 2015 through 11:59 P.M., Sunday, November 29, 2015
- E2 5:00 A.M., Wednesday, November 23, 2016 through 11:59 P.M., Sunday, November 27, 2016

F. Christmas Day

- F1 3:00 P.M., Thursday, December 24, 2015 through 12:00 Midnight, Friday, December 25, 2015
- F2 3:00 P.M., Saturday, December 24, 2016 through 12:00 Midnight, Monday, December 26, 2016

G. New Year's Day

- G1 3:00 P.M., Thursday, December 31, 2015 through 12:00 Midnight, Friday, January 1, 2016
- G2 3:00 P.M., Saturday, December 31, 2016 through 12:00 Midnight, Monday, January 2, 2017

TRAFFIC CONTROL AND PROTECTION (ARTERIALS)

Effective: February 1, 1996

Revised: March 1, 2011

Specific traffic control plan details and Special Provisions have been prepared for this contract. This work shall include all labor, materials, transportation, handling and incidental work necessary to furnish, install, maintain and remove all traffic control devices required as indicated in the plans and as approved by the Engineer.

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

Method of Measurement: All traffic control (except "Traffic Control and Protection (Expressways)" and temporary pavement markings) indicated on the traffic control plan details and specified in the Special Provisions will be measured for payment on a lump sum basis.

Basis of Payment: All traffic control and protection will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (SPECIAL).

Temporary pavement markings will be paid for separately unless shown on a Standard.

TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)

Effective: March 8, 1996

Revised: February 13, 2014

Description. This work shall include furnishing, installing, maintaining, replacing, relocating, and removing all traffic control devices used for the purpose of regulating, warning, or directing traffic. Traffic control and protection shall be provided as called for in the plans, applicable Highway Standards, District One Expressway details, Standards and Supplemental Specifications, these Special Provisions, or as directed by the Engineer.

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

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

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

Additional requirements for traffic control devices shall be as follows.

- (a) Traffic Control Setup and Removal. The setting and removal of barricades for the taper portion of a lane closure shall be done under the protection of a vehicle with a truck/trailer mounted attenuator and arrow board per State Standard 701428 and the Traffic Control Setup and Removal Freeway/Expressway BDE Special Provision. Failure to meet this requirement will be subject to a Traffic Control Deficiency. The deficiency will be calculated as outlined in Article 105.03 of the Standard Specifications. Truck/trailer mounted attenuators shall comply with Article 1106.02(g) or shall meet the requirements of NCHRP 350 Test Level 3 with vehicles used in accordance with manufacturer's recommendations and requirements.

(b) Sign Requirements

- (1) Sign Maintenance. Prior to the beginning of construction operations, the Contractor will be provided a sign log of all existing signs within the limits of the construction zone. The Contractor is responsible for verifying the accuracy of the sign log. Throughout the duration of this project, all existing traffic signs shall be maintained by the Contractor. All provisions of Article 107.25 of the Standard Specifications shall apply except the third paragraph shall be revised to read: "The Contractor shall maintain, furnish, and replace at his own expense, any traffic sign or post which has been damaged or lost by the Contractor or a third party. The Contractor will not be held liable for third party damage to large freeway guide signs".
- (2) Work Zone Speed Limit Signs. Work zone speed limit signs shall be installed as required in Article 701.14(b) and as shown in the plans and Highway Standards. Based upon the existing posted speed limit, work zone speed limits shall be established and signed as follows.
 - a. Existing Speed Limit of 55mph or higher. The initial work zone speed limit assembly, located approximately 3200' before the closure, and shall be 55mph as shown in 701400. Additional work zone 45mph assemblies shall be used as required according to Article 701.14(b) and as shown in the Highway Standards and plans. WORK ZONE SPEED LIMIT 55 PHOTO ENFORCED assemblies may be omitted when this assembly would normally be placed within 1500 feet of the END WORK ZONE SPEED LIMIT sign.
 - b. Existing Speed Limit of 45mph. The advance 55mph work zone speed limit assembly shown in 701400 shall be replaced with a 45mph assembly. Additional work zone 45mph assemblies shall be used as required according to Article 701.14(b) and as shown in the Highway Standards and plans. WORK ZONE SPEED LIMIT 55 PHOTO ENFORCED assemblies shall be eliminated in all cases. END WORK ZONE SPEED LIMIT signs are required.
- (3) Exit Signs. The exit gore signs as shown in Standard 701411 shall be a minimum size of 48 inch by 48 inch with 12 inch capital letters and a 20 inch arrow. EXIT OPEN AHEAD signs shown in Standard 701411 shall be a minimum size of 48 inch by 48 inch with 8 inch capital letters.
- (4) Uneven Lanes Signs. The Contractor shall furnish and erect "UNEVEN LANES" signs (W8-11) on both sides of the expressway, at any time when the elevation difference between adjacent lanes open to traffic equals or exceeds one inch. Signs shall be placed 500' in advance of the drop-off, within 500' of every entrance, and a minimum of every mile.

- (c) Drums/Barricades. Check barricades shall be placed in work areas perpendicular to traffic every 1000', one per lane and per shoulder, to prevent motorists from using work areas as a traveled way. Check barricades shall also be placed in advance of each open patch, or excavation, or any other hazard in the work area, the first at the edge of the open traffic lane and the second centered in the closed lane. Check barricades, either Type I or II, or drums shall be equipped with a flashing light.

To provide sufficient lane widths (10' minimum) for traffic and also working room, the Contractor shall furnish and install vertical barricades with steady burn lights, in lieu of

Type II or drums, along the cold milling and asphalt paving operations. The vertical barricades shall be placed at the same spacing as the drums.

- (d) Vertical Barricades. Vertical barricades shall not be used in lane closure tapers, lane shifts, exit ramp gores, or staged construction projects lasting more than 12 hours. Also, vertical barricades shall not be used as patch barricades or check barricades. Special attention shall be given, and ballast provided per manufacture's specification, to maintain the vertical barricades in an upright position and in proper alignment.
- (e) Temporary Concrete Barrier Wall. Prismatic barrier wall reflectors shall be installed on both the face of the wall next to traffic, and the top of sections of the temporary concrete barrier wall as shown in Standard 704001. The color of these reflectors shall match the color of the edgelines (yellow on the left and crystal or white on the right). If the base of the temporary concrete barrier wall is 12 inches or less from the travel lane, then the lower slope of the wall shall also have a 6 inch wide temporary pavement marking edgeline (yellow on the left and white on the right).
- (f) Full Expressway Closures. Full Expressway Closures will only be permitted for a maximum of 15 minutes during the allowable hours listed in the Keeping the Expressway Open to Traffic Special Provision. During Full Expressway Closures, the Contractor will be required to close off all lanes except one, using Freeway Standard Closures. The Contractor will be required to provide one changeable message sign to be placed at the direction of the Engineer. The sign shall display a message as directed by the Engineer. A Maintenance of Traffic Plan shall be submitted to the District One Traffic Operations Department Two Weeks in advance of the planned work. The Maintenance of Traffic Plan shall include, but not be limited to: lane and ramp closures, existing geometrics, and equipment and material location. The District One Traffic Operations Department shall be contacted (847-705-4151) at least 3 working days in advance of the proposed road closure and will coordinate the closure operation with police forces.

Method of Measurement. This item of work will be measured on a lump sum basis for furnishing, installing, maintaining, replacing, relocating, and removing traffic control devices required in the plans and these Special Provisions. Traffic control and protection required under Standards 701101, 701400, 701401, 701402, 701406, 701411, 701416, 701426, 701428, 701446, 701901 and District details TC-8, TC-9, TC-17, TC-18 and TC-25 will be included with this item.

Basis of Payment.

- (a) This work will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS). This price shall be payment in full for all labor, materials, transportation, handling, and incidental work necessary to furnish, install, maintain, replace, relocate, and remove all Expressway traffic control devices required in the plans and specifications.

In the event the sum total value of all the work items for which traffic control and protection is required is increased or decreased by more than ten percent (10%), the contract bid

price for TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS) will be adjusted as follows:

$$\text{Adjusted contract price} = .25P + .75P [1 \pm (X - 0.1)]$$

Where: "P" is the bid unit price for Traffic Control and Protection

| | |
|--------------|---|
| Where: "X" = | $\frac{\text{Difference between original and final sum total value of all work items for which traffic control and protection is required}}{\text{Original sum total value of all work items for which traffic control and protection is required.}}$ |
|--------------|---|

The value of the work items used in calculating the increase and decrease will include only items that have been added to or deducted from the contract under Article 104.02 of the Standard Specifications and only items which require use of Traffic Control and Protection.

- (b) The Engineer may require additional traffic control be installed in accordance with standards and/or designs other than those included in the plans. In such cases, the standards and/or designs will be made available to the Contractor at least one week in advance of the change in traffic control. Payment for any additional traffic control required will be in accordance with Article 109.04 of the Standard Specifications.
- (c) Revisions in the phasing of construction or maintenance operations, requested by the Contractor, may require traffic control to be installed in accordance with standards and/or designs other than those included in the plans. Revisions or modifications to the traffic control shown in the contract shall be submitted by the Contractor for approval by the Engineer. No additional payment will be made for a Contractor requested modification.
- (d) Temporary concrete barrier wall will be measured and paid for according to Section 704.
- (e) Impact attenuators, temporary bridge rail, and temporary rumble strips will be paid for separately.

- (f) Temporary pavement markings shown on the Standard will be measured and paid for according to Section 703 and Section 780.
- (g) All pavement marking removal will be measured and paid for according to Section 703 or Section 783.
- (h) Temporary pavement marking on the lower slope of the temporary concrete barrier wall will be measured and paid for as TEMPORARY PAVEMENT MARKING, 6”.
- (i) All prismatic barrier wall reflectors will be measured and paid for according to the Recurring Special Provision Guardrail and Barrier Wall Delineation.
- (j) The Changeable Message Sign required for Full Expressway Closures shall not be paid for separately.

TRAFFIC CONTROL SURVEILLANCE (EXPRESSWAYS)

Effective: 10/25/95

Revised: 1/9/98

The Contractor shall provide a person with a vehicle to survey, inspect, and maintain all temporary traffic control devices when a lane is closed to traffic and when hazards are present adjacent to or within 10 foot of the edge of pavement for more than 24 hours.

The surveillance person is required to drive through the project, to inspect all temporary traffic control devices, to correct all traffic control deficiencies, if possible, or immediately contact someone else to make corrections and to assist with directing traffic until such corrections are made, at intervals not to exceed 4 hours. This person shall list every inspection on an inspection form, furnished by the Engineer, and shall return a completed form on the first working day after the inspections are made.

The Contractor shall supply a telephone staffed on a 24-hour-a-day basis to receive any notification of any deficiencies regarding traffic control and protection or receive any request for improving, correcting or modifying traffic control, installations or devices, including pavement markings. The Contractor shall dispatch additional men, materials and equipment as necessary to begin to correct, improve or modify the traffic control as directed, within one hour of notification by this surveillance person or by the Department. Upon completion of such corrections and/or revisions, the Contractor shall notify the Department's Communication Center at (847) 705-4612.

Method of Measurement.

Traffic Control Surveillance will be measured on calendar day basis. One calendar day is equal to a minimum of six (6) inspections. The inspections shall start within 4 hours after the lane is closed to traffic or a hazard exists within 10 foot from the edge of pavement and shall end when the lane closure or hazard is removed.

Basis of Payment.

Surveillance will be paid for at the contract unit price per calendar day or fraction thereof for TRAFFIC CONTROL SURVEILLANCE, EXPRESSWAYS. The price shall include all labor and equipment necessary to provide the required inspection and maintenance on the expressway and on all cross streets which are included in the project. The cost of the materials for the maintenance of traffic control devices shall be included in the traffic control pay items.

KEEPING THE EXPRESSWAY OPEN TO TRAFFIC

Whenever work is in progress on or adjacent to an expressway, the Contractor shall provide the necessary traffic control devices to warn the public and to delineate the work zone as required in these Special Provisions, the Standard Specifications, the State Standards and the District Freeway details. All Contractors' personnel shall be limited to these barricaded work zones and shall not cross the expressway.

The Contractor shall request and gain approval from the Illinois Department of Transportation's Expressway Traffic Operations Engineer at www.idotlcs.com twenty-four (24) hours in advance of all daily lane, ramp and shoulder closures and one week in advance of all permanent and weekend closures on all Freeways and/or Expressways in District One. This advance notification is calculated based on workweek of Monday through Friday and shall not include weekends or Holidays.

LOCATION: I-290 Extension: Higgins to I-355 (4 & 5-Lane Section)

| WEEK NIGHT | TYPE OF CLOSURES | ALLOWABLE LANE CLOSURE HOURS | | |
|-------------------|------------------|------------------------------|----|----------------|
| Sunday - Thursday | 1-Lane | 7:00 PM | to | 5:00 AM |
| | 2-Lane | 9:00 PM | to | 5:00 AM |
| | 3-Lane* | 11:00 PM | to | 5:00 AM |
| Friday | 1-Lane | 8:00 PM (Fri) | to | 11:00 AM (Sat) |
| | 2-Lane | 10:00 PM (Fri) | to | 9:00 AM (Sat) |
| | 3-Lane* | 11:59 PM (Fri) | to | 6:00 AM (Sat) |
| Saturday | 1-Lane | 8:00 PM (Sat) | to | 1:00 PM (Sun) |
| | 2-Lane | 10:00 PM (Sat) | to | 10:00 AM (Sun) |
| | 3-Lane* | 11:59 PM (Sat) | to | 8:00 AM (Sun) |

(*) No more than 2 lanes shall be closed in the 4-lane sections unless doing full stops or stage changes. Closures within the 2-lane areas of I-290 mainline shall follow the 3-lane hours above.

LOCATION: Elgin–O’Hare (IL 390) / Thorndale Avenue

| WEEK NIGHT | TYPE OF CLOSURE | ALLOWABLE LANE CLOSURE HOURS | | | | | |
|----------------|-----------------|------------------------------|----|----------------|----------------|----|----------------|
| | | INBOUND | | | OUTBOUND | | |
| Sunday - Thurs | One Lane | 8:00 PM | to | 5:00 AM | 9:00 PM | to | 6:00 AM |
| Friday | One Lane | 9:00 PM (Fri) | to | 8:00 AM (Sat) | 10:00 PM (Fri) | to | 10:00 AM (Sat) |
| Saturday | One Lane | 9:00 PM (Sat) | to | 10:00 AM (Sun) | 11:00 PM (Sat) | to | 11:59 AM (Sun) |

The segment of existing Elgin-O’Hare Expressway and Thorndale Avenue within the Contract limits and extending east to beyond the intersection of Thorndale Avenue and Park Boulevard, is considered an Expressway facility and shall follow the allowable lane closure hours as specified above.

Full ramp closures are only permitted as approved by the Engineer during the hours shown below:

- between the hours of 1:00 a.m. and 5:00 a.m. on Monday thru Friday
- between the hours of 1:00 a.m. and 6:00 a.m. on Saturday, and
- between the hours of 1:00 a.m. and 7:00 a.m. on Sunday

In addition to the hours noted above, temporary shoulder and partial ramp closures are allowed weekdays between 9:00 A.M. and 3:00 P.M. and between 7:00 P.M. and 5:00 A.M.

Full Expressway Closures, narrow lanes, and permanent shoulder closures will not be allowed between November 23, 2015 and April 1, 2016 and between November 15, 2016 and April 1, 2017, except for the closure required along westbound Elgin-O’Hare (IL 390) and Ramp G7 for the bridge B-21 - Ramp G1 Flyover Structure (SN 022-0557) girder erection between the north abutment and Pier 3 in Construction Stage 1D.

Full Expressway Closures for the purposes of bridge superstructure erection will only be permitted during the low traffic volume hours of 12:00 A.M. to 5:00 A.M. Monday thru Friday and from 1:00 A.M. to 7:00 A.M. on Sunday. For erection of the first two girder lines in each direction over I-290, full expressway closure hours will be allowed from 12:00 A.M. to 8:00 A.M. on Sunday. During Full Expressway Closures, the Contractor will be required to close off all lanes except two (2) when the closure is along Westbound I-290 and all lanes except one (1) when the closure is along Eastbound I-290, using Freeway Standard Closures. Freeway traffic will be detoured onto the exit ramps ahead of the work zone as described in the Maintenance of Traffic notes and plans. Police forces should be notified and requested to close off Thorndale Avenue, which shall be detoured during this work. The District One Traffic Operations Department **shall be** notified (847-705-4151) at least 3 working days (weekends and holidays DO NOT count into this 72 hours notification) in advance of the proposed road closure and will coordinate the closure operations with police forces. Liquidated Damages as specified in the Failure to Open Traffic Lanes to Traffic for one lane or ramp blocked shall be assessed to the Contract for every 15 minutes beyond the initial 15 minutes all lanes are blocked.

The Contractor will submit all traffic control plans and construction schedules for the subject closure(s) to the Engineer for his approval, at least one (1) week in advance of each proposed full closure occurrence. Associated expressway entrance or exit ramp closures will be included in this submittal.

All stage changes requiring the stopping and/or the pacing of traffic shall take place during the allowable hours for Full Expressway Closures and shall be approved by the Engineer.

All daily lane closures shall be removed during adverse weather conditions such as rain, snow, and/or fog and as determined by the Engineer.

Additional lane closure hour restrictions may have to be imposed to facilitate the flow of traffic to and from major sporting events and/or other events.

All lane closure signs shall not be erected any earlier than one-half (1/2) hour before the starting hours listed above. Also, these signs should be taken down within one-half (1/2) hour after the closure is removed.

The Contractor will be required to cooperate with all other contractors when erecting lane closures on the expressway. All lane closures (includes the taper lengths) without a three (3) mile gap between each other, in one direction of the expressway, shall be on the same side of the pavement. Lane closures on the same side of the pavement with a half (1/2) mile or less gap between the end of one work zone and the start of taper of next work zone should be connected. The maximum length of any lane closure on the project and combined with any adjacent projects shall be three (3) miles. Gaps between successive permanent lane closures shall be no less than two (2) miles in length.

Private vehicles shall not be parked in the work zone. Contractor's equipment and/or vehicles shall not be parked on the shoulders or in the median during non-working hours. The parking of equipment and/or vehicles on State right-of-way will only be permitted at the locations approved by the Engineer.

WINTER PERIOD WORK

Description. Work other than what is shown in the plans and described in these special provisions between December 1 and April 1 (winter period) of any calendar year is not required in order to meet the completion dates specified in the contract. The Contractor's bid proposal should be submitted with the understanding, that work not shown in the plans and described in these special provisions between December 1 and April 1 in any calendar year will not be performed.

Should the Contractor request to perform work between December 1 and April 1, that is not otherwise prohibited by any other restrictions in the contract, no damages or additional compensation will be allowed to the Contractor for any delays, costs or inconveniences associated with such work.

NIGHTTIME WORK ZONE LIGHTING

Effective: November 1, 2008

Revised: June 15, 2010

Description. This work shall consist of furnishing, installing, maintaining, moving, and removing lighting for nighttime work zones. Nighttime shall be defined as occurring shortly before sunset until after sunrise.

Materials. The lighting shall consist of mobile and/or stationary lighting systems as required herein for the specific type of construction. Mobile lighting systems shall consist of luminaires attached to construction equipment or moveable carts. Stationary lighting systems shall consist of roadway luminaires mounted on temporary poles or trailer mounted light towers at fixed locations. Some lighting systems, such as balloon lights, may be adapted to both mobile and stationary applications.

Equipment. The Contractor shall furnish an illuminance meter for use by the Engineer. The meter shall have a digital display calibrated to NIST standards, shall be cosine and color corrected, and shall have an accuracy of \pm five percent. The sensor shall have a level indicator to ensure measurements are taken in a horizontal plane.

CONSTRUCTION REQUIREMENTS

General. At the preconstruction conference, the Contractor shall submit the type(s) of lighting system to be used and the locations of all devices.

Before nighttime construction may begin, the lighting system shall be demonstrated as being operational.

Nighttime Flagging. The requirements for nighttime flagging shall be according to Article 701.13 of the Standard Specifications and the glare control requirements contained herein.

Lighting System Design. The lighting system shall be designed to meet the following.

- (a) Lighting Levels. The lighting system shall provide a minimum of 5 foot candles (54 lux) throughout the work area. For mobile operations, the work area shall be defined as 25 ft. (9 m) in front of and behind moving equipment. For stationary operations, the work area shall be defined as the entire area where work is being performed.

Lighting levels will be measured with an illuminance meter. Readings will be taken in a horizontal plane 3 ft. (1 m) above the pavement or ground surface.

- (b) Glare Control. The lighting system shall be designed and operated so as to avoid glare that interferes with traffic, workers, or inspection personnel. Lighting systems with flood, spot, or stadium type luminaires shall be aimed downward at the work and rotated outward no greater than 30 degrees from nadir (straight down). Balloon lights shall be positioned at least 12 ft. (3.6 m) above the roadway.

As a large component of glare, the headlights of construction vehicles and equipment shall not be operated within the work zone except as allowed for specific construction operations. Headlights shall never be used when facing oncoming traffic.

- (c) Light Trespass. The lighting system shall be designed to effectively light the work area without spilling over to adjoining property. When, in the opinion of the Engineer, the lighting is disturbing adjoining property, the Contractor shall modify the lighting arrangement or add hardware to shield the light trespass.

Construction Operations. The lighting design required above shall be provided at any location where construction equipment is operating or workers are present on foot. When multiple operations are being carried on simultaneously, lighting shall be provided at each separate work area.

The lighting requirements for specific construction operations shall be as follows.

- (a) Installation or Removal of Work Zone Traffic Control. The required lighting level shall be provided at each truck and piece of equipment used during the installation or removal of work zone traffic control. Headlights may be operated in the work zone.
- (b) Guardrail, Fence and High Tension Cable Barrier Median Repair. The required lighting level shall be provided by mounting a minimum of one balloon light to each piece of mobile construction equipment used in the work zone. This would include all machines but not include trucks used to transport materials and personnel or other vehicles that are continuously moving in and out of the work zone. The headlights of construction equipment shall not be operated within the work zone.
- (c) Pavement Marking and Raised Reflective Pavement Marker Removal/Installation. The striping truck and the attenuator/arrow board trucks may be operated by headlights alone; however, additional lighting may be necessary for the operator of the striping truck to perform the work.

For raised reflective pavement marker removal and installation and other pavement marking operations where workers are on foot, the required lighting level shall be provided at each truck and piece of equipment.

- (d) Sweeping. The required lighting level shall be mounted on the sweeping train vehicles during the sweeping operations. Headlights may be operated in the work zone.
- (e) Layout, Testing, and Inspection. The required lighting level shall be provided for each active area of construction layout, material testing, and inspection. The work area shall be defined as 15 ft. (7.6 m) in front and back of the individual(s) performing the tasks.

Nighttime Work Zone Lighting will not be paid for as a separate item, but the cost shall be considered as included in the contract unit prices for the construction items involved, and no additional compensation will be allowed.

TRAFFIC CONTROL FOR WORK ZONE AREAS

Effective: 9/14/95

Revised: 1/1/07

Work zone entry and exit openings shall be established daily by the Contractor with the approval of the Engineer. All vehicles including cars and pickup trucks shall exit the work zone at the exit openings. All trucks shall enter the work zone at the entry openings. These openings shall be signed in accordance with the details shown elsewhere in the plans and shall be under flagger control during working hours.

The Contractor shall plan his trucking operations into and out of the work zone as well as on to and off the expressway to maintain adequate merging distance. Merging distances to cross all lanes of traffic shall be no less than 1/2 mile. This distance is the length from where the trucks enter the expressway to where the trucks enter the work zone. It is also the length from where the trucks exit the work zone to where the trucks exit the expressway. The stopping of expressway traffic to allow trucks to change lanes and/or cross the expressway is prohibited.

Failure to comply with the above requirements will result in a Traffic Control Deficiency charge. The deficiency charge will be calculated as outlined in Article 105.03 of the Standard Specifications. The Contractor will be assessed this daily charge for each day a deficiency is documented by the Engineer.

SIGN SHOP DRAWING SUBMITTAL

Effective: January 22, 2013

Add the following paragraph to Article 720.03:

“Shop drawings will be required, according to Article 105.04, for all Arterials/Expressway signs except standards/highway signs covered in the MUTCD. Shop drawings shall be submitted to the Engineer for review and approval prior to fabrication. The shop drawings shall include dimensions, letter sizing, font type, colors and materials.”

TEMPORARY CONCRETE BARRIER

Description. This work shall consist of furnishing, placing, anchoring, maintaining, relocating and removing temporary concrete barrier at the locations shown on the plans or as directed by the Engineer. If specified on the plans, the temporary concrete barrier may be required to remain in place at the conclusion of the contract. At locations specified on the plans, anchoring pins are required to secure the temporary concrete barrier to pavement when the work zone area, stored equipment and/or materials, or Contractor's activities are within 3'-9" from the back of the temporary concrete barrier. At all other locations adjacent to temporary concrete barrier, the Contractor is not allowed to store equipment or materials within 3'-9" of the temporary concrete barrier. The work shall be performed in accordance with the applicable portions of Section 704 of the Standard Specifications, and as indicated herein.

Add the following to Article 704.04 of the Standard Specifications:

"Anchoring pins shall be used to secure the temporary concrete barrier when the work zone area, stored equipment and/or materials, or Contractor's activities are within 3'-9" from the back of the temporary concrete barrier."

Add the following to Article 704.05 of the Standard Specifications:

"This work shall include the materials and labor necessary for securing temporary concrete barrier."

TEMPORARY CONCRETE BARRIER shall consist of furnishing, placing, maintaining and removing temporary concrete barrier, at the locations denoted in the plans or as directed by the Engineer, in accordance with Section 704 of the Standard Specifications.

RELOCATE TEMPORARY CONCRETE BARRIER shall consist of relocating, maintaining and removing temporary concrete barrier, at the locations denoted in the plans or as directed by the Engineer, in accordance with Section 704 of the Standard Specifications.

Method of Measurement. This work will be measured for payment in feet, in place, along the centerline of the barrier and shall include all work as described herein, in the Standard Specifications, and in the applicable Highway Standards.

Basis of Payment. TEMPORARY CONCRETE BARRIER will be paid for at the contract unit price per foot. RELOCATE TEMPORARY CONCRETE BARRIER will be paid for at the contract unit price per foot. All work and material needed to install and remove anchor pins to secure the temporary concrete barrier shall not be paid for separately, but shall be included in the contract unit cost of the various temporary concrete barrier pay items.

TYPE III TEMPORARY TAPE FOR WET CONDITIONS

Effective: February 1, 2007
 Revised: February 1, 2011

Description. This work shall consist of furnishing, installing, and maintaining Type III Temporary Pavement Marking Tape for Wet Conditions.

Materials. Materials shall be according to the following.

| Item | Article/Section |
|---------------------------------|-----------------|
| (a) Pavement Marking Tape | 1095.06 |

Initial minimum reflectance values under dry and wet conditions shall be as specified in Article 1095.06. The marking tape shall maintain its reflective properties when submerged in water. The wet reflective properties will be verified by a visual inspection method performed by the Department. The surface of the material shall provide an average skid resistance of 45 BPN when tested according to ASTM E 303.

CONSTRUCTION REQUIREMENTS

Type III Temporary Tape for Wet Conditions shall meet the requirements of Article 703.03 and 703.05. Application shall follow manufacturer’s recommendations.

Method of Measurement. This work will be measured for payment in place, in feet (meters).

Basis of Payment. This work will be paid for at the contract unit price per foot (meter) for WET REFLECTIVE TEMPORARY TAPE TYPE III of the line width specified, and at the contract unit price per square foot (square meter) for WET REFLECTIVE TEMPORARY TAPE TYPE III, LETTERS AND SYMBOLS.

STABILIZED CONSTRUCTION ENTRANCE

Description. This work shall consist of constructing a stabilized construction entrance, including furnishing, installing, maintaining and removing a stabilized pad of aggregate underlain with filter fabric, as shown on the plans or as directed by the Engineer.

Materials. Materials shall be according to the following.

| Item | Article/Section |
|----------------------------|-----------------|
| (a) Coarse Aggregate | 1004.04 |
| (b) Filter Fabric | 1080.03 |

Construction Requirements. The coarse aggregate shall be a thickness of 6 inches or more. The aggregate shall not be placed until the entrance area has been inspected and approved by the Engineer. The aggregate shall be dumped and spread into place in approximately horizontal layers. The aggregate shall be placed in such a manner as to produce a reasonably homogeneous stable fill that contains no segregated pockets of larger or smaller fragments or large unfilled space caused by bridging of larger fragments.

The stabilized construction entrance shall have a minimum width of 14 feet and a minimum length of 50 feet.

All surface water flowing or diverted toward the construction entrance shall be piped across the entrance. Any pipe used for this will be considered included in the unit price for STABILIZED CONSTRUCTION ENTRANCE. The stabilized construction entrance shall have positive drainage away from the roadway.

The entrance shall remain in place and be maintained until the disturbed area is stabilized. Any sediment spilled onto public right-of-ways shall be removed immediately.

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

Basis of Payment. This work will be paid for at the contract unit price per square yard for STABILIZED CONSTRUCTION ENTRANCE, which price shall constitute full payment for all labor, material, tools, equipment and any other items required to complete the work.

DETOUR SIGNING

Description. This work shall consist of furnishing all materials, labor and equipment necessary to place and maintain detour signing as detailed in the plans for the temporary closures along I-290, Thorndale Avenue, Elgin O'Hare (IL 390), and the various interchange ramps.

Construction Requirements. Work shall be done according to Sections 701, 720 and 1106 of the Standard Specifications where applicable, and as directed by the Engineer or herein specified.

All signs and barricades utilized for the proposed detours shall be new or in like new condition.

The signs are to be in place and uncovered prior to any roadway or ramp closure. When a detour is not in use, the detour signing shall be completely covered.

The signs and posts shall be removed when detours are no longer required. The Contractor shall return the area around the signs to its previous condition, at the Contractor's expense.

Method of Measurement. This work will not be measured for payment.

Basis of Payment. This work will be paid for at the contract lump sum price for DETOUR SIGNING.

TEMPORARY INFORMATION SIGNING

Effective: November 13, 1996

Revised: January 2, 2007

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

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

| | <u>Item</u> | <u>Article/Section</u> |
|-----|-------------------------|------------------------|
| a.) | Sign Base (Notes 1 & 2) | 1090 |
| b.) | Sign Face (Note 3) | 1091 |
| c.) | Sign Legends | 1092 |
| d.) | Sign Supports | 1093 |
| e.) | Overlay Panels (Note 4) | 1090.02 |

Note 1. The Contractor may use 5/8 inch (16 mm) instead of 3/4 inch (19 mm) thick plywood.

Note 2. Type A sheeting can be used on the plywood base.

Note 3. All sign faces shall be Type A except all orange signs shall meet the requirements of Article 1106.01.

Note 4. The overlay panels shall be 0.08 inch (2 mm) thick.

GENERAL CONSTRUCTION REQUIREMENTS

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

Signs which are placed along the roadway and/or within the construction zone shall be installed according to the requirements of Article 701.14 and Article 720.04. The signs shall be 7 ft (2.1 m) above the near edge of the pavement and shall be a minimum of 2 ft (600 mm) beyond the edge of the paved shoulder. A minimum of two (2) posts shall be used.

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

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

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

All hardware, posts or skids, supports, bases for ground mounted signs, connections, which are required for mounting these signs will be included as part of this pay item.

Basis of Payment.

This work shall be paid for at the contract unit price per square foot (square meter) for TEMPORARY INFORMATION SIGNING.

TEMPORARY PAVEMENT

Description. This work shall consist of constructing a temporary pavement at the locations shown on the plans or as directed by the engineer.

The contractor shall use HMA according to Sections 355, 356, 406 of the Standard Specifications, and other applicable HMA special provisions as contained herein. The HMA mixtures to be used shall be specified in the plans. The thickness of the Temporary Pavement shall be as described in the plans.

Articles 355.08 and 406.11 of the Standard Specifications shall not apply.

The removal of the Temporary Pavement, if required, shall conform to Section 440 of the Standard Specification.

Method of Measurement. Temporary pavement 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 TEMPORARY PAVEMENT and TEMPORARY PAVEMENT (INTERSTATE).

Removal of temporary pavement will be paid for at the contract unit price per square yard for PAVEMENT REMOVAL.

GENERAL ELECTRICAL REQUIREMENTS

Effective: January 1, 2012

Add the following to Article 801 of the Standard Specifications:

“Maintenance transfer and Preconstruction Inspection:

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

Establish the procedures for formal transfer of maintenance responsibility required for the construction period.

Establish the approximate location and operating condition of lighting and/or traffic control systems which may be affected by the work

Marking of Existing Cable Systems. The party responsible for maintenance of any existing lighting and/or traffic control systems at the project site will, at the Contractor's request, mark and/or stake, once per location, all underground cable routes owned or maintained by the State. A project may involve multiple "locations" where separated electrical systems are involved (i.e. different controllers). The markings shall be taken to have a horizontal tolerance of at least 304.8 mm (one (1) foot) to either side.. The request for the cable locations and marking shall be made at the same time the request for the maintenance transfer and preconstruction inspection is made. The Contractor shall exercise extreme caution where existing buried cable runs are involved. The markings of existing systems are made strictly for assistance to the Contractor and this does not relieve the Contractor of responsibility for the repair or replacement of any cable run damaged in the course of his work, as specified elsewhere herein. Note that the contractor shall be entitled to only one request for location marking of existing systems and that multiple requests may only be honored at the contractor's expense. No locates will be made after maintenance is transferred, unless it is at the contractor's expense.

Condition of Existing Systems. The Contractor shall conduct an inventory of all existing electrical system equipment within the project limits, which may be affected by the work, making note of any parts which are found broken or missing, defective or malfunctioning. Megger and load readings shall be taken for all existing circuits which will remain in place or be modified. If a circuit is to be taken out in its entirety, then readings do not have to be taken. The inventory and test data shall be reviewed with and approved by the Engineer and a record of the inventory shall be submitted to the Engineer for the record. Without such a record, all systems transferred to the Contractor for maintenance during construction shall be returned at the end of construction in complete, fully operating condition."

Add the following to the 1st paragraph of Article 801.05(a) of the Standard Specifications:

"Items from multiple disciplines shall not be combined on a single submittal and transmittal. Items for lighting, signals, surveillance and CCTV must be in separate submittals since they may be reviewed by various personnel in various locations."

Revise the second sentence of the 5th paragraph of Article 801.05(a) of the Standard Specifications to read:

“The Engineer will stamp the submittals indicating their status as ‘Approved’, ‘Approved as Noted’, ‘Disapproved’, or ‘Information Only’.

Revise the 6th paragraph of Article 801.05(a) of the Standard Specifications to read:

“Resubmittals. All submitted items reviewed and marked ‘Approved as Noted’, or ‘Disapproved’ are to be resubmitted in their entirety with a disposition of previous comments to verify contract compliance at no additional cost to the state unless otherwise indicated within the submittal comments.”

Revise Article 801.11(a) of the Standard Specifications to read:

“Lighting Operation and Maintenance Responsibility. The scope of work shall include the assumption of responsibility for the continuing operation and maintenance the of existing, proposed, temporary, sign and navigation lighting, or other lighting systems and all appurtenances affected by the work as specified elsewhere herein. Maintenance of lighting systems is specified elsewhere and will be paid for separately

Energy and Demand Charges. The payment of basic energy and demand charges by the electric utility for existing lighting which remains in service will continue as a responsibility of the Owner, unless otherwise indicated. Unless otherwise indicated or required by the Engineer duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously at the Owner's expense and lighting systems shall not be kept in operation during long daytime periods at the Owner's expense. Upon written authorization from the Engineer to place a proposed new lighting system in service, whether the system has passed final acceptance or not, (such as to allow temporary lighting to be removed), the Owner will accept responsibility for energy and demand charges for such lighting, effective the date of authorization. All other energy and demand payments to the utility shall be the responsibility of the Contractor until final acceptance.”

Add the following to Section 801 of the Standard Specifications:

“Lighting Cable Identification. Each wire installed shall be identified with its complete circuit number at each termination, splice, junction box or other location where the wire is accessible.”

“Lighting Cable Fuse Installation. Standard fuse holders shall be used on non-frangible (non-breakaway) light pole installations and quick-disconnect fuse holders shall be used on frangible (breakaway) light pole installations. Wires shall be carefully stripped only as far as needed for connection to the device. Over-stripping shall be avoided. An oxide inhibiting lubricant shall be applied to the wire for minimum connection resistance before the terminals are crimped-on. Crimping shall be performed in accordance with the fuse holder manufacturer's recommendations. The exposed metal connecting portion of the assembly shall be taped with two half-lapped wraps of electrical tape and then covered by the specified insulating boot. The fuse holder shall be installed such that the fuse side is connected to the pole wire (load side) and the receptacle side of the holder is connected to the line side.”

Revise the 2nd paragraph of Article 801.16 of the Standard Specifications to read:

“When the work is complete, and seven days before the request for a final inspection, the full-size set of contract drawings. Stamped “RECORD DRAWINGS”, shall be submitted to the Engineer for review and approval and shall be stamped with the date and the signature of the Contractor’s supervising Engineer or electrician. The record drawings shall be submitted in PDF format on CDROM as well as hardcopy for review and approval. In addition to the record drawings, copies of the final catalog cuts which have been Approved or Approved as Noted shall be submitted in PDF format along with the record drawings. The PDF files shall clearly indicate either by filename or PDF table of contents the respective pay item number. Specific part or model numbers of items which have been selected shall be clearly visible.”

Add the following to Article 801.16 of the Standard Specifications:

“In addition to the specified record drawings, the Contactor shall record GPS coordinates of the following electrical components being installed, modified or being affected in other ways by this contract:

- Last light pole on each circuit
- Handholes
- Conduit roadway crossings
- Controllers
- Control Buildings
- Structures with electrical connections, i.e. DMS, lighted signs.
- Electric Service locations
- CCTV Camera installations
- Fiber Optic Splice Locations

Datum to be used shall be North American 1983.

Data shall be provided electronically and in print form. The electronic format shall be compatible with MS Excel. Latitude and Longitude shall be in decimal degrees with a minimum of 6 decimal places. Each coordinate shall have the following information:

1. Description of item
2. Designation or approximate station if the item is undesignated
3. Latitude
4. Longitude

Examples:

| Equipment Description | Equipment Designation | Latitude | Longitude |
|-----------------------------|--------------------------------|-----------|------------|
| CCTV Camera pole | ST42 | 41.580493 | -87.793378 |
| FO mainline splice handhole | HHL-ST31 | 41.558532 | -87.792571 |
| Handhole | HH at STA 234+35 | 41.765532 | -87.543571 |
| Electric Service | Elec Srv | 41.602248 | -87.794053 |
| Conduit crossing | SB IL83 to EB I290 ramp SIDE A | 41.584593 | -87.793378 |
| Conduit crossing | SB IL83 to EB I290 ramp SIDE B | 41.584600 | -87.793432 |
| Light Pole | DA03 | 41.558532 | -87.792571 |
| Lighting Controller | X | 41.651848 | -87.762053 |
| Sign Structure | FGD | 41.580493 | -87.793378 |
| Video Collection Point | VCP-IK | 41.558532 | -87.789771 |
| Fiber splice connection | Toll Plaza34 | 41.606928 | -87.794053 |

Prior to the collection of data, the contractor shall provide a sample data collection of at least six data points of known locations to be reviewed and verified by the Engineer to be accurate within 100 feet. Upon verification, data collection can begin. Data collection can be made as construction progresses, or can be collected after all items are installed. If the data is unacceptable the contractor shall make corrections to the data collection equipment and or process and submit the data for review and approval as specified.

Accuracy. Data collected is to be mapping grade. A handheld mapping grade GPS device shall be used for the data collection. The receiver shall support differential correction and data shall have a minimum 5 meter accuracy after post processing.

GPS receivers integrated into cellular communication devices, recreational and automotive GPS devices are not acceptable.

The GPS shall be the product of an established major GPS manufacturer having been in the business for a minimum of 6 years.”

MAINTENANCE OF LIGHTING SYSTEMS

Effective: January 1, 2012

Replace Article 801.11 and 801.12 of the Standard Specifications with the following:

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

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

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

Maintenance of Proposed Lighting Systems

Proposed Lighting Systems. Proposed lighting systems shall be defined as any lighting system or part of a lighting system, temporary or permanent, which is to be constructed under this contract.

The Contractor shall be fully responsible for maintenance of all items installed under this contract. Maintenance shall include, but not be limited to, any equipment failures or malfunctions as well as equipment damage either by the motoring public, Contractor operations, vandalism, or other means. The potential cost of replacing or repairing any malfunctioning, damaged, or vandalized equipment shall be included in the bid price of this item and will not be paid for separately.

Lighting System Maintenance Operations

The Contractor's responsibility shall include all applicable responsibilities of the Electrical Maintenance Contract, State of Illinois, Department of Transportation, Division of Highways, District One. These responsibilities shall include the maintenance of lighting units (including sign lighting), cable runs and lighting controls. In the case of a pole knockdown or sign light damage, the Contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service. The equipment shall then be re-set by the contractor within the time limits specified herein.

If the equipment damaged by normal vehicular traffic, not contractor operations, is beyond repair and cannot be re-set, the contractor shall replace the equipment in kind with payment made for such equipment under Article 109.04. If the equipment damaged by any construction operations, not normal vehicular traffic, is beyond repair and cannot be re-set, the contractor shall replace the equipment in kind and the cost of the equipment shall be included in the cost of this pay item and shall not be paid for separately.

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

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

| INCIDENT OR PROBLEM | SERVICE RESPONSE TIME | SERVICE RESTORATION TIME | PERMANENT REPAIR TIME |
|---|-----------------------|--------------------------|-----------------------|
| Control cabinet out | 1 hour | 4 hours | 7 Calendar days |
| Hanging mast arm | 1 hour to clear | na | 7 Calendar days |
| Radio problem | 1 hour | 4 hours | 7 Calendar days |
| Motorist caused damage or leaning light pole 10 degrees or more | 1 hour to clear | 4 hours | 7 Calendar days |
| Circuit out – Needs to reset breaker | 1 hour | 4 hours | na |
| Circuit out – Cable trouble | 1 hour | 24 hours | 21 Calendar days |
| Outage of 3 or more successive lights | 1 hour | 4 hours | na |
| Outage of 75% of lights on one tower | 1 hour | 4 hours | na |
| Outage of light nearest RR crossing approach, Islands and gores | 1 hour | 4 hours | na |
| Outage (single or multiple) found on night outage survey or reported to EMC | na | na | 7 Calendar days |
| Navigation light outage | na | na | 24 hours |

- **Service Response Time** -- amount of time from the initial notification to the Contractor until a patrolman physically arrives at the location.
- **Service Restoration Time** – amount of time from the initial notification to the Contractor until the time the system is fully operational again (In cases of motorist caused damage the undamaged portions of the system are operational.)
- **Permanent Repair Time** – amount of time from initial notification to the Contractor until the time permanent repairs are made if the Contractor was required to make temporary repairs to meet the service restoration requirement.

Failure to provide this service will result in liquidated damages of \$500 per day per occurrence. In addition, the Department reserves the right to assign any work not completed within this timeframe to the Electrical Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Electrical Maintenance Contractor within one month after the incident will result in additional liquidated damages of \$500 per month per occurrence. Unpaid bills will be deducted from any monies owed to the Contractor. Repeated failures and/or a gross failure of maintenance shall result in the State's Electrical Maintenance Contractor being directed to correct all deficiencies and the resulting costs deducted from any monies owed the contractor.

Damage caused by the Contractor's operations shall be repaired at no additional cost to the Contract.

Operation of Lighting

The lighting shall be operational every night, dusk to dawn. Duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously. Lighting systems shall not be kept in operation during long daytime periods.

Method of Measurement

The contractor shall demonstrate to the satisfaction of the Engineer that the lighting system is fully operational prior to submitting a pay request. Failure to do so will be grounds for denying the pay request. Months in which the lighting systems are not maintained and not operational will not be paid for. Payment shall not be made retroactively for months in which lighting systems were not operational.

Basis of Payment. Maintenance of lighting systems shall be paid for at the contract unit price per calendar month for **MAINTENANCE OF LIGHTING SYSTEM**, which shall include all work as described herein.

MAINTENANCE OF LIGHTING SYSTEMS COORDINATION

Contract Coordination

The Contractor is hereby notified that IDOT Lighting Controllers L and L1 will be under the maintenance of the contractor for Tollway Contract I-13-4607 (maintenance contractor). The Contractor shall be responsible to coordinate the connection of the lighting units being installed under this contract to these controllers with the maintenance contractor. The Contractor shall be responsible for having all conduit and lighting pole foundations installed and ready for the maintenance contractor to perform the necessary work to connect and power the lighting units being installed within this contract to these controllers.

The Contractor shall provide sufficient notice to the maintenance contractor of the dates he requires connection to and power from these controllers. The maintenance contractor shall maintain access priority to all controllers under his maintenance responsibility. Any delays due to insufficient planning and coordination by the Contractor with the maintenance contractor will not be cause for an extension of the contract completion date and/or additional payment to the contractor.

Lighting System Maintenance Operations

Where lighting controls are under the maintenance responsibility of an adjacent contract, the contractor shall install fuse kits in the last pole under his maintenance responsibility. Should the contractor fail to install fuse kits and controller failure occurs the contractor will be responsible of the repair or replacement. This work shall be included in the cost of MAINTENANCE OF LIGHTING SYSTEM and shall not be paid for separately

Method of Measurement

This work will not be measure for payment.

Basis of Payment.

Payment for this work shall be included in the unit price for MAINTENANCE OF LIGHTING SYSTEM. No additional payment shall be made.

LUMINAIRE SAFETY CABLE ASSEMBLY

Effective: January 1, 2012

Description: This item shall consist of providing a luminaire safety cable assembly as specified herein and as indicated in the plans.

Materials. Materials shall be according to the following:

Wire Rope. Cables (wire rope) shall be manufactured from Type 304 or Type 316 stainless steel having a maximum carbon content of 0.08 % and shall be a stranded assembly. Cables shall be 3.18 mm (0.125") diameter, 7x19 Class strand core and shall have no strand joints or strand splices.

Cables shall be manufactured and listed for compliance with Federal Specification RR-W-410 and Mil-DTL-83420.

Cable terminals shall be stainless steel compatible with the cable and as recommended by the cable manufacturer. Terminations and clips shall be the same stainless steel grade as the wire rope they are connected to.

U-Bolts. U-Bolts and associated nuts, lock washers, and mounting plates shall be manufactured from Type 304 or Type 316 stainless steel.

CONSTRUCTION REQUIREMENTS

General. The safety cable assembly shall be installed as indicated in the plan details. One end of the cable assembly shall have a loop fabricated from a stainless steel compression sleeve. The other end of the cable assembly shall be connected with stainless steel wire rope clips as indicated. Slack shall be kept to a minimum to prevent the luminaire from creeping off the end of the mast arm. Unless otherwise indicated in the plans, the luminaire safety cable shall only be used in conjunction with luminaires which are directly above the traveled pavement.

Basis of Payment: This work shall be paid for at the contract price each for **LUMINAIRE SAFETY CABLE ASSEMBLY**, which shall be payment for the work as described herein and as indicated in the plans.

UNIT DUCT

Effective: January 1, 2012

Revise the first paragraph of Article 810.04 to read:

“The unit duct shall be installed at a minimum depth of 30-inches (760 mm) unless otherwise directed by the Engineer.”

Revise Article 1088.01(c) to read:

“(c) Coilable Nonmetallic Conduit.

General:

The duct shall be a plastic duct which is intended for underground use and which can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance. The duct shall be a plastic duct which is intended for underground use and can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance.

The duct shall be made of high density polyethylene which shall meet the requirements of ASTM D 2447, for schedule 40. The duct shall be composed of black high density polyethylene meeting the requirements of ASTM D 3350, Class C, Grade P33. The wall thickness shall be in accordance with Table 2 for ASTM D 2447.

The duct shall be UL Listed per 651-B for continuous length HDPE coiled conduit. The duct shall also comply with NEC Article 354.100 and 354.120.

Submittal information shall demonstrate compliance with the details of these requirements.

Dimensions:

Duct dimensions shall conform to the standards listed in ASTM D2447. Submittal information shall demonstrate compliance with these requirements.

| Nominal Size | | Nominal I.D. | | Nominal O.D. | | Minimum Wall | |
|--------------|------|--------------|-------|--------------|-------|--------------|--------------|
| mm | in | mm | in | mm | in | mm | in |
| 31.75 | 1.25 | 35.05 | 1.380 | 42.16 | 1.660 | 3.556 +0.51 | 0.140 +0.020 |
| 38.1 | 1.50 | 40.89 | 1.610 | 48.26 | 1.900 | 3.683 +0.51 | 0.145 +0.020 |

| Nominal Size | | Pulled Tensile | |
|--------------|------|----------------|-----|
| mm | in | N | lbs |
| 31.75 | 1.25 | 3322 | 747 |
| 38.1 | 1.50 | 3972 | 893 |

Marking:

As specified in NEMA Standard Publication No. TC-7, the duct shall be clearly and durably marked at least every 3.05 meters (10 feet) with the material designation (HDPE for high density polyethylene), nominal size of the duct and the name and/or trademark of the manufacturer.

Performance Tests:

Polyethylene Duct testing procedures and test results shall meet the requirements of UL 651. Certified copies of the test report shall be submitted to the Engineer prior to the installation of the duct. Duct crush test results shall meet or exceed the following requirements:

| Duct Diameter | | Min. force required to deform sample 50% | |
|---------------|------|--|------|
| mm | in | N | lbs |
| 35 | 1.25 | 4937 | 1110 |
| 41 | 1.5 | 4559 | 1025 |

WIRE AND CABLE

Effective: January 1, 2012

Add the following to the first paragraph of Article 1066.02(a):

“The cable shall be rated at a minimum of 90°C dry and 75°C wet and shall be suitable for installation in wet and dry locations, and shall be resistant to oils and chemicals.”

Revise the Aerial Electric Cable Properties table of Article 1066.03(a)(3) to read:

Aerial Electric Cable Properties

| Phase Conductor | | | Messenger wire | | |
|-----------------|-----------|------------------------------|------------------|-----------|-----|
| Size AWG | Stranding | Average Insulation Thickness | Minimum Size AWG | Stranding | |
| | | mm | mils | | |
| 6 | 7 | 1.1 | (45) | 6 | 6/1 |
| 4 | 7 | 1.1 | (45) | 4 | 6/1 |
| 2 | 7 | 1.1 | (45) | 2 | 6/1 |
| 1/0 | 19 | 1.5 | (60) | 1/0 | 6/1 |
| 2/0 | 19 | 1.5 | (60) | 2/0 | 6/1 |
| 3/0 | 19 | 1.5 | (60) | 3/0 | 6/1 |
| 4/0 | 19 | 1.5 | (60) | 4/0 | 6/1 |

Add the following to Article 1066.03(b) of the Standard Specifications:

“Cable sized No. 2 AWG and smaller shall be U.L. listed Type RHH/RHW and may be Type RHH/RHW/USE. Cable sized larger than No. 2 AWG shall be U.L. listed Type RHH/RHW/USE.”

Revise Article 1066.04 to read:

“Aerial Cable Assembly. The aerial cable shall be an assembly of insulated aluminum conductors according to Section 1066.02 and 1066.03. Unless otherwise indicated, the cable assembly shall be composed of three insulated conductors and a steel reinforced bare aluminum conductor (ACSR) to be used as the ground conductor. Unless otherwise indicated, the code word designation of this cable assembly is “Palomino”. The steel reinforced aluminum conductor shall conform to ASTM B-232. The cable shall be assembled according to ANSI/ICEA S-76-474.”

Revise the second paragraph of Article 1066.05 to read:

“The tape shall have reinforced metallic detection capabilities consisting of a woven reinforced polyethylene tape with a metallic core or backing.”

LUMINAIRE

Effective: January 1, 2012

Add the following to first paragraph of Article 1067(c) of the Standard Specifications:

“The reflector shall not be altered by paint or other opaque coatings which would cover or coat the reflecting surface. Control of the light distribution by any method other than the reflecting material and the aforementioned clear protective coating that will alter the reflective properties of the reflecting surface is unacceptable”

Add the following to Article 1067(f) of the Standard Specifications:

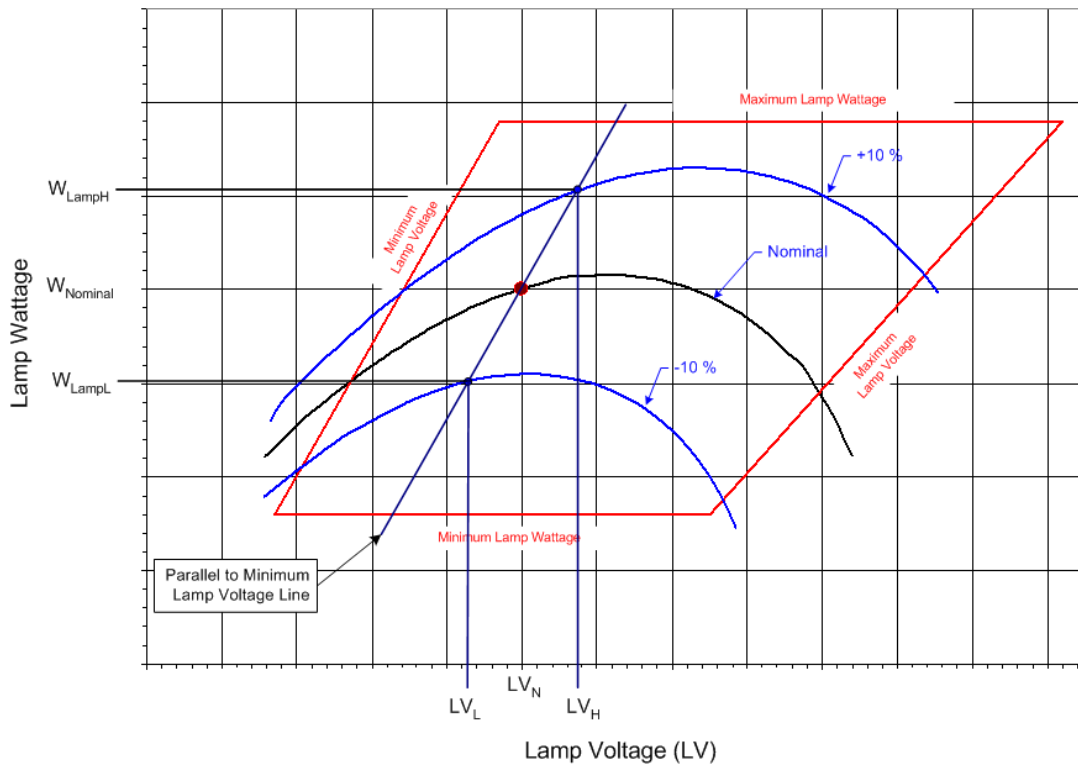
“The ballast shall be a High Pressure Sodium, high power factor, constant wattage auto-regulator, lead type (CWA) for operation on a nominal 240 volt system.”

Revise Article 1067(f)(1) of the Standard Specifications to read:

“The high pressure sodium, auto-regulator, lead type (CWA) ballast shall be designed to ANSI Standards and shall be designed and rated for operation on a nominal 240 volt system. The ballast shall provide positive lamp ignition at the input voltage of 216 volts. It shall operate the lamp over a range of input voltages from 216 to 264 volts without damage to the ballast. It shall provide lamp operation within lamp specifications for rated lamp life at input design voltage range. Operating characteristics shall produce output regulation not exceeding the following values:

| Nominal Ballast Wattage | Maximum Ballast Regulation |
|--------------------------------|-----------------------------------|
| 750 | 25% |
| 400 | 26% |
| 310 | 26% |
| 250 | 26% |
| 150 | 24% |
| 70 | 18% |

For this measure, regulation shall be defined as the ratio of the lamp watt difference between the upper and lower operating curves to the nominal lamp watts; with the lamp watt difference taken within the ANSI trapezoid at the nominal lamp operating voltage point parallel to the minimum lamp volt line:



$$\text{Ballast Regulation} = \frac{W_{LampH} - W_{LampL}}{W_{LampN}} \times 100$$

where:

W_{LampH} = lamp watts at +10% line voltage when Lamp voltage = LV_H

W_{LampL} = lamp watts at -10% line voltage when lamp voltage = LV_L

W_{LampN} = lamp watts at nominal lamp operating voltage = LV_N

| Wattage | Nominal Lamp Voltage, LV_N | LV_L | LV_H |
|---------|------------------------------|--------|--------|
| 750 | 120v | 115v | 125v |
| 400 | 100v | 95v | 105v |
| 310 | 100v | 95v | 105v |
| 250 | 100v | 95v | 105v |
| 150 | 55v | 50v | 60v |
| 70 | 52v | 47v | 57v |

Ballast losses, based on cold bench tests, shall not exceed the following values:

| Nominal Ballast Wattage | Maximum Ballast Losses |
|-------------------------|------------------------|
| 750 | 15% |
| 400 | 20% |
| 310 | 21% |
| 250 | 24% |
| 150 | 26% |
| 70 | 34% |

Ballast losses shall be calculated based on input watts and lamp watts at nominal system voltage as indicated in the following equation:

$$\text{Ballast Losses} = \frac{W_{Line} - W_{Lamp}}{W_{Lamp}} \times 100$$

where:

W_{line} = line watts at nominal system voltage

W_{lamp} = lamp watts at nominal system voltage

Ballast output to lamp. At nominal system voltage and nominal lamp voltage, the ballast shall deliver lamp wattage with the variation specified in the following table.

| Nominal Ballast Wattage | Output to lamp variation |
|-------------------------|--------------------------|
| 750 | ± 7.5% |
| 400 | ± 7.5% |
| 310 | ± 7.5% |
| 250 | ± 7.5% |
| 150 | ± 7.5% |
| 70 | ± 7.5% |

Example: For a 400w luminaire, the ballast shall deliver 400 watts ±7.5% at a lamp voltage of 100v for the nominal system voltage of 240v which is the range of 370w to 430w.

Ballast output over lamp life. Over the life of the lamp the ballast shall produce average output wattage of the nominal lamp rating as specified in the following table. Lamp wattage readings shall be taken at 5-volt increments throughout the ballast trapezoid. Reading shall begin at the lamp voltage (L_V) specified in the table and continue at 5 volt increments until the right side of the trapezoid is reached. The lamp wattage values shall then be averaged and shall be within the specified value of the nominal ballast rating. Submittal documents shall include a tabulation of the lamp wattage vs. lamp voltage readings.

| Nominal Ballast Wattage | LV Readings begin at | Maximum Wattage Variation |
|-------------------------|----------------------|---------------------------|
| 750 | 110v | ± 7.5% |
| 400 | 90v | ± 7.5% |
| 310 | 90v | ± 7.5% |
| 250 | 90v | ± 7.5% |
| 150 | 50v | ± 7.5% |
| 70 | 45v | ± 7.5% |

Example: *For a 400w luminaire, the averaged lamp wattage reading shall not exceed the range of ±7.5% which is 370w to 430w*

Add the following to Article 1067(h) of the Standard Specifications:

“Independent Testing. Independent testing of luminaires shall be required whenever the pay item quantity of luminaires of a given pay item, as indicated on the plans, is 50 or more. For each luminaire type to be so tested, one luminaire plus one luminaire for each 50 luminaires shall be tested. Example: *A plan pay item quantity of 75 luminaires for a specific pay item would dictate that 2 be tested; 135 luminaires would dictate that three be tested.*” If the luminaire performance table is missing from the contract documents, the luminaire(s) shall be tested and the test results shall be evaluated against the manufacturer’s data as provided in the approved material submittal. The test luminaire(s) results shall be equal to or better than the published data. If the test results indicated performance not meeting the published data, the test luminaire will be designated as failed and corrective action as described herein shall be performed.

The Contractor shall be responsible for all costs associated with the specified testing, including but not limited to shipping, travel and lodging costs as well as the costs of the tests themselves, all as part of the bid unit price for this item. Travel, lodging and other associated costs for travel by the Engineer shall be direct-billed to or shall be pre-paid by the Contractor, requiring no direct reimbursement to the Engineer or the independent witness, as applicable”

The Contractor shall select one of the following options for the required testing with the Engineer's approval:

- a. Engineer Factory Selection for Independent Lab: The Contractor may select this option if the luminaire manufacturing facility is within the state of Illinois. The Contractor shall propose an independent test laboratory for approval by the Engineer. The selected luminaires shall be marked by the Engineer and shipped to the independent laboratory for tests.
- b. Engineer Witness of Independent Lab Test: The Contractor may select this option if the independent testing laboratory is within the state of Illinois. The Engineer shall select, from the project luminaires at the manufacturer's facility or at the Contractor's storage facility, luminaires for testing by the independent laboratory.
- c. Independent Witness of Manufacturer Testing: The independent witness shall select from the project luminaires at the manufacturers facility or at the Contractor's storage facility, the luminaires for testing. The Contractor shall propose a qualified independent agent, familiar with the luminaire requirements and test procedures, for approval by the Engineer, to witness the required tests as performed by the luminaire manufacturer.

The independent witness shall as a minimum meet the following requirements:

- ▶ Have been involved with roadway lighting design for at least 15 years.
- ▶ Not have been the employee of a luminaire or ballast manufacturer within the last 5 years.
- ▶ Not associated in any way (plan preparation, construction or supply) with the particular project being tested.
- ▶ Be a member of IESNA in good standing.
- ▶ Provide a list of professional references.

This list is not an all inclusive list and the Engineer will make the final determination as to the acceptability of the proposed independent witness.

- d. Engineer Factory Selection and Witness of Manufacturer Testing: The Contractor may select this option if the luminaire manufacturing facility is within the state of Illinois. At the Manufacturer's facility, the Engineer shall select the luminaires to be tested and shall be present during the testing process. The Contractor shall schedule travel by the Engineer to and from the Manufacturer's laboratory to witness the performance of the required tests.

Should any of the tested luminaires fail to satisfy the specifications and perform according to approved submittal information, the luminaire shall be unacceptable and be replaced by alternate equipment meeting the specifications with the submittal and testing process repeated in their entirety; or corrections made to achieve required performance. In the case of corrections, the Contractor shall advise the Engineer of corrections made and shall request a repeat of the specified testing and, if the corrections are deemed reasonable by the Engineer, the testing process shall be repeated. The number of luminaires to be tested shall be the same quantity as originally tested; i.e. if three luminaires were tested originally, one, two or three failed, another three must be tested after corrective action is taken.

Revise Article 1067.06(a)(1) of the Standard Specifications to read:

"The lamps shall be of the clear type and shall have a color of 1900° to 2200° Kelvin."

Add the following table(s) to Article 1067 of the Standard Specifications:

IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE

| GIVEN CONDITIONS | | |
|------------------------|--|----------------|
| ROADWAY DATA | Pavement Width | 24 (ft) |
| | Number of Lanes | 2 |
| | I.E.S. Surface Classification | R3 |
| | Q-Zero Value | .07 |
| LIGHT POLE DATA | Mounting Height | 47.5 (ft) |
| | Mast Arm Length | 6 (ft) |
| | Pole Set-Back From Edge of Pavement | 10 (ft) |
| LUMINAIRE DATA | Lamp Type | HPS |
| | Lamp Lumens | 50000 |
| | I.E.S. Vertical Distribution | Asymmetrical |
| | I.E.S. Control Of Distribution | Medium Cut Off |
| | I.E.S. Lateral Distribution | Type II |
| | Total Light Loss Factor | .70 |
| LAYOUT DATA | Spacing | 220 (ft) |
| | Configuration | Single Sided |
| | Luminaire Overhang over edge of pavement | -4 (ft) |

NOTE: Variations from the above specified I.E.S. distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

| PERFORMANCE REQUIREMENTS | | |
|--------------------------|--|--|
|--------------------------|--|--|

NOTE: These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

| | | |
|---------------------|--|-----------------------|
| ILLUMINATION | Average Horizontal Illumination, E_{AVE} | 1.3 (fc) |
| | Uniformity Ratio, E_{AVE}/E_{MIN} | 3.0 (fc) |
| LUMINANCE | Average Luminance, L_{AVE} | 0.9 Cd/m ² |
| | Uniformity Ratio, L_{AVE}/L_{MIN} | 3.00 (Max) |
| | Uniformity Ratio, L_{MAX}/L_{MIN} | 5.00 (Max) |
| | Veiling Luminance Ratio, L_V/L_{AVE} | 0.30 (Max) |

Add the following table(s) to Article 1067 of the Standard Specifications:

IDOT DISTRICT 1 LUMINAIRE PERFORMANCE TABLE

| GIVEN CONDITIONS | | |
|------------------------|--|----------------|
| ROADWAY DATA | Pavement Width | 24 (ft) |
| | Number of Lanes | 2 |
| | I.E.S. Surface Classification | R3 |
| | Q-Zero Value | .07 |
| LIGHT POLE DATA | Mounting Height | 47.5 (ft) |
| | Mast Arm Length | 15 (ft) |
| | Pole Set-Back From Edge of Pavement | 13 (ft) |
| LUMINAIRE DATA | Lamp Type | HPS |
| | Lamp Lumens | 50000 |
| | I.E.S. Vertical Distribution | Asymmetrical |
| | I.E.S. Control Of Distribution | Medium Cut Off |
| | I.E.S. Lateral Distribution | Type II |
| | Total Light Loss Factor | .70 |
| LAYOUT DATA | Spacing | 220 (ft) |
| | Configuration | Single Sided |
| | Luminaire Overhang over edge of pavement | 2 (ft) |

NOTE: Variations from the above specified I.E.S. distribution pattern may be requested and acceptance of variations will be subject to review by the Engineer based on how well the performance requirements are met.

| PERFORMANCE REQUIREMENTS | | |
|--------------------------|--|--|
|--------------------------|--|--|

NOTE: These performance requirements shall be the minimum acceptable standards of photometric performance for the luminaire, based on the given conditions listed above.

| | | |
|---------------------|--|-----------------------|
| ILLUMINATION | Average Horizontal Illumination, E_{AVE} | 1.3 (fc) |
| | Uniformity Ratio, E_{AVE}/E_{MIN} | 3.0 (fc) |
| LUMINANCE | Average Luminance, L_{AVE} | 0.9 Cd/m ² |
| | Uniformity Ratio, L_{AVE}/L_{MIN} | 3.00 (Max) |
| | Uniformity Ratio, L_{MAX}/L_{MIN} | 5.00 (Max) |
| | Veiling Luminance Ratio, L_V/L_{AVE} | 0.30 (Max) |

ELECTRIC CONNECTION TO SIGN STRUCTURE

Description: This item shall consist of furnishing all material and work required to connect the extension of a lighting circuit at the base of a sign structure. The feeder, up to the sign structure as shown on the drawings or as directed by the Engineer will be paid for separately.

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

| Item | Article/Section |
|------------------------------------|-----------------|
| (a) Electric Raceway Material..... | 1088.01 |
| (b) Conductors..... | 1066.02 |
| (c) Insulation..... | 1066.03 |

Disconnect Switch. The disconnect switch shall be 600 volt, 2-pole, 30 ampere, fusible, with solid neutral in a NEMA 4X stainless steel enclosure, complete with 20 ampere, 600 volt, dual element time delay 4L Class R fuses having a UL listed interrupting rating of not less than 200,000 rms symmetrical amperes at rated voltage.

CONSTRUCTION REQUIREMENTS

General. This item shall include fusing at the base of the structure, a disconnect switch adjacent to the sign panels and shall also include the wiring, raceways, fittings and the like between the base fusing and the disconnect switch and from the disconnect switch to the sign luminaires, all as depicted on the Plans, as specified herein and as directed by the Engineer. Sign luminaires will be paid separately

Basis of Payment. This work shall be paid for at the contract unit price each for **ELECTRIC CONNECTION TO SIGN STRUCTURE.**

SIGN LUMINAIRE (LED), 76 WATT

Description: This item shall consist of furnishing, testing as required, and installing a LED luminaire suitable for illumination of roadway signage as specified herein.

General Construction

The luminaire shall be constructed from a corrosion resistant low copper A360.1 aluminum alloy as a rugged cast housing unit, finished with a polyester paint applied after a pretreatment process to ensure maximum durability. The finish shall pass the 1000 hour salt fog test per ASTM B117 and D1654 standard. The luminaire shall be suitable for "U" bolt arm mounting with + 0/-5 degree vertical adjustability on a 1.25" round or square pipe arm. The luminaire shall have a stainless steel tool-less latch for disengaging the top removable optical door for access to the terminal block, surge protection module, LED module, transfer switch, and drivers. The luminaire shall have quick disconnect connectors to the above parts for ease of installation and maintenance. The luminaire shall have a modular chip on board LED design with L70 >100,000 hour life and high lumen efficacy. The luminaire shall be rated for operating at a temperature range of -40°C to +40°C.

Regulatory Requirements

The luminaire shall be safety listed per CSA-C22.2 No. 250, wet location 40° C. The luminaire shall be ROHS compliant. Luminaire shall meet EMI compliance per FCC Title 47 CFR Part 15, Class A.

Electrical

The surge protection shall test to ANSI/IEEE62.41 specification and meet a 10KV, 5kA rating for the (240V) option. The surge protection module shall protect all downstream electronics such as led drivers, transfer switch, and relays from electrical disturbances including nearby lightning strikes. All wiring connections in the fixture shall terminate on molded phenolic, barriers type, heavy duty, terminal blocks rated for a maximum current of 30 amperes and maximum voltage of 3,300 volts. The terminal block shall accommodate No. 10 AWG wire and shall be legibly color marked to suit the components wire colors. All wiring, terminal blocks, surge protector, transfer switch, LED modules and drivers shall be fully enclosed within the fixture so none of the above parts are exposed.

Optical

The luminaire shall be constructed with multi die LED chip on board (COB) technology comprised of arrays of individual LED's on one board, being deemed more reliable and thereby providing a dense light source for better optical control. The luminaire shall have a multi-faceted reflector with a 90+% reflectivity, providing overlapping and repeatable distribution from each module to eliminate dark spots. The luminaire input watts shall be 76 watts, deliver 6453 lumens, at a LED color temperature of 4000K with a minimum color rendering index (CRI) of 65 as a minimum.

CONSTRUCTION REQUIREMENTS

Installation

Each luminaire shall be mounted on the sign walkway structure with stainless steel hardware for one point of attachment. The mounted luminaire or mounting hardware shall not extend above the bottom of the sign or below the bottom of the walkway support.

The center-to-center spacing of the luminaires will be determined by the Engineer. The end sections shall not exceed one-half the spacing between luminaires.

The mounting shall provide the correct position of the luminaire as recommended by the manufacturer and shall be able to withstand 130 km/h (80 mph) winds with a 1.3 gust factor. The sign lighting installation shall include a service disconnect with lockable exterior handle mounted within reach from the walkway.

Disabling brightness shall be shielded from traffic approaching either the front or back of the sign.

Basis of Payment

This work shall be paid for at the contract unit price each for **SIGN LUMINAIRE (LED), 76 WATT** of the mount type specified.

UNDERGROUND CONDUIT

This Supplemental Specification amends and supersedes the provisions of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, adopted January 1, 2012 and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the contract.

Section 810 of the IDOT Standard Specifications for Road and Bridge Construction, adopted January 1, 2012 shall be modified as follows:

Description: This work shall consist of furnishing and installing conduit, fittings and accessories as part of raceway either laid in trench, bored and pulled in place or encased in conduit.

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

| Item | Article/Section |
|--|-----------------|
| (a) Rigid Metal Conduit | 1088.01(a) |
| (b) Rigid Nonmetal Conduit | 1088.01(b) |
| (c) Coillable Nonmetallic Conduit | 1088.01(c) |
| (d) Portland Cement Concrete (Note 1)..... | 1020 |
| (e) Underground Cable Marking Tape..... | 1066.05 |
| (f) Fine Aggregate..... | 1003.04 |
| (g) Reinforcement Bars..... | 508 |

Note 1. Class SI concrete shall be used for encased conduit.

The first paragraph of Article 810.04 shall be replaced with the following:

Installation. All underground raceways shall have a minimum depth of 33 inches below the finished grade unless otherwise indicated on the plans. Raceways under pavement shall be installed at a minimum depth of 45 inches below the top of pavement to avoid conflicts with the underdrain unless otherwise indicated on the plans or directed by the Engineer.

All metal conduit installed underground shall be PVC coated Rigid Metal Conduit unless otherwise indicated on the plans.

Rigid nonmetallic conduit and fittings installed underground or in concrete foundations shall be Schedule 40 PVC.

Conduit shall be cleaned by rodding and swabbing to remove all dirt and other foreign materials and capped until conductors are installed.

Add the following paragraphs to Article 810.04(b):

Plowing shall be done with equipment capable of feeding the conduit through the plow. Equipment which pulls the conduit behind a bullet-nose plow will not be allowed except by written approval of the Engineer

Add the following paragraphs to Article 810.05(c):

Coillable nonmetallic conduit larger than 2 inch shall be machine straightened to remove the longitudinal curvature and ovality caused by coiling the conduit onto reels prior to installing in trench, encasing in concrete or embedding in structure. The straightening shall not deform the cross-section of the conduit such that any two measured outside diameters, each from any location and at any orientation around the longitudinal axis along the conduit differ by more than 1/4 inch. The longitudinal axis of the straightened conduit shall not deviate by more than 1/4 inch per foot from a straight line. The recommendations of the straightening machine manufacturer regarding ambient temperature shall be followed.

Method of Measurement. This work will be measured for payment in feet in place. Measurement will be made in straight lines along the centerline of the conduit between ends and changes in direction.

Basis of Payment. This work will be paid for at the contract unit price per foot for UNDERGROUND CONDUIT, of the type and size specified.

AGGREGATE FOR CONCRETE BARRIER (DISTRICT ONE)

Effective: February 11, 2004

Revised: January 24, 2008

Add the following paragraph to Article 637.02 of the Standard Specifications:

“The coarse aggregate to be used in the concrete barrier walls shall conform to the requirement for coarse aggregate used in Class BS concrete according to Article 1004.01(b), paragraph 2.”

AGGREGATE SUBGRADE IMPROVEMENT (D-1)

Effective: February 22, 2012

Revised: November 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 |
| (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 or CS 02 but shall not exceed 40 percent of the total product. The top size of the Coarse 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 or CS 02 are used in lower lifts. When RAP is blended with any of the coarse aggregates, the blending shall be done with mechanically calibrated feeders.

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 CS 01 or CS 02 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 Reclaimed Asphalt Pavement (RAP) is used, it shall be crushed and screened where 100 percent is passing the 1 1/2 in. (37.5 mm) sieve and being well graded. RAP that has been fractionated to size will not be permitted for use in capping. Capping aggregate will not be required when the aggregate subgrade improvement is used as a cubic yard pay item for undercut applications. When RAP is blended with any of the coarse aggregates, the blending shall be done with mechanically calibrated feeders.

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) 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 thicknesses of 12 in. (300 mm) or greater shall be CS 01 or CS 02.

| Grad No. | COARSE AGGREGATE SUBGRADE GRADATIONS | | | | |
|----------|--------------------------------------|--------|---------|---------|---------|
| | 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 | |

| Grad No. | COARSE AGGREGATE SUBGRADE GRADATIONS (Metric) | | | | |
|----------|---|--------|---------|---------|---------|
| | 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.
- (3) Gradation deleterious count shall not exceed 10% of total RAP and 5% of other by total weight.

COARSE AGGREGATE FOR BACKFILL, TRENCH BACKFILL AND BEDDING (D-1)

Effective: November 1, 2011

Revised: November 1, 2013

This work shall be according to Section 1004.05 of the Standard Specifications except for the following:

Reclaimed Asphalt Pavement (RAP) maybe blended with gravel, crushed gravel, crushed stone crushed concrete, crushed slag, chats, crushed sand stone or wet bottom boiler slag. The RAP used shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications". The RAP shall be uniformly graded and shall pass the 1.0 in. (25 mm) screen. When RAP is blended with any of the coarse aggregate listed above, the blending shall be done mechanically with calibrated feeders. The feeders shall have an accuracy of ± 2.0 percent of the actual quantity of material delivered. The final blended product shall not contain more than 40 percent by weight RAP.

The coarse aggregate listed above shall meet CA 6 and CA 10 gradations prior to being blended with the processed and uniformly graded RAP. Gradation deleterious count shall not exceed 10% of total RAP and 5% of other by total weight.

EMBANKMENT I

Effective: March 1, 2011

Revised: November 1, 2013

Description. This work shall be according to Section 205 of the Standard Specifications except for the following.

Material. All material shall be approved by the District Geotechnical Engineer. The proposed material must meet the following requirements.

- a) The laboratory Standard Dry Density shall be a minimum of 90 lb/cu ft (1450 kg/cu m) when determined according to AASHTO T 99 (Method C).
- b) The organic content shall be less than ten percent determined according to AASHTO T 194 (Wet Combustion).
- c) Soils which demonstrate the following properties shall be restricted to the interior of the embankment and shall be covered on both the sides and top of the embankment by a minimum of 3 ft (900 mm) of soil not considered detrimental in terms of erosion potential or excess volume change.
 - 1) A grain size distribution with less than 35 percent passing the number 75 um (#200) sieve.
 - 2) A plasticity index (PI) of less than 12.
 - 3) A liquid limit (LL) in excess of 50.
- d) Reclaimed asphalt shall not be used within the ground water table or as a fill if ground water is present.
- e) The RAP used shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications". Gradation deleterious count shall not exceed 10% of total RAP and 5% of other by total weight.

CONSTRUCTION REQUIREMENTS

Samples. Embankment material shall be sampled, tested, and approved before use. The contractor shall identify embankment sources, and provide equipment as the Engineer requires, for the collection of samples from those sources. Samples will be furnished to the Geotechnical Engineer a minimum of three weeks prior to use in order that laboratory tests for approval and compaction can be performed. Embankment material placement cannot begin until tests are completed and approval given.

Placing Material. In addition to Article 202.03, broken concrete, reclaimed asphalt with no expansive aggregate, or uncontaminated dirt and sand generated from construction or demolition activities shall be placed in 6 inches (150 mm) lifts and disked with the underlying lift until a uniform homogenous material is formed. This process also applies to the overlaying lifts. The disk must have a minimum blade diameter of 24 inches (600 mm).

When embankments are to be constructed on hillsides or existing slopes that are steeper than 3H:1V, steps shall be keyed into the existing slope by stepping and benching as shown in the plans or as directed by the engineer.

Compaction. Soils classification for moisture content control will be determined by the Soils Inspector using visual field examination techniques and the IDH Textural Classification Chart.

When tested for density in place each lift shall have a maximum moisture content as follows.

- a) A maximum of 110 percent of the optimum moisture for all forms of clay soils.
- b) A maximum of 105 percent of the optimum moisture for all forms of clay loam soils.

Stability. The requirement for embankment stability in Article 205.04 will be measured with a Dynamic Cone Penetrometer (DCP) according to the test method in the IDOT Geotechnical Manual. The penetration rate must be equal or less than 1.5 inches (38 mm) per blow.

Basis of Payment. This work will not be paid separately but will be considered as included in the various items of excavation.

GROUND TIRE RUBBER (GTR) MODIFIED ASPHALT BINDER (D-1)

Effective: June 26, 2006

Revised: January 1, 2013

Add the following to the end of article 1032.05 of the Standard Specifications:

“(c) Ground Tire Rubber (GTR) Modified Asphalt Binder. A quantity of 10.0 to 14.0 percent GTR (Note 1) shall be blended by dry unit weight with a PG 64-28 to make a GTR 70-28 or a PG 58-28 to make a GTR 64-28. The base PG 64-28 and PG 58-28 asphalt binders shall meet the requirements of Article 1032.05(a). Compatible polymers may be added during production. The GTR modified asphalt binder shall meet the requirements of the following table.

| Test | Asphalt Grade GTR 70-28 | Asphalt Grade GTR 64-28 |
|--|----------------------------|----------------------------|
| Flash Point (C.O.C.), AASHTO T 48, °F (°C), min. | 450 (232) | 450 (232) |
| Rotational Viscosity, AASHTO T 316 @ 275 °F (135 °C), Poises, Pa·s, max. | 30 (3) | 30 (3) |
| Softening Point, AASHTO T 53, °F (°C), min. | 135 (57) | 130 (54) |
| Elastic Recovery, ASTM D 6084, Procedure A (sieve waived) @ 77 °F, (25 °C), aged, ss, 100 mm elongation, 5 cm/min., cut immediately, %, min. | 65 | 65 |

Note 1. GTR shall be produced from processing automobile and/or light truck tires by the ambient grinding method. GTR shall not exceed 1/16 in. (2 mm) in any dimension and shall contain no free metal particles or other materials. A mineral powder (such as talc) meeting the requirements of AASHTO M 17 may be added, up to a maximum of four percent by weight of GTR to reduce sticking and caking of the GTR particles. When tested in accordance with Illinois modified AASHTO T 27, a 50 g sample of the GTR shall conform to the following gradation requirements:

| Sieve Size | Percent Passing |
|------------------|-----------------|
| No. 16 (1.18 mm) | 100 |
| No. 30 (600 μm) | 95 ± 5 |
| No. 50 (300 μm) | > 20 |

Add the following to the end of Note 1. of article 1030.03 of the Standard Specifications:

“A dedicated storage tank for the Ground Tire Rubber (GTR) modified asphalt binder shall be provided. This tank must be capable of providing continuous mechanical mixing throughout by continuous agitation and recirculation of the asphalt binder to provide a uniform mixture. The tank shall be heated and capable of maintaining the temperature of the asphalt binder at 300 °F to 350 °F (149 °C to 177 °C). The asphalt binder metering systems of dryer drum plants shall be calibrated with the actual GTR modified asphalt binder material with an accuracy of ± 0.40 percent.”

Revise 1030.02(c) of the Standard Specifications to read:

“(c) RAP Materials (Note 3)1031”

Add the following note to 1030.02 of the Standard Specifications:

Note 3. When using reclaimed asphalt pavement and/or reclaimed asphalt shingles, the maximum asphalt binder replacement percentage shall be according to the most recent special provision for recycled materials.

HEAT OF HYDRATION CONTROL FOR CONCRETE STRUCTURES (D-1)

Effective: November 1, 2013

Article 1020.15 shall not apply.

HMA MIXTURE DESIGN REQUIREMENTS (D-1)

Effective: January 1, 2013

Revised: November 1, 2013

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, the mixture and test strip will not be paid for and the mixture shall be removed at the Contractor’s expense. An additional test strip and 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, the mixture shall be removed. Removal will be paid in accordance to Article 109.04 of the Standard Specifications. This initial mixture and test strip will be paid for at the contract unit prices. The additional mixture will be paid for at the contract unit price, and any additional test strips will be paid for at one half the unit price of each test strip.”

1) Design Composition and Volumetric Requirements

Revise the following table in Article 1030.01 of the Standard Specifications to read.

| | |
|-----------|--|
| High ESAL | IL-25.0 binder; IL-19.0 binder; IL-12.5 surface; IL-9.5 surface; IL-4.75, SMA |
|-----------|--|

Revise the following table in Article 1030.04(a)(1):

“(1) High ESAL Mixtures. The Job Mix Formula (JMF) shall fall within the following limits.

| High ESAL, MIXTURE COMPOSITION (% PASSING) ^{1/} | | | | | | | | | | | | | | |
|--|------------|------------------|------------|------------------|------------|------------------|-----------|------------------|------------|-----------------|------------------------------|-------------------|-----------------------------|-------------------|
| Sieve Size | IL-25.0 mm | | IL-19.0 mm | | IL-12.5 mm | | IL-9.5 mm | | IL-4.75 mm | | SMA ^{4/} IL-12.5 mm | | SMA ^{4/} IL-9.5 mm | |
| | Min | max | min | max | min | max | min | max | min | max | min | max | min | max |
| 1 1/2 in (37.5 mm) | | 100 | | | | | | | | | | | | |
| 1 in. (25 mm) | 90 | 100 | | 100 | | | | | | | | | | |
| 3/4 in. (19 mm) | | 90 | 82 | 100 | | 100 | | | | | | 100 | | |
| 1/2 in. (12.5 mm) | 45 | 75 | 50 | 85 | 90 | 100 | | 100 | | 100 | 80 | 100 | | 100 |
| 3/8 in. (9.5 mm) | | | | | | 89 | 90 | 100 | | 100 | | 65 | 90 | 100 |
| #4 (4.75 mm) | 24 | 42 ^{2/} | 24 | 50 ^{2/} | 28 | 65 | 32 | 69 | 90 | 100 | 20 | 30 | 36 | 50 |
| #8 (2.36 mm) | 16 | 31 | 20 | 36 | 28 | 48 ^{3/} | 32 | 52 ^{3/} | 70 | 90 | 16 | 24 ^{5/} | 16 | 32 |
| #16 (1.18 mm) | 10 | 22 | 10 | 25 | 10 | 32 | 10 | 32 | 50 | 65 | | | | |
| #30 (600 μm) | | | | | | | | | | | 12 | 16 | 12 | 18 |
| #50 (300 μm) | 4 | 12 | 4 | 12 | 4 | 15 | 4 | 15 | 15 | 30 | | | | |
| #100 (150 μm) | 3 | 9 | 3 | 9 | 3 | 10 | 3 | 10 | 10 | 18 | | | | |
| #200 (75 μm) | 3 | 6 | 3 | 6 | 4 | 6 | 4 | 6 | 7 | 9 ^{6/} | 7.0 | 9.0 ^{6/} | 7.5 | 9.5 ^{6/} |
| Ratio Dust/Asphalt Binder | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.5 | | 1.5 |

- 1/ Based on percent of total aggregate weight.
- 2/ The mixture composition shall not exceed 40 percent passing the #4 (4.75 mm) sieve for binder courses with Ndesign ≥ 90.
- 3/ The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with Ndesign ≥ 90.
- 4/ The maximum percent passing the 20 μm sieve shall be ≤ 3 percent.
- 5/ When establishing the Adjusted Job Mix Formula (AJMF) the #8 (2.36mm) sieve shall not be adjusted above 24 percent.
- 6/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer.”

Delete Article 1030.04(a)(4) of the Standard Specifications.

Revise Article 1030.04(b)(1) of the Standard Specifications to read.

“(1) High ESAL Mixtures. The target value for the air voids of the HMA shall be 4.0 percent and for IL-4.75 it shall be 3.5 percent at the design number of gyrations. The VMA and VFA of the HMA design shall be based on the nominal maximum size of the aggregate in the mix, and shall conform to the following requirements.

| 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-12.5 | IL-9.5 | IL-4.75 ^{1/} | |
| 50 | 12.0 | 13.0 | 14.0 | 15.0 | 18.5 | 65 – 78 ^{2/} |
| 70 | | | | | 65 - 75 | |
| 90 | | | | | | |
| 105 | | | | | | |

1/ Maximum Draindown for IL-4.75 shall be 0.3%

2/ VFA for IL-4.75 shall be 72-85%”

Delete Article 1030.04(b) (4) of the Standard Specifications.

Revise table in Article 1030.04(b)(5) as follows:

“(5) SMA Mixtures.

| Volumetric Requirements SMA ^{1/} | | | |
|--|------------------------------|--|--|
| Ndesign | Design Air Voids Target % | Voids in the Mineral Aggregate (VMA), % min. | Voids Filled with Asphalt (VFA), % |
| 80 ^{4/} | 3.5 | 17 ^{2/} | 75 - 83 |
| | | 16 ^{3/} | |

1/ Maximum Draindown shall be 0.3%.

2/ Applies when specific gravity of coarse aggregate is ≥ 2.760 .

3/ Applies when specific gravity of coarse aggregate is < 2.760 .

4/ For surface course, coarse aggregate shall be Class B Quality; the coarse aggregate can be crushed steel slag, crystalline crushed stone or crushed sandstone.*

For binder course, coarse aggregate shall be crushed stone (dolomite), crushed gravel, crystalline crushed stone, or crushed sandstone.*

*Blending of different types of aggregate will not be permitted.

2) Design Verification and Production

Description. The following states 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.

When the options of Warm Mix Asphalt, Reclaimed Asphalt Shingles, or Reclaimed Asphalt Pavement are used by the Contractor, the Hamburg Wheel and tensile strength requirements in this special provision will be superseded by the special provisions for Warm Mix Asphalt and/or by the District special provision for Reclaimed Asphalt Pavement and Reclaimed Asphalt Shingles as applicable.

Mix Design Testing. 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 (IL mod AASHTO T-324) and the Tensile Strength Test (IL mod 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 the necessary changes to the mix and resubmit compacted specimens to the Department for verification. If the mix fails again, the mix design will be rejected.

All new and renewal mix designs will be required to be tested, prior to submittal for Department verification meeting the following requirements:

(1)Hamburg Wheel Test criteria.

| Asphalt Binder Grade | # Repetitions | Max Rut Depth (mm) |
|-----------------------|---------------|--------------------|
| PG 70 -XX (or higher) | 20,000 | 12.5 |
| PG 64 -XX (or lower) | 10,000 | 12.5 |

Note: For SMA Designs (N-80) the maximum rut depth is 6.0 mm at 20,000 repetitions.
 For IL 4.75mm Designs (N-50) the maximum rut depth is 9.0mm at 15,000 repetitions.

(2) Tensile Strength Criteria. The minimum allowable conditioned tensile strength shall be 415 kPa (60 psi) 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 1380 kPa (200 psi).”

Production Testing.

Revise first paragraph of Article 1030.06(a) to read:

“(a) High ESAL and IL-4.75 Mixtures. For each contract, a 300 ton (275 metric tons) test strip, except for IL -4.75 it will be 400 ton (363 metric ton), 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”.”

Delete second paragraph of Article 1030.06 (a).

Revise first sentence in fourth paragraph of Article 1030.06 (a) to read:

“Before constructing the test strip, target values shall be determined by applying gradation correction factors to the JMF when applicable.”

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).

Add the following to Article 1030.06 of the Standard Specifications:

“(c) Hamburg Wheel Test. All HMA mixtures shall be sampled within the first 500 tons (450 metric tons) on the first day of production or during start up with a split reserved for the Department. The mix sample shall be tested according to the Illinois Modified AASHTO T 324 and shall meet the requirements specified herein. Mix production shall not exceed 1500 tons (1350 metric tons) or one day’s production, whichever comes first, until the testing is completed and the mixture is found to be in conformance. The requirement to cease mix production may be waived if the plant produced mixture demonstrates conformance prior to start of mix production for a contract.

The Department may conduct additional Hamburg Wheel Tests on production material as determined by the Engineer. If the mixture fails to meet the Hamburg Wheel criteria, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria”

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 are being met. No additional mixture shall be produced until the Engineer receives passing Hamburg Wheel tests.

Basis of Payment. Revise the seventh paragraph of Article 406.14 of the Standard Specifications to read:

“For all 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.

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 QUALITY CONTROL FOR PERFORMANCE (BMPR)

Effective: January 1, 2012

Revised: December 1, 2013

Description. This special provision describes the procedures for production, placement and payment of hot-mix asphalt (HMA). This work shall be according to the Standard Specifications except as modified herein. This special provision shall apply to HMA mixtures as listed in the following table.

| | |
|--------------|--|
| Mixture/Use: | |
| Location: | |
| | |
| Mixture/Use: | |
| Location: | |
| | |
| Mixture/Use: | |
| Location: | |

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), 2nd Paragraph (Temperature requirements)
 - 406.06 (e), 3rd Paragraph (Pavers speed requirements)
 - 406.07 (Compaction)
 - 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), 3rd paragraph (Before start-up...)
 - 1030.06(a), 7th paragraph (After an acceptable...)
 - 1030.06(a), 8th paragraph (If a mixture...)
 - 1030.06(a), 9th 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 subplot 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 subplot, they shall be included in the previous subplot.
 - If three or more Density Intervals remain, they shall be considered a subplot.
- (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 (G_{mm}) will be based on the running average of four Department test results. Initial G_{mm} will be based on the average of the first four test results. If less than four G_{mm} results are available, use an average of all available Department G_{mm} 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 subplot |
| Asphalt Binder Content | | |
| Dust/AC Ratio | | |
| Field VMA | | |
| Voids | G_{mb} | |
| | G_{mm} | |

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.

| Test Parameter | Limits of Precision |
|-----------------|---------------------|
| 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% ^{1/} |
| Voids | | 2.0 – 6.0% |
| Density: | IL-9.5, IL-12.5, IL-19.0, IL-25.0, IL-4.75, IL-9.5FG ^{3/} | 90.0 – 98.0% |
| | SMA | 92.0 – 98.0% |
| Dust / AC Ratio | | 0.4 – 1.6 ^{2/} |

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^{1/}

| 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.

SLIPFORM PAVING (D-1)

Effective: November 1, 2014

Revise Article 1020.04 Table 1, Note (5) of Standard Specifications to read:

“The slump range for slipform construction shall be 1/2 to 1 1/2 in. and the air content range shall be 5.5 to 8.0 percent.”

Revise Article 1020.04 Table 1, Metric Note (5) of Standard Specifications to read:

“The slump range for slipform construction shall be 13 to 40 mm and the air content range shall be 5.5 to 8.0 percent.”

RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (D-1)

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 resulting from cold milling or crushing an existing hot-mix asphalt (HMA) pavement. RAP will be considered processed FRAP after completion of both crushing and screening to size. 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 90 percent passing the #4 (4.75 mm) sieve . RAS 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. Additional processed RAP (FRAP) shall be stockpiled in a separate working pile, as designated in the QC Plan, and only added to the sealed stockpile when test results for the working pile are complete and are found to meet tolerances specified herein for the original sealed FRAP stockpile. Stockpiles shall be sufficiently separated to prevent intermingling at the base. All stockpiles (including unprocessed RAP and FRAP) shall be identified by signs indicating the type as listed below (i.e. "Non- Quality, FRAP -#4 or Type 2 RAS", etc...).

(1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, Superpave HMA (High and Low ESAL) or equivalent 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 processed prior to testing and sized into 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 in the coarse fraction shall pass the maximum sieve size specified for the mix the FRAP will be used in.

(2) Restricted FRAP (B quality) stockpiles shall consist of RAP from Class I, Superpave (High ESAL), or HMA (High ESAL). If approved by the Engineer, the aggregate from a maximum 3.0 inch single combined pass of surface/binder milling will be classified as B quality. All millings from this application will be processed into FRAP as described previously.

- (3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, Superpave HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate RAP shall be processed (FRAP) prior to testing. Conglomerate RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (4) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from HMA shoulders, bituminous stabilized subbases or Superpave (Low ESAL)/HMA (Low ESAL) IL-19.0L binder mixture. The coarse aggregate in this RAP may be crushed or round but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (5) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

RAP or FRAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, joint sealants, plant cleanout 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 be sufficiently separated to prevent intermingling at the base. Each stockpile shall be signed indicating what type of RAS is present.

However, a RAS source may submit a written request to the Department for approval to blend mechanically a specified ratio of type 1 RAS with type 2 RAS. The source will not be permitted to change the ratio of the blend without the Department prior written approval. The Engineer's written approval will be required, to mechanically blend RAS with any fine aggregate produced under the AGCS, up to an equal weight of RAS, to improve workability. The fine aggregate shall be "B Quality" or better from an approved Aggregate Gradation Control System source. The fine aggregate shall be one that is approved for use in the HMA mixture and 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. FRAP and RAS testing shall be according to the following.

- (a) FRAP Testing. When used in HMA, the FRAP shall be sampled and tested either during processing or after stockpiling. It shall also be sampled during HMA production.
- (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) Incoming Material. For testing as incoming material, washed extraction samples shall be run at a minimum frequency of one sample per 2000 tons (1800 metric tons) or once per week, whichever comes first.
 - (3) 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.

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

- (b) RAS Testing. RAS shall be sampled and tested during stockpiling according to Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources". The Contractor shall also sample as incoming material at the HMA plant.
- (1) During Stockpiling. Washed extraction and testing for unacceptable materials shall be run 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 1000 tons (900 metric tons) thereafter. A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). Once a ≤ 1000 ton (900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS shall be 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.

- (2) Incoming Material. For testing as incoming material at the HMA plant, washed extraction shall be run at the minimum frequency of one sample per 250 tons (227 metric tons). A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). The incoming material test results shall meet the tolerances specified herein.

The Contractor shall obtain and make available all test results from start of the initial stockpile sampled and tested at the shingle processing facility in accordance with the facility's QC Plan.

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

1031.04 Evaluation of Tests. Evaluation of tests results shall be according to the following.

- (a) Evaluation of FRAP Test Results. All test results shall be compiled to include asphalt binder content, gradation and, when applicable (for slag), G_{mm} . A five test average of results from the original pile will be used in the mix designs. Individual extraction test results run thereafter, shall be compared to the average used for the mix design, and will be accepted if within the tolerances listed below.

| Parameter | FRAP |
|-----------------|----------------------|
| No. 4 (4.75 mm) | ± 6 % |
| No. 8 (2.36 mm) | ± 5 % |
| No. 30 (600 μm) | ± 5 % |
| No. 200 (75 μm) | ± 2.0 % |
| Asphalt Binder | ± 0.3 % |
| G_{mm} | ± 0.03 ^{1/} |

- 1/ For stockpile with slag or steel slag present as determined in the current Manual of Test Procedures Appendix B 21, "Determination of Reclaimed Asphalt Pavement Aggregate Bulk Specific Gravity".

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the FRAP stockpile shall not be used in Hot-Mix Asphalt unless the FRAP representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

The Contractor shall maintain a representative moving average of five tests to be used for Hot-Mix Asphalt production.

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)" or Illinois Modified AASHTO T-164-11, Test Method A.

- (b) Evaluation of RAS 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. A five test average of results from the original pile will be used in the mix designs. Individual test results run thereafter, when compared to the average used for the mix design, 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) | ± 2.5 % |
| Asphalt Binder Content | ± 2.0 % |

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the RAS shall not be used in Hot-Mix Asphalt unless the RAS representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

- (c) Quality Assurance by the Engineer. The Engineer may witness the sampling and splitting conduct assurance tests on split samples taken by the Contractor for quality control testing a minimum of once a month.

The overall testing frequency will be performed over the entire range of Contractor samples for asphalt binder content and gradation. The Engineer may select any or all split samples for assurance testing. The test results will be made available to the Contractor as soon as they become available.

The Engineer will notify the Contractor of observed deficiencies.

Differences between the Contractor's and the Engineer's split sample test results will be considered acceptable if within the following limits.

| Test Parameter | Acceptable Limits of Precision | |
|--------------------------|--------------------------------|------|
| | FRAP | RAS |
| % Passing: ^{1/} | | |
| 1 / 2 in. | 5.0% | |
| No. 4 | 5.0% | |
| No. 8 | 3.0% | 4.0% |
| No. 30 | 2.0% | 3.0% |
| No. 200 | 2.2% | 2.5% |
| Asphalt Binder Content | 0.3% | 1.0% |
| G _{mm} | 0.030 | |

1/ Based on washed extraction.

In the event comparisons are outside the above acceptable limits of precision, the Engineer will immediately investigate.

- (d) Acceptance by the Engineer. Acceptable of the material will be based on the validation of the Contractor's quality control by the assurance process.

1031.05 Quality Designation of Aggregate in RAP and 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. Fractionated RAP 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. The fine aggregate portion of the fractionated RAP shall not be used in any HMA mixtures that require a minimum of "B" quality aggregate or better, until the coarse aggregate fraction has been determined to be acceptable thru a MicroDeval Testing.

1031.06 Use of FRAP and/or RAS in HMA. The use of FRAP and/or RAS shall be a Contractor's option when constructing HMA in all contracts.

- (a) FRAP. The use of FRAP in HMA shall be as follows.

- (1) Coarse Aggregate Size (after extraction). The coarse aggregate in all FRAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.
- (2) Steel Slag Stockpiles. FRAP stockpiles containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in HMA (High ESAL and Low ESAL) mixtures regardless of lift or mix type.
- (3) Use in HMA Surface Mixtures (High and Low ESAL). FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall have coarse aggregate that is Class B quality or better. FRAP shall be considered equivalent to limestone for frictional considerations unless produced/screened to minus 3/8 inch.
- (4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP in which the coarse aggregate is Class C quality or better.
- (5) Use in Shoulders and Subbase. FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be FRAP, Restricted FRAP, conglomerate, or conglomerate DQ.

- (b) RAS. RAS meeting Type 1 or Type 2 requirements will be permitted in all HMA applications as specified herein.

- (c) FRAP and/or RAS Usage Limits. Type 1 or Type 2 RAS may be used alone or in conjunction with FRAP in HMA mixtures up to a maximum of 5.0% by weight of the total mix.

When FRAP is used alone or FRAP is used in conjunction with RAS, the percent of virgin asphalt binder replacement (ABR) shall not exceed the amounts indicated in the table below for a given N Design.

Max Asphalt Binder Replacement for FRAP with RAS Combination

| HMA Mixtures ^{1/ 2/} | Maximum % ABR | | |
|-------------------------------|------------------------|---------|--------------------------------|
| | Binder/Leveling Binder | Surface | Polymer Modified ^{3/} |
| Ndesign | | | |
| 30L | 50 | 40 | 10 |
| 50 | 40 | 35 | 10 |
| 70 | 40 | 30 | 10 |
| 90 | 40 | 30 | 10 ^{4/} |
| 4.75 mm N-50 | | | 30 |
| SMA N-80 | | | 20 |

- 1/ For HMA "All Other" (shoulder and stabilized subbase) N-30, the percent asphalt binder replacement shall not exceed 50% of the total asphalt binder in the mixture.
- 2/ When the binder replacement exceeds 15 percent for all mixes, except for SMA and IL-4.75, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent binder replacement using a virgin asphalt binder grade of PG64-22 will be reduced to a PG58-28). When constructing full depth HMA and the ABR is less than 15 percent, the required virgin asphalt binder grade shall be PG64-28.
- 3/ When the ABR for SMA or IL-4.75 is 15 percent or less, the required virgin asphalt binder shall be SBS PG76-22 and the elastic recovery shall be a minimum of 80. When the ABR for SMA or IL-4.75 exceeds 15%, the virgin asphalt binder grade shall be SBS PG70-28 and the elastic recovery shall be a minimum of 80.
- 4/ For polymerized surface mix used for overlays, with up to 10 percent ABR, an SBS PG70-22 will be required. However if used in full depth HMA, an SBS PG70-28 will be required.

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) FRAP and/or RAS. FRAP and /or RAS mix designs shall be submitted for verification. If additional FRAP or RAS stockpiles are tested and found to be within tolerance, as defined under "Evaluation of Tests" herein, and meet all requirements herein, the additional FRAP or RAS stockpiles may be used in the original 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 FRAP and/or RAS shall be as follows.

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 RAS and FRAP 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 during mix production, corrective actions fail to maintain FRAP, RAS or QC/QA test results within control tolerances or the requirements listed herein the Contractor shall cease production of the mixture containing FRAP or RAS and conduct an investigation that may require a new mix design.

- (a) 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 ± 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.
- (b) HMA Plant Requirements. HMA plants utilizing 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 RAS and FRAP 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 RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.
 - h. Aggregate RAS and FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAS and FRAP are printed in wet condition.)
 - i. When producing mixtures with FRAP and/or RAS, a positive dust control system shall be utilized.
 - j. Accumulated mixture tonnage.
 - k. Dust Removed (accumulated to the nearest 0.1 ton)
- (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).
 - f. RAS and FRAP weight to the nearest pound (kilogram).
 - g. Virgin asphalt binder weight to the nearest pound (kilogram).
 - h. Residual asphalt binder in the RAS and FRAP 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 or FRAP in aggregate surface course and aggregate shoulders shall be as follows.

- (a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except "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. (37.5mm) sieve. The RAP material shall be reasonably well graded from coarse to fine. RAP material that is gap-graded, FRAP, or single sized will not be accepted for use as Aggregate Surface Course and Aggregate Shoulders."

ENGINEER'S FIELD OFFICE TYPE A (SPECIAL)

Effective: December 1, 2011

Revised: May 1, 2013

Revise the first paragraph of Article 670.02 to read:

670.02 Engineer's Field Office Type A (Special). Type A (Special) field offices shall have a ceiling height of not less than 7 feet and a floor space of not less than 3000 square feet with a minimum of two separate offices. The office shall also have a separate storage room capable of being locked for the storage of the nuclear measuring devices. The office shall be provided with sufficient heat, natural and artificial light, and air conditioning. Doors and windows shall be equipped with locks approved by the Engineer.

Revise the first sentence of the second paragraph of Article 670.02 to read:

An electronic security system that will respond to any breach of exterior doors and windows with an on-site alarm shall be provided.

Revise the last sentence of the third paragraph of Article 670.02 to read:

Adequate all-weather parking space shall be available to accommodate a minimum of twelve vehicles.

Revise the fifth paragraph of Article 670.02 to read:

Sanitary facilities shall include hot and cold potable running water, lavatory and toilet as an integral part of the office where available. Solid waste disposal consisting of seven waste baskets and an outside trash container of sufficient size to accommodate a weekly provided pick-up service. A weekly cleaning service for the office shall be provided.

Revise subparagraph (a) of Article 670.02 to read:

- (a) Twelve desks with minimum working surface 42 inch x 30 inch each and twelve non-folding chairs with upholstered seats and backs.

Revise the first sentence of subparagraph (c) of Article 670.02 to read:

- (c) Two four-post drafting tables with minimum top size of 37-½ inch x 48 inch.

Revise subparagraph (d) of Article 670.02 to read:

- (d) Eight free standing four-drawer legal size file cabinets with lock and an underwriters' laboratories insulated file device 350 degrees one hour rating.

Revise subparagraph (e) of Article 670.02 to read:

- (e) Twenty folding chairs and two conference tables with minimum top size of 44 inch x 96 inch.

Revise subparagraph (h) of Article 670.02 to read:

- (h) Three electric desk type tape printing calculator and two pocket scientific notation calculators with a 1000 hour battery life or with a portable recharger.

Revise subparagraph (i)(2) of Article 670.02 to read:

- (i)(2) Telephones lines. Five separate telephone lines including one line for the fax machine, and two lines for the exclusive use of the Engineer. All telephone lines shall include long distance service and all labor and materials necessary to install the phone lines at the locations directed by the Engineer. The TELCOM company shall configure ROLL/HUNT features as specified by the engineer.

Revise subparagraph (j) of Article 670.02 to read:

- (j) Two plain paper network multi-function printer/copier/scanner machines capable of reproducing prints up to 11 inch x 17 inch within automatic feed tray capable of sorting 30 sheets of paper. Letter size and 11 inch x 17 inch paper shall be provided. The contractor shall provide the multi-function machines with IT support for setup and maintenance.

Revise subparagraph (k) of Article 670.02 to read:

- (k) One plain paper fax machine including maintenance and supplies.

Revise subparagraph (l) of Article 670.02 to read:

- (l) Six four-line telephones, with touch tone, where available, and two digital answering machines, for exclusive use by the Engineer.

Revise subparagraph (m) of Article 670.02 to read:

- (m) One electric water cooler dispenser including water service.

Add the following subparagraphs to Article 670.02:

- (s) One 4 foot x 6 foot chalkboard or dry erase board.
- (t) One 4 foot x 6 foot framed cork board.

Add the following to Article 670.07 Basis of Payment.

The building or buildings, fully equipped, will be paid for at the contract unit price per calendar month or fraction thereof for ENGINEER'S FIELD OFFICE, TYPE A (SPECIAL).

ERECTION OF COMPLEX STEEL STRUCTURES

Effective: April 11, 2007

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.

Erector Qualifications: The Erection Contractor shall be certified as an Advanced Certified steel Erector (ACSE), by the AISC Certification Program. The Erection Contractor shall submit evidence of current ACSE certification to the Engineer with the submittal of the proposed erection plan.

Erection Plan: The Erection Contractor shall retain the services of an engineering firm, pre-qualified with the Illinois Department of Transportation in the Complex Structures category, for the completion of a project-specific erection plan. An Illinois Licensed Structural Engineer, employed by this pre-qualified engineering firm, 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

GRANULAR BACKFILL FOR STRUCTURES

Description

The work shall consist of placing and compacting GRANULAR BACKFILL FOR STRUCTURES as indicated on the contract plans.

The work shall be in accordance with Articles 202, 204, and 205 of the Standard Specifications except as modified herein.

Material

All material shall be approved by the Engineer and the Tollway Materials Engineer prior to use. The Contractor shall perform laboratory tests and submit test reports to demonstrate the material meets the following requirements. Test reports shall be submitted for approval a minimum of 14 days prior to use. The Engineer or the Tollway Materials Engineer may collect independent soil samples and perform confirmatory tests prior to approval. The material shall be according to Section 1004 of the Standard Specifications and the following:

- a) Gradation. The Material shall be CA-6 gradation crushed coarse aggregate.
- b) Internal Friction Angle. The effective internal friction angle shall be a minimum 34 degrees according to AASHTO T 236 on samples compacted to 95 percent density according to Illinois Modified AASHTO T 99. The AASHTO T 296 test with pore pressure measurement may be used in lieu of AASHTO T 236.
- c) Test Frequency. Prior to start of construction, the Contractor shall provide internal friction angle test results to show the select fill material meets the specification requirement. This test shall be no more than 12 months old. In addition, a sample of material will be obtained for testing and approval by the Department. Thereafter, the minimum frequency of sampling and testing will be no less than one per 40,000 cu yd (30,600 cu m) of material.

Construction Requirements

Placing Material. When embankments are to be constructed on hillsides or existing slopes that are steeper than 3H:1V, steps shall be keyed into the existing slope by stepping and benching as shown in the plans or as directed by the engineer.

Compaction. Compaction shall be in accordance with Article 205.06 of the Standard Specifications.

Stability. The requirement for stability in Article 205.04 of the Standard Specifications will be measured with a Dynamic Cone Penetrometer (DCP) according to the test method in the IDOT Geotechnical Manual. The penetration rate must be equal or less than 1.5 inches (38mm) per blow.

Method of Measurement

GRANULAR BACKFILL FOR STRUCTURES will be measured as cubic yards compacted in place and the volume computed 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 GRANULAR BACKFILL FOR STRUCTURES. All work associated to test, furnish, and compact the material is included under this pay item.

CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE)

Effective: September 5, 2008

Revised: May 9, 2013

This work shall consist of furnishing the design, shop drawings, materials, post anchorage, and construction of noise abatement walls (noise walls) according to this Special Provision, the Contract Plans and/or as directed by the Engineer.

General. The noise abatement wall shall consist of precast concrete panels spanning between vertical posts supported by concrete foundations (ground mounted) or attached to/supported by another structure (structure mounted) as shown on the plans. The panels shall be of essentially uniform thickness over the full height of the wall without obvious steel or concrete stiffening elements for vehicular collision loading. The posts shall be steel for consistency of appearance, unless otherwise specified on the Contract Plans. The design, material, fabrication and construction shall comply with this Special Provision and the requirements specified by the noise wall supplier selected by the Contractor for use on this project. The walls shall have no omissions or gap except as detailed in the Contract Plans.

The Contractor shall verify the locations for the proposed ground mounted wall for conflicts and inform the Engineer in writing of any conflicts before realigning or redesigning the wall. The Contractor shall realign or redesign the wall to avoid any conflicts.

Post spacing shall avoid existing and proposed underground utilities and storm sewers.

Wall components shall be fabricated and erected to produce a precast concrete reflective noise wall system at the locations shown in the contract plans or as specified. The noise reduction system shall satisfy the acoustical requirements as shown on the Contract Plans. Substitution of alternate materials for precast concrete panels will not be allowed.

All appurtenances behind, in front of, under, over, mounted upon, or passing through the noise wall, such as drainage structures, fire hydrant access, highway signage, emergency access, utilities, and storm sewers shall be accounted for in design of the wall.

The noise walls shall be designed and constructed to extend to the minimum lines, grades and dimensions of the wall envelope, with no omissions or gaps, as shown on the Contract Plans and as directed by the Engineer.

Submittals. A complete wall and foundation design submittal, including design calculations for wall panels, posts, foundations, and all connections and shop drawings shall be submitted to the Department for review and approval no later than 90 days prior to beginning construction of the wall. The time required for the preparation and review of these submittals shall be charged to the allowable contract time. Delays caused by untimely submittals or insufficient data will not be considered justifications for any time extensions. No additional compensation will be made for any additional material, equipment or other items found necessary to comply with the project specifications as a result of the Engineer's review. The Contractor shall prepare (4) sets of complete design calculations for wall panels, posts, foundations, and all connections and (4) sets of shop drawings shall be submitted to the Department for review and approval no later than 90 days prior to beginning construction of the wall. All submittals shall be prepared and sealed by an Illinois Licensed Structural Engineer.

Submittals shall include all structural calculations, details, dimensions, quantities and cross sections necessary for the construction of the noise abatement walls including but not be limited to:

- (1) Structural design calculations for all structural members, foundations, and connections prepared and sealed by an Illinois Licensed Structural Engineer, and prints of shop drawings on reduced size 11 x 17 in. (275 x 425 mm) sheets in accordance with Article 503.05 and 1042.03(b) of the Standard Specifications.
- (2) A plan view of the wall indicating the stations and offsets required to locate the drilled shaft foundations. The proposed foundation diameter(s) and spacing(s) shall be indicated with all changes to the horizontal alignment shown. Each panel and post shall be numbered and any changes in type or size shall be noted. The centerline of any utilities passing under the wall and locations of expansion joints, access doors, lighting, signing, curb cuts, and drainage structures shall also be shown.
- (3) An elevation view of the wall, indicating the elevations of the top of the posts and panels as well as the elevations of the bottom of the panels, tops of the shaft foundations, all steps in wall system, the finished grade line, and vertical clearances to existing utilities and storm sewers. Each post size and length, access doors, panel type and size, and foundation depth shall be designated.

- (4) A typical cross section(s) that shows the panel, post, foundation or bridge parapet, and the elevation relationship between existing ground conditions and the finished grade as well as slopes adjacent to the wall.
- (5) All general notes required for constructing the wall.
- (6) All details for the steps in the bottom of panels shall be shown. The bottom of the panels shall be located at or below the theoretical bottom of panel line shown on the contract plans. The theoretical bottom of panel line is assumed to be 8 in (200 mm) below the finished grade line at front face of the wall for ground mounted noise walls and at the top of the structure for structure mounted noise walls, unless otherwise shown on the Contract Plans.
- (7) Tops of the panels and posts shall extend to or above the Approximate Top of Noise Abatement Panel line shown on the Contract Plans except that interior height step locations may vary from what is shown by ± 4 feet horizontally to accommodate post spacing established by Contractor. All panel tops shall be cast and placed horizontally with any changes in elevation accomplished by stepping adjacent panel sections at posts. Steps shall be 2 ft (600 mm) in height.
- (8) All panel types shall be detailed. The details shall show panel weight, orientation, and all dimensions necessary to cast and/or fabricate each type of panel, the reinforcing steel, and location of post or foundation connection hardware as well as lifting devices embedded in the panels. The Noise Reduction Coefficient (NRC) of each panel of the absorptive face shall be noted.
- (9) All post types shall be detailed. The details shall show post weight, orientation, all dimensions necessary to cast and/or fabricate each type of post, the reinforcing steel, connecting plates, and anchorage details as well as lifting devices embedded in or attached to the posts. Post spacing for walls shall be limited to a distance that does not over stress the supporting structure.
- (10) Details of wall panels with appurtenances attached to or passing through the wall, as shown on the contract plans, such as utilities, access doors, framed openings, drainage structures, signs, etc. shall be shown. Any modifications to the design or location of these appurtenances to accommodate a particular system shall also be submitted.
- (11) All architectural panel treatment, including color, texture and form liner patterns shall be shown. All joints shall be placed horizontal or vertical and shall be aligned with adjacent panels.
- (12) The details for the connection between panels and posts as well as their connection to the foundation, independent beam, retaining wall, bridge parapet, and/or structure shall be shown. Foundation details, including details showing the dimensions, reinforcement, and post anchorage system for the drilled shaft foundations, shall be shown.

- (13) Testing, certifications and reports from independent laboratories documenting that the panel's sound Transmission Loss (TL) and NRC for the panel satisfy the criteria shown in the design criteria section of this specification. The testing results for the flame spread, smoke density and freeze-thaw/salt scaling requirements described in the materials section of this specification shall also be submitted. If unable to document panel and post deflections by calculations, reports of full scale testing shall be submitted to demonstrate the deflection criteria have been met.
- (14) Manufacturer recommended installation requirements, a sequence of construction and a detailed bill of materials shall be included.
- (15) The color of the wall panels and support posts is to match the ISTHA's Sandstone color HC-157, as produced by H&C Concrete Coatings, www.hc-concrete.com or approved equal.

The Contractor shall deliver to the Tollway attention Jeff Schneberg (630-241-6800/3939), a 2 ft x 2 ft (600 mm x 600 mm) sample of the colors, textures and patterns proposed for use on the project for approval. The Tollway will inform IDOT (Rick Wanner) when sample is ready for review.

The samples shall be made at the same plant manufacturing the product for the noise walls under this contract, and shall be representative of those which will be tested per this specification. Once the color sample is approved, a batch shall be designated by batch number and date and will remain the standard for the entire project.

The Contractor shall submit site access plans showing access and limits of the work areas for the installation of the wall. Any required traffic controls shall be according to the requirements in the special provision for the contract.

The initial wall and foundation design submittal shall include three (3) sets of shop drawings and calculations. One set of drawings will be returned to the Contractor with any corrections indicated. The Contractor shall do no work or ordering of materials for the structure until the Engineer has approved the submittal.

Design Criteria. The wall system shall be designed to withstand wind pressure, applied perpendicular to the panels in either direction, according to the AASHTO LRFD Bridge Design Specifications, Chapter 15, for the Design of Sound Barriers. The noise wall design life shall be 75 years unless otherwise noted. The wall system shall be designed to withstand active earth pressure and live load surcharge at locations where walls retain unbalanced soil loads, where indicated on the plans. Crashworthy walls shall be designed to withstand vehicular collision loads at locations indicated on the plans in accordance with Section 15.8.4 of The 2012 AASHTO LRFD Bridge Design Specifications with 2013 Interims. When a horizontal panel joint is within the zone of assumed vertical distribution depth for the collision load, both the panels above and below the joint shall be designed to resist the full collision load. The contractor shall be responsible for the structural adequacy of the panels, posts, foundations and connections as well as overall wall overturning stability. Prestressed and/or post tensioned panel concepts will not be permitted.

The unfactored design wind loading shall be as specified on the plans but not less than 35 psf (1.7 kPa) when located on bridges, retaining walls or traffic barrier structures. This loading can be reduced to 30 psf (1.4 kPa) for ground mounted walls where it is located more than a distance equal to the height of the wall away from the edge of pavement. When a sound wall is also required to support earth pressures, the unfactored design active earth pressure shall be based on an equivalent fluid pressure of 55 pounds per cubic foot (880 kg/m³) and a minimum live load surcharge pressure of 2 feet (600 mm) of earth pressure. The earth pressure fill height shall be defined by the proposed grade line elevation and the theoretical bottom of panel line. For crashworthy structure mounted noise walls, the dead weight of the noise wall panels, posts, and attachments shall not exceed 163 psf (3.4 kPa) of wall face area.

For ground mounted walls, the post shall be connected to the foundation by either embedding the post inside the concrete foundation shaft or by attaching the post to the foundation shaft with base plates and anchor bolts as required by design. Embedded posts shall extend into the shaft for the full length of the shaft. For base plate and anchor bolt connections, the minimum number of anchor bolts per post shall be 4-1 in. (M24) diameter bolts, with a minimum embedment depth of 18 in. (450 mm). The concrete shaft for base plate and anchor bolt type connections shall be reinforced. For embedded post type connections, the shaft need not be reinforced unless the minimum clear cover over the post exceeds 10 inches (250 mm). When reinforcement of the concrete shaft is required as specified above, the reinforcement shall consist of a minimum of 8-#5 (#15) vertical bars symmetrically placed and tied with #3 (#10) ties at 6 in. (150 mm) centers. An additional tie shall be provided at the top and bottom of the foundation. As an alternative to the ties, a #3 (#10) spiral at a 6 in. (150 mm) pitch with an additional 1 1/2 turns at the top and bottom of the foundation or an equivalent 4 x 4 – W12.3 x W7.4 welded wire fabric may be substituted.

The material and construction of the foundations (drilled shafts) for ground mounted noise walls shall be according to Section 516 of the Standard Specifications.

The shaft foundation dimensions shall be determined according to AASHTO LRFD Specifications. Soil borings from prior soil investigations when available are shown in the plans. The design shall utilize load and resistance factors as specified, and shall account for the effects of a sloping ground surface and water table indicated on the plans. The following parameters should be assumed for the foundation design unless otherwise shown on the plans:

| | |
|-------------------------|----------------------------------|
| Effective unit weight | 70 pcf (1120 kg/m ³) |
| Internal friction angle | 30 degrees |
| Cohesion intercept | 0 ksf (0 kg/m ³) |

The post spacing for structure mounted noise walls shall be less than or equal to 15 feet (4.6 m) center to center. Post spacing for ground mounted noise walls shall be essentially the same as used for structure mounted noise walls for consistency of appearance. Except where otherwise indicated on the plans, the maximum post spacing for ground mounted noise walls shall be as specified in the Contractor's approved design, but in no case greater than 15 feet center to center.

The maximum allowable panel deflection shall be no more than the panel length (L) divided by 240 ($L/240$). The vertical posts shall have a maximum deflection of ($H/180$) relative to the top of the foundation, where H is the height of the post above the foundation. When meeting the deflection limits cannot be demonstrated by calculations, a lateral load test and report shall be submitted to the Engineer indicating that the above noted design lateral loads can be applied to the panels and/or posts without exceeding noted deflection tolerance. The test shall apply lateral loads to the panel simulating uniform wind pressure, and earth pressure when present.

The design shall account for the presence of all appurtenances mounted on or passing through the wall such as drainage structures, existing or proposed utilities, emergency access doors and other items.

Corrugations, ribs or battens on the panel must be oriented vertically when erected. The panels shall be designed to prevent entrapment and ponding of water. The walls shall not have openings allowing the perching or nesting of birds or the collection of dirt, debris or water.

The walls shall not have handholds or grips promoting climbing of the walls. Any bolts or fasteners used to connect material to the supporting panel, posts, or foundations shall be recessed or embedded in concrete, hidden from view and weather exposure. No external mechanical fastening devices such as frames or clips shall be used for these connections.

The noise abatement material shall be designed to achieve a sound TL equal to or greater than 20 dB in all one-third octave bands from 100 hertz to 5000 hertz, inclusive, when tested according to ASTM E-90. The sound absorptive material shall have a minimum NRC as indicated on the plans. For the side of the walls specified as reflective, no minimum NRC is required.

Table 1

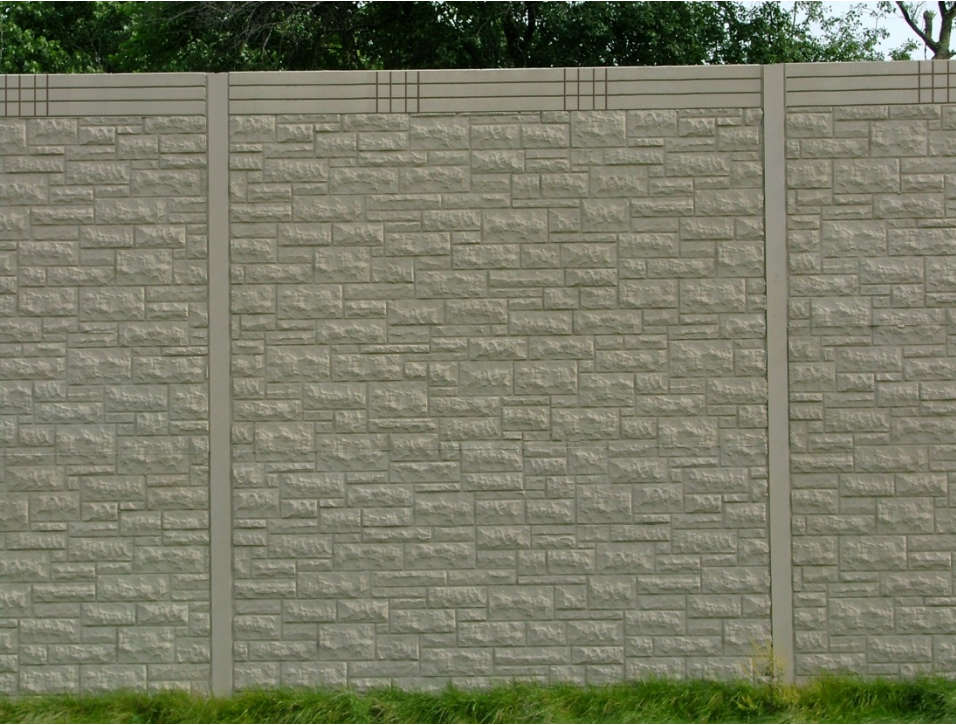
| Noise Wall No. | From | To | Noise Wall Side | NRC* | Comments |
|--------------------|-----------------------------|--------------------------|-----------------|------------|----------|
| NAW 01 | Ramp G6 Sta 618+20.54 | Ramp G6 Sta 618+86.63 | Expressway | Reflective | |
| | Ramp G6 Sta 618+20.54 | Ramp G6 Sta 621+86.63 | Residential | Reflective | |
| SN 022- 0551 | Ramp G6 Sta 624+32.80 | Ramp G6 Sta 632+22.89 | Expressway | Reflective | |
| | Ramp G6 Sta 624+32.80 | Ramp G6 Sta 632+22.89 | Residential | Reflective | |
| | | | | | |
| | | | | | |
| | | | | | |

* For the side of the wall specified as reflective, no minimum NRC is required.

The NRC shall be determined per ASTM E795, tested according to ASTM C423 (mounting type A). The ratio of noise absorptive material on the panel surface to total wall area (including posts) shall be greater than 90 percent. NRC testing shall be performed on coated samples, utilizing the stain that will be applied for color.

Aesthetics. The Noise Abatement Wall shall be designed with due consideration of the aesthetic environment in which the wall is located.

The aesthetics of both front and back surfaces for each type of Noise Abatement Wall option shall be as shown in the following sample noise abatement wall pattern and color.

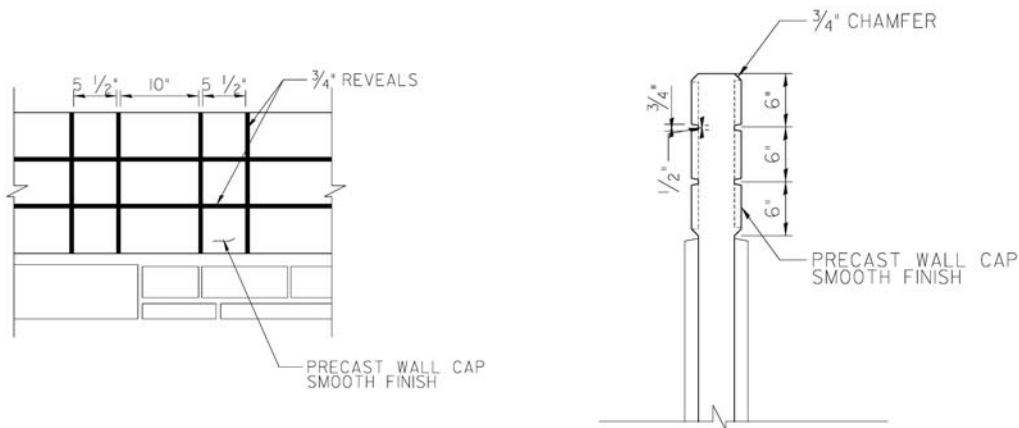


Typical Panel Elevation

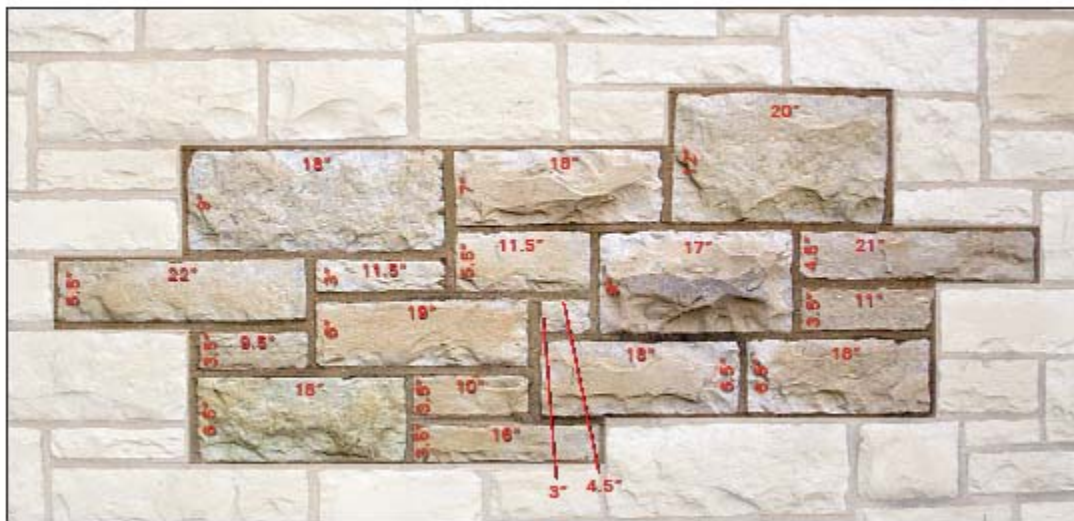
The image created by the vertical reveal pattern on the cap shall be spaced to achieve a consistent and repeating rhythm throughout each continuous length of wall, as shown above. When the panel length is less than that of a typical panel, only one vertical reveal image may be applied to that panel to maintain the desired appearance. If the length of the panel is less than 1/3 of a typical panel, no vertical reveal image may be required on the panel cap.

Noise wall end panels should step in 2-foot increments beginning at ends of designated limits. Panel stepping should reflect grading with a desired minimum end panel height of 8 feet.

CIP/Precast Concrete Noise Abatement Wall Cap Detail



CIP/Precast Concrete Noise Abatement Wall Random Ashlar Limestone formliner pattern



The Precast Concrete Panels shall be constructed with a square cut random ashlar rusticated limestone surface with a 1 1/2" relief. The aesthetic surface treatment shall be accomplished by the use of form liners for precast panels as specified. The panels shall not contain patched or unpatched tie holes. The concrete pours of the panels shall be coordinate to prevent visible differences between individual pours or batches.

The forms shall be constructed so that the completed concrete structures conform to shape, lines and dimensions of the members of approved pattern. The forms shall be properly braced or tied together to maintain position of the shape. The formwork shall have strength and stability to ensure finished concrete dimensions within the tolerances specified herein.

The following form liner supplier and patterns have been pre-approved for Form Liner Textured Surface:

| Manufacturer | Pattern Number | Pattern Name |
|---|----------------|----------------|
| Custom Rock Formliner 2020 West 7th Street St. Paul, MN 55116 Phone: (651) 699-1345 www.customrock.com | 12020 | Tollway Ashlar |
| | | |

The Contractor shall select a form liner pattern from above or propose an equivalent form liner supplier for review and approval.

The form ties shall be made of either metal or fiberglass. Metal ties, which result in a portion of the tie permanently embedded in the concrete, shall be designed to separate at least one inch back from finished surface, leaving only a neat hole that can be plugged with patching material. Contractor shall submit the type of form ties to the engineer, for approval prior to use in this work.

A concrete stain shall be provided and applied to replicate stone with sealer as required. The base stain color is to match the Sandstone color HC-157 as produced by H & C Concrete Coatings, www.hc-concrete.com.

The surface stain for precast concrete support columns, if utilized, shall match the color of the precast concrete panel.

For crashworthy walls or walls that could otherwise be impacted by vehicles, asperity shall be considered for the form liner, finish and supports conforming with NCHRP Report 554, "Guidelines for Aesthetic Barrier Design".

Asperities are depressions in the surface of the wall with variable geometric configurations which can be placed within one of three categories: perpendicular, rounded, or angled surface interruptions. The asperity dimensions may present more resistance to an impacting vehicle sliding on the wall surface creating a potential for snagging to the vehicle.

Submittals:

Precast Concrete and Formliner

1. Product technical data including:
 - a. Manufacturer's mix design and material certifications for aggregate and cement type used to precast wall panels and posts.
 - b. Manufacturer's installation instructions.
2. A 4'x4' sample of the concrete form liner pattern and texture of each type, including special shapes to show range of colors, texture, finishes, and dimensions. Submit a separate set of sample precast concrete panels approximately 2'x2' from the stain manufacturer to establish application procedures, color and appearance to the Tollway's Landscape Architect (Jeff Schneberg) for review and approval. Tollway to inform IDOT (Rick Wanner) when sample is ready for review.
3. Manufacturer's certification that precast panels are to be furnished meet or exceed the specifications.
4. Qualifications of testing lab and technician.
5. Test results for all concrete testing.

System Supplier Certification

The Contractor shall submit the following documents for the IDOT/Tollway's review, within 30 days after the issuance of the Notice to Proceed:

1. Specifications for all materials, including trade names of the products along with the name and address of the each Supplier, and the name of the System Manufacturer's contact person.
 2. Specifications regarding geotechnical assessment, installation procedures, and sequence of construction.
 3. Color photographs, preferably 8 inch x 10 inch size, depicting the surface treatments and colors available for the noise abatement wall.
 4. A list of representative projects performed by this Contractor, including key client contacts.
 5. The anticipated reaction forces the noise abatement wall system applies to the supporting structure.
 6. The Contractor shall provide documentation to the Illinois Tollway/IDOT that provides technical data confirming that sunlight and headlight glare reflected from the proposed Noise Abatement Wall material does not cause glare to the Tollway/IDOT motorists, or those that may be on an adjacent roadway system.

7. The Contractor shall provide documentation confirming that the material that will be used to construct the proposed Noise Abatement Wall is resistant to ultra violet deterioration and degradation within the minimum service life.
8. The Tollway reserves the right to request a physical sample of the Noise Abatement Wall proposed by the Contractor prior to the issuance of the Notice to Proceed.

Access Door. All access doors shall be designed to fit within the design of the noise wall as shown on the plans. Doors shall be complete with hardware and locking devices. Each door shall provide a 3 ft (0.9 m) wide by 7 ft (2.1 m) high minimum clear access opening. Both door jambs shall be securely fastened to anchored posts. Front and back face of the installed door shall be flush with the faces of the noise wall.

Perimeter and internal door frame shall consist of welded hot dip galvanized steel channels and miscellaneous angle stiffeners and plates designed to provide support for noise wall panels to match the noise wall material as specified in this special provision. Infill noise panel geometry and color shall match the adjacent noise wall panels. Noise wall panels shall be fastened to steel frames as per panel manufacturer's recommendations. The door, jambs, head, hinges, door appurtenances, and adjacent ground mounted posts shall be designed to withstand the wind pressure of 25 psf (122 kg/m²) with the door in fully open and fully closed positions and support the weight of the door and a 300 lb (136 kg) vertical load on the non-hinged side of the door. Provide steel bracing as required. Door bottom shall be equipped with drainage holes to avoid accumulation of trapped moisture.

Door jambs and head section shall be hot dip galvanized steel. Door hinges shall be barrel type, edge mount, extra heavy-duty, hot dip galvanized steel or stainless steel. The hinges shall be designed to support the weight of door assembly, wind loads on the open door, and a 300 lb (136 kg) vertical load on the non-hinged side of the door.

Door pulls shall be provided on both sides of access door(s). Door locking hardware shall be hasp-type to be used with a padlock and shall be located according to local fire department or ComEd requirements as applicable. A solid steel Knox-Box shall be provided and mounted near the hasp location at the steel post on the locking hardware side of door. The Knox-box for emergency access doors shall be according to local fire department requirements. The Knox-box for access door at the Dynamic Messaging Sign (DMS) shall be according to ComEd requirements.

Doors shall be equipped with lifting bolts or beams as required for safe lifting of door units.

Access doors at fire hydrants shall be Halliday Product Series S1R2424 or an approved equal. The doors shall be modified to include a slam lock to keep the door flush with the Noise Abatement Wall while closed. The doors and frames shall be painted to match the noise abatement panels. The doors and frames shall be painted per Section 506. Galvanized surfaces shall be prepared in accordance with the paint manufacturer's recommendations. Center doors within the panel width and place no closer than 12" from a panel edge.

Materials. Noise wall materials shall conform to the supplier's standards, AASHTO Specifications for noise walls and the following:

- (a) Reinforcement bars shall satisfy ASTM A706 Grade 60 (400). Welded wire fabric shall be according to AASHTO M 55. All reinforcement shall be epoxy coated.
- (b) Anchor bolts shall conform to ASTM F1554 Grade 55 or 105 and shall be galvanized per AASHTO M232.
- (c) The precast elements shall be according to applicable portions of Section 1042 of the Standard Specifications. Coarse Aggregate shall meet the requirements of Article 1004.02(f) of the Standard Specifications. Concrete shall be Class PC with a minimum compressive strength of 4500psi at 28 days. Dry cast concrete element will not be permitted.
- (d) For sound absorptive panels, the manufacturer shall provide test information from an independent lab that the panels meet specified durability requirements. This information shall be either a freeze/thaw test according to AASHTO T 161 (ASTM C 666) Procedure A or B, or it shall be a salt scaling test according to ASTM C 672.

For the freeze/thaw test, a minimum of three specimens shall have been tested. The maximum weight (mass) loss after 300 cycles shall be 7.0 percent. The panel shall have no cracks, delamination (applies to composite material panel), or other excessive physical distress upon completion of the test.

For the salt scaling test, the test method shall be modified as outlined in Appendix D of the Guidelines for Evaluating the Performance of Highway Sound Barriers by the Highway Innovative Technology Evaluation Center (HITEC), A Service Center of the Civil Engineering Research Foundation, CERF REPORT: HITEC 96-04, Product 24 (October 1996). The maximum weight (mass) loss after 50 cycles using a 3 percent sodium chloride solution shall be 0.2 psf (0.1 kg/m²).

The panel shall have no cracks, delamination (applies to composite material panel), or other excessive physical distress upon completion of the test.

For sound reflective panels, evidence of durability by one of the two previously mentioned tests is required for all materials except Class PC concrete.

- (e) The manufacturer for the noise abatement wall shall provide their quality control plan for testing the product, and test results shall be provided upon request by the Engineer. Manufacturers on the Approved List of Certified Precast Concrete Producers who are approved for noise abatement walls will be considered in compliance with this requirement.

- (f) Steel plates and posts shall conform to AASHTO M 270 (M 270 M) Grade 36 (250) or 50 (345). All portions of the post shall be galvanized according to AASHTO M111 and ASTM A385. Steel bolts, nuts, washers and anchor bolts shall be galvanized according to AASHTO M232. The portion of steel posts exposed to view shall then be painted with a paint system in the shop according to the special provision for Surface Preparation and Painting of Galvanized Steel Traffic Structures. The cost for Surface Preparation and Painting of Galvanized Steel Traffic Structures shall be included in the contract unit price for NOISE ABATEMENT WALL of the type required. The color of the paint system shall closely match the panels.
- (g) Lifting inserts cast into the panels shall be hot dipped galvanized.
- (h) Non shrink grout shall be according to Section 1024 of the Standard Specifications.
- (i) The default color of both sides of the panels, posts and other visible elements shall be a light brown earth tone unless specified otherwise on the Contract Plans. Colors shall be achieved through the use of integral pigments or stains, which are in compliance with the environmental regulation of the State of Illinois. Components manufactured with integral pigment shall be tested and certified in conformance to ASTM C979. Stains shall be non film forming, penetrating stains. Stains shall be applied to concrete at the cured age of the manufacturer's recommendation. Surface preparation and application shall be according to manufacturer written recommendations. Coloring of concrete elements shall be accomplished using a single component water based, sound absorptive, penetrating, architectural stain that is weather resistant. Stains and/or pigments must be applied at the manufacturing plant; application in the field on site will not be allowed. The final color shall be consistent with the quality and appearance of the approved sample.
- (j) The finish pattern of the precast panels shall be as specified on the Contract Plans.
- (k) With the exception of the steel and Portland cement concrete elements of the wall, all materials shall be tested for flame spread and smoke density developed according to ASTM E84. The material must exhibit a flame-spread index less than 10 and a smoke density developed value of 10 or less.

Fabrication. All precast units shall be manufactured according to Section 504 of the Standard Specifications, and the following requirements and tolerances with respect to the dimensions shown on the approved shop drawings.

- (a) The minimum reinforcement bar cover shall be 1 1/2 in (40 mm).
- (b) All reinforcement shall be epoxy coated
- (c) Panel dimensions shall be within 1/4 in (6 mm).
- (d) All hardware embedded in panels or posts shall be within 1/4 in (6 mm).
- (e) Angular distortion with regard to panel squareness, defined as the difference between the two diagonals, shall not exceed 1/2 in (13 mm).
- (f) Surface defects on formed surfaces measured on a length of 5 ft (1.5 m) shall not be more than 0.10 in (2.5 mm).

- (g) Posts shall be installed plumb to within 1/2 in (13 mm) of vertical for every 15 ft (5 m) of height and to within 1/2 in (13 mm) of the station and offset indicated on the approved shop drawings.
- (h) Drilled shaft foundations shall be placed within 2 in (50 mm) of the station and offset indicated on the approved shop drawings.
- (i) Panel reinforcement and lifting devices shall be set in place to the dimension and tolerances shown on the plans and these special provisions prior to casting.

The date of manufacture, the production lot number, and the piece-mark shall be clearly noted on each panel.

Absorptive material shall be permanently attached to their supporting elements and no external mechanical fastening systems such as frames or clips shall be used. Any bolts or fasteners used shall be recessed or embedded below the surface.

Any chipping, cracks, honeycomb, or other defects, to be allowed, shall be within acceptable standards for precast concrete products according to Section 1042 of the Standard Specifications and as determined by the Engineer.

Construction. The Contractor shall obtain technical assistance from the supplier during wall erection to demonstrate proper construction procedures and shall include any costs related to this technical assistance in the contract unit price for Noise Abatement Wall of the type specified. The instructions provided by the wall supplier are guidelines and do not relieve the contractor of the responsibility to adhere to contract requirements.

It is recommended that all bottom panels be installed for a length of wall prior to placing middle or top panels. After bottom panels are in-place, finish grading can be accomplished with heavy equipment by reaching over the in-place panels.

Site excavations and/or fill construction shall be completed to plan elevations and profiles prior to the start of wall foundation construction. All underground utility or drainage structure installation shall be completed prior to foundation installation. The ground elevations as shown on the plans and the approved noise wall shop drawings shall be verified by the contractor and discrepancies corrected prior to material fabrication. Buried utilities shall be marked to verify proper clearance from the drilled foundations. The Contractor should consider overhead obstruction such as electric and telephone wires prior to wall erection.

For ground mounted walls, if the soils encountered during drilling of the foundations do not satisfy the design strengths shown on the Contract Plans, the Engineer shall be notified to evaluate the required foundation modifications. The shaft foundation will normally require additional length, which may be paid separately under Article 104.03 of the Standard Specifications. All drilled shaft excavations shall be filled with concrete within 6 hours of their initiation. The concrete for the drilled shaft foundations shall be placed against undisturbed, in-place soils. The concrete at the top of the shaft shall be shaped to provide the panels on each side of the post adequate bearing area and correct elevation per the approved shop drawings.

The panels shall be delivered to the project site in full truckload quantities. They may be off-loaded individually or by forklift with a solid steel plate spanning between the forks providing uniform, fully distributed bearing support to the underside of the panels. Units shall be shipped, handled and stored in such a manner as to minimize the danger of staining, chipping, spalling, development of cracks, fractures, and excessive bending stresses. Panels shall be stored and shipped in bundles, on edge. Any touch up and repair is at the Contractor's expense and shall be carried out according to the manufacturer's recommendations.

Method of Measurement. Noise abatement walls will be measured in square feet (square meters) from the wall envelope, defined by the Approximate Top of Noise Abatement Panel line to the theoretical bottom of panel line for the length of the wall (ground mounted or structure mounted) as shown on the Contract Plans.

Drilled shafts, concrete, reinforcement bars and other elements for supporting the ground mounted noise abatement walls will not be measured for payment.

Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for NOISE ABATEMENT WALL, GROUND MOUNTED and/or NOISE ABATEMENT WALL, STRUCTURE MOUNTED while Crashworthy walls shall be paid for as NOISE ABATEMENT WALL, STRUCTURE MOUNTED, SPECIAL

This payment shall be considered to be full compensation for all work including the development of shop drawings, working drawings and design calculations; coordination with the MSE wall designer/supplier; supplemental soil exploration and testing program; physical sample (mock-up); removal and disposal of the mock-up; furnishing and installing foundations including portland cement concrete and epoxy coated steel reinforcing; removal of unsuitable material; excavation; backfilling with porous granular backfill above and adjacent to foundations; furnishing and installing bolts, hardware, fasteners, access doors and maintenance doors; testing; samples; casting, storing, transporting and erecting Noise Abatement Wall panels and posts; forming, pouring and curing concrete; providing aesthetic surface treatment including form liners if required and staining for approved colors; sealer; temporary structures; technical assistance from the manufacturer; preparing and furnishing warranties; and furnishing all labor, equipment, tools and incidentals necessary to complete the Work as specified.

PERFORMANCE BASED ACRYLIC NOISE ABATEMENT WALL

Description

This work shall consist of the complete design, submittal of Shop and Working Drawings, furnishing all materials, testing, warranties, labor, and equipment necessary to construct Acrylic Noise Abatement Wall, (suggested product: Acrylite Soundstop TL-4 System), at the locations and to the heights and lengths shown in the Contract Plans, in accordance with the Special Provisions, the Standard Specifications, and the Contractor's accepted Shop and Working Drawings.

The specification provides minimum performance criteria for quality, reliability, longevity and safety. Refer to Special Provision CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE) for general requirements and standards.

Referenced Standards

In addition to the referenced standards identified in the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Recurring Special Provisions (latest edition), and the Special Provision for CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE) , the following specifications and standards shall also apply to the fabrication and construction of Noise Abatement Walls comprised of Acrylic.

1. Standards promulgated by the ASTM International (ASTM), including the following items:
 - a. A 36 – Standard Specification for Carbon Structural Steel
 - b. A 123 – Standard Specification for Zinc (Hot Dipped Galvanized) on Iron and Steel Products
 - c. A 153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
 - d. F1554 Standard Specification for Anchor Bolts, Steel, 35, 55, and 105-ksi Yield Strength
A325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
 - e. A 500 – Standard Specification for Steel Structural Tubing in Rounds and Shapes
 - f. A 709 – Standard Specification for Structural Steel Shapes, Plates and Bars
 - g. D 635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position
 - h. D 638 – Test Method for Tensile Properties of Plastic
 - i. D 648 – Test Method for Deflection Temperature of Plastics Under Flexural Load
 - j. D 785 – Test Method for Rockwell Hardness of Plastics and Electrical Insulating Materials
 - k. D 790 – Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
 - l. D 1003 – Test Method for Haze and Luminous Transmittance of Transparent Plastics
 - m. D 1929 – Test Method for Ignition Properties of Plastics
 - n. D 2843 – Test Method for the Density of Smoke from the Burning or Decomposition of Plastics
 - o. E 90 – Standard Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions
 - p. E 413 - Standard Classification for Determination of Sound Transmission Class
 - q. G 155 – Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials
 - r. NCHRP Report 350 – National Cooperative Highway Research Program report relating to roadside safety criteria and validation.

2. Other Standards

- a. ANSI Standard Z97.1 – Glazing Materials Used in Buildings, Safety Performance Specifications and Methods of Test
- b. EN 1794-1 – Test for Resistance Against Damage by Stone Projectiles
- c. EN 1794-2 – Test Method for Resistance to Brushwood Fire
- d. EN 1794-2 – Secondary Safety: Danger from Falling Debris
- e. C33, Specification for Concrete Aggregates
- f. C90, Specification for Load-Bearing Concrete Masonry Units
- g. C216, Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)
- h. C1314, Standard Test Methods for Compressive Strength of Masonry Prisms
- i. ASTM C270 Mortar for Unit Masonry
- j. ASTM C476 Grout for Masonry
- k. ASTM C144 Aggregate for Masonry Mortar
- l. ASTM C404 Aggregate for Masonry Grout

General Requirements

In addition to the general requirements identified in the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Recurring Special Provisions (latest edition), and the Special Provision for CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE) , the following specifications and standards shall also apply to the fabrication and construction of Noise Abatement Walls comprised of Acrylic.

- The manufacturer shall provide facilities and qualified personnel to perform all specification tests and maintain an acceptable quality control program. An acceptable program is one that meets the requirements of QS 9000 and ISO 9002. To ensure total quality, all manufacturers shall provide proof of compliance for the production of noise barrier panels.
- Manufacturers must have a minimum 5 year history of producing transparent noise barrier assemblies for highway noise barriers.

Suggested Manufacturer: Armtec, 1-866-801-0999, 1-860-873-1737,
eric.humphries@armtec.com

Design Requirements

In addition to the Special Provision for CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE), the following design requirements shall also apply to the fabrication and construction of Noise Abatement Walls comprised of Acrylic.

Collision Requirements

The System shall be capable of sustaining one collision up to the level specified in the NCHRP 350, Test Level 4 without being separated from the bridge railing or structure to which it has been properly attached under this specification.

Certification of Crash Worthiness

The vendor shall provide a letter from a certified crash test facility indicating a physical crash test was conducted on the system and recommending acceptance by the Federal Highway Administration (FHWA.) The vendor shall be able to provide visual evidence of such crash test upon the request of the Department.

Structural Design Requirements

In addition to the structural requirements identified in the Illinois Department of Transportation Standard Specifications, Supplemental Specifications (latest edition), and the Tollway Reoccurring Special Provision for CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE), the following structural requirements shall also apply to the fabrication and construction of Noise Abatement Walls comprised of Acrylic.

Attachment Requirements

The system shall be attached to the south side parapet of structure 022-0549 including the parapet along the approach pavements.

Attachment to the bridge and approach pavement parapets and ground mounted supports will be designed by the noise barrier manufacturer for all specified design loads as specified herein, according to the AASHTO Guide Specification for Structural Design of Sound Barriers, 2002 and the current edition of the AASHTO LRFD Bridge Design Specifications. This includes the noise barrier self-weight (dead load) transverse wind of 35 psf and AASHTO TL-4 vehicular impact load.

Support post and attachment points shall be spaced a maximum of 8 feet apart.

Attachment shall be by cast-in-place anchor bolt assemblies with anchor bolts conforming to ASTM F1554 galvanized according to ASTM A153... Cast in place anchor assemblies shall be designed per the applicable requirements of the AASHTO LRFD bridge design specifications. Anchor assemblies shall be located and designed to miss standard parapet reinforcement shown on the bridge plans. Additional local reinforcement as may be necessary to develop the required strength of cast-in-place anchor assemblies shall be provided by the wall manufacturer and placement clearly indicated on the submitted shop drawings around embedded anchor assemblies.

Aesthetics

The Noise Abatement Wall shall be designed with due consideration of the aesthetic environment in which the wall is located.

The aesthetics of both front and back surfaces for each type of Noise Abatement Wall option shall be as follows:

Acrylic Noise Wall Color

The noise barrier panel shall be **Smoky Brown** color. Steel components shall be hot dipped galvanized finish, unless otherwise specified.



Noise Wall Steel Members Color

Noise Wall posts, cross railing bars, splices, anchor devices, bent, base plates, and accessories shall be painted following the appropriate paint system requirements indicated for structural steel Section 506. The coating system for structural steel and metal surfaces shall be an IDOT prequalified manufacturer such as Carboline or Tnemec.

Color for all handrails and railing components shall closely match H&C Stain 157, Sandstone.

Materials

ACRYLITE® Soundstop GS CC Panels and Posts

Noise barrier panels that are installed in proximity to the travel lanes may be exposed to damage due to vehicle collision. In order to provide for the safety of the transportation system, such noise barrier panels will have the capability to contain fragments in the event that the panel is broken during the collision.

The noise barrier panel shall be secured in such a way that the fragments do not fall when they are deformed or broken.

After an impact of 53k inch pounds (6 kJ) in accordance with the test method below, those fragments that are released from the noise barrier panel shall meet the following requirements:

Pieces of test specimen that are released shall be no larger than 4.0 in² (25cm²) and shall weigh no more than 0.22 lbs (0.10 kg)

Pieces of test specimen that are released shall be no longer than 6 in (15 cm)
 Rigid pieces or the test specimen that are released shall have no angle of less than 15° and shall weigh no more than 0.22 lbs (0.10 kg)

No pieces shall weigh more than 0.88 lbs (0.40 kg)

These criteria shall only apply for one collision incident.

Performance characteristics

The noise barrier panel shall meet the performance requirements of Table 1 when tested in accordance with the associated ASTM method.

TABLE 1. Performance Requirements

| PROPERTY | REQUIREMENT | ASTM Method |
|-------------------|----------------|--------------|
| Tensile Strength | > 9,250 psi | D 638 |
| Flexural Modulus | > 445,000 psi | D 790 |
| Rockwell Hardness | > M-90 | D 785 |
| STC | 27 dBA Minimum | E 90 / E 413 |

Colorless noise barrier panel shall meet the optical requirements of Table 2.

TABLE 2. Transparent Sheet Optical Requirements

| PROPERTY | REQUIREMENT | ASTM Method |
|--------------------|-------------|-------------|
| Light Transmission | > 90% | D 1003 |
| Haze | < 1.5% | D 1003 |
| Yellowness Index | < 1 | D 1003 |

Resistance to Weathering

After exposure to outdoor weathering for a period of 10 years or accelerated weathering in accordance with ASTM G 155, cycle 1, for a period of 10,000 hours, the colorless noise barrier panel shall show no evidence of cracking or crazing and shall comply with the requirements of Table 3.

TABLE 3. Weathering Requirements

| PROPERTY | REQUIREMENT | ASTM Test Method |
|--------------------|------------------------|------------------|
| Light transmission | > 88% | D 1003 |
| Haze | < 10% | D 1003 |
| Yellowness Index | < 5 | D 1003 |
| Tensile strength | > 75% of initial value | D 638 |
| Flexural strength | > 75% of initial value | D 790 |

Flammability

The noise barrier panel shall meet the flammability requirements of Table 4 when tested in accordance with the associated test method.

Table 4. Flammability Requirements

| PROPERTY | REQUIREMENT | Test Method |
|--------------------------|--------------|-------------|
| Resistance to brush fire | Class 2 | EN 1794-2 |
| Horizontal burn rate | < 2.5 in/min | ASTM D 635 |
| Smoke density | < 50% | ASTM D 2843 |
| Self Ignition | > 650°F | ASTM D 1929 |

Structural Steel

Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Recurring Special Provisions (latest edition), and the Special Provision for CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE) , the following structural steel requirements shall also apply to the fabrication and construction of Noise Abatement Walls comprised of Acrylic.

All components, except bolts and corner cables shall be hot-dipped galvanized after fabrication in accordance with ASTM A 123. Bolts shall be galvanized in accordance with ASTM A 153.

Steel components shall conform to the following:

Bolts and washers: ASTM A 325

I beam, plate, flat stock, channel and angles: A36

Tube: A 500 Gr. B

Anchor Bolts: F1554 grade 55 minimum.

Welding

Welding materials shall be in accordance with the American Welding Society (AWS), structural welding code, D1.1. Welders will be certified in accordance with AWS D1.1.

Submittals

General

Submittals shall be in conformance with Article 105.04 of the Tollway Supplemental Specifications except as modified herein.

Acrylic

1. Shop Drawings for Posts and Panels
 - a. Product technical data including:
 - 1) Manufacturer's information on all material used to produce the acrylic noise wall.
 - b. A 4'x4' sample of the Acrylic Noise Abatement Panel and (2) Posts to show range of colors and finishes
 - c. Manufacturer's certification that Acrylic Noise Abatement Wall panels that are to be furnished meet or exceed the specifications.
 - d. Qualifications of testing lab and technician.

System Supplier Certification

Refer to the system supplier certification requirements identified in the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Recurring Special Provisions (latest edition), and the Special Provision for CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE), Supplemental Specifications (latest edition), and the Tollway Reoccurring Special Provision for PERFORMANCE BASED NOISE ABATEMENT WALL.

Design Calculations, Shop Drawings, and Working Drawings

Refer to design calculations, shop drawings, and working drawings requirements identified in the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Recurring Special Provisions (latest edition), and the Special Provision for CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE)

Test Results

In addition to the test results requirements identified in the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Recurring Special Provisions (latest edition), and the Special Provision for CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE), the following test results requirements shall also apply to the fabrication and construction of Noise Abatement Walls comprised of Acrylic.

- 1.) The noise barrier panel shall be tested by either EN 1794-2 Annex B, "Secondary Safety: Danger of Falling Debris" or the following test method.

The method of testing is to cause a heavy mass to strike normally to the center or the most sensitive point of the test specimen so that the specimen is destroyed or pushed out of the holding structure.

A pendulum shall produce the impact. The impactor shall swing on 2 wires fixed on 2 points above the structure holding the test sample as shown in Figure 2. In order to reach the impact energy of 53 kips (6.0 kJ), the height of the fall of the impactor shall be 5 ft (1.5 m), corresponding to a speed of 12.2 mph (19.5 km/h). The radius of the pendulum shall be a minimum of 13 ft (4 m).

2.) Impactor

The impactor consists of a rotational symmetrical full steel double cone with the dimensions shown in Figure A-1 and a weight of 880 lbs (400 kg).

3.) Test Specimen

The test specimen shall be assembled in the supporting structure in the way intended by the manufacturer. Elements or systems with integrated or attached restraint systems shall be tested as complete assemblies.

4.) Impact Resistance

In order to withstand impacts of stones thrown up from the road surface the noise barrier panel shall meet the requirements of EN 1794-1, Appendix C.

5.) Glazing Requirements

The noise barrier panel shall comply with the requirements of ANSI Z97.1 as a safety glazing material.

6.) Resistance to Roadside Chemicals

The noise barrier panel shall be resistant to standard de-ice chemicals such as: calcium chloride, magnesium chloride, potassium acetate, calcium/magnesium acetate and sodium acetate.

Supplier shall show documentation of the chemical resistance properties of the panels. Panels should be able to withstand direct exposure to the chemical for a period of not less than 24 hours. Panels should be exposed to the chemicals at 100 percent (undiluted) strength.

7.) Wildlife Protection

When the specified panel is transparent, the product shall provide for protection against birds inadvertently striking the panels in flight.

The Supplier shall show documentation of the effectiveness of the means for wildlife protection. This shall be a test report or testimonial from an independent authority including but not limited to a Department or Ministry of Transportation, testing facility or other entity deemed acceptable.

Samples

Refer to sample requirements identified in the Illinois Department of Transportation Standard Specifications, Supplemental Specifications (latest edition), and the Tollway Reoccurring Special Provision for PERFORMANCE BASED NOISE ABATEMENT WALL.

Warranties

Refer to warranties requirements identified in the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Recurring Special Provisions (latest edition), and the Special Provision for CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE),.

Fabrication, Construction and Erection Requirements

Refer to fabrication, construction and erection requirements identified in the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Recurring Special Provisions (latest edition), and the Special Provision for CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE).

Structural Steel

Structural steel shall be fabricated and erected in accordance with Section 505 of the Standard Specifications, the System supplier's recommendations and as approved by the Engineer.

Hardware and Fasteners

Hardware and fasteners shall be installed in accordance with the System Supplier's recommendations and as approved by the Engineer.

Excavation and Backfill

Refer to excavation and backfill requirements identified in the Illinois Department of Transportation Standard Specifications, Supplemental Specifications (latest edition), and the Tollway Reoccurring Special Provision for PERFORMANCE BASED NOISE ABATEMENT WALL.

Proposal Requirements and Determination

Refer to proposal requirements and determination requirements identified in the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Recurring Special Provisions (latest edition), and the Special Provision for CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE).

Method of measurement

This work will not be measured for payment.

Individual components of the PERFORMANCE BASED ACRYLIC NOISE ABATEMENT WALLS as described and as shown on the plans will not be measured for payment.

Basis of payment

This work completely installed and accepted as described in this Special Provision and as shown on the Contract Plans and accepted Shop and Working Drawings will be paid for at the Contract lump sum price for PERFORMANCE BASED ACRYLIC NOISE ABATEMENT WALL. This payment shall be considered to be full compensation for all work including the development of shop drawings, working drawings and design calculations; supplemental soil exploration and testing program physical sample (mock-up); removal and disposal of the mock-up; furnishing and installing foundations including portland cement concrete and epoxy coated steel reinforcing; removal of unsuitable material; excavation; backfilling with porous granular backfill above and adjacent to foundations; furnishing and installing bolts, hardware, fasteners, access doors and maintenance doors; testing; samples; casting, storing, transporting and erecting Noise Abatement Wall panels and posts; concrete masonry, brick masonry, forming, pouring and curing concrete; providing aesthetic surface treatment including form liners if required and staining for approved colors; sealer; temporary structures; technical assistance from the manufacturer; preparing and furnishing warranties; furnishing and installing access and maintenance doors; and furnishing all labor, equipment, tools and incidentals necessary to complete the Work as specified.

All components required to construct the noise abatement wall shall be considered as part of the work in the Contract lump sum price for the noise abatement wall and not be paid for separately.

Foundation soils which are shown on the drawings as unsuitable, or which are determined to be unsuitable, and directed by the Engineer to be excavated and replaced with Special Fill or Porous Granular Backfill will be measured and paid for as EARTH EXCAVATION, and either SPECIAL FILL or POROUS GRANULAR BACKFILL.

When the above pay items are required but not included in the Contract, the applicable work will be paid for in accordance with Article 109.04 of the Tollway Supplemental Specifications.

ARCHITECTURAL FORM LINER LEAF

Description: This work shall consist of concrete finishing, stains, and the construction of custom leaf detailed architectural form liners on designated surfaces, submittal of Shop and Working Drawings, furnishing all materials, shown on the Contract Plans (Plans) and in accordance with the requirements of the Plans, this Special Provision, the Standard Specifications, and the Contractor's accepted Shop and Working Drawings.

Materials: Materials shall be according to Article 503.02 of the "Standard Specifications" and the following:

Form liners for **Architectural Form Liner Leaf** for Village of Itasca shall duplicate closely the appearance of natural contoured leaf images. Each individual leaf image within the primary surface Form Liner (ashlar pattern) shall be rubbed smooth to eliminate any grid marks and form marks.

Level of detail for leaf images within the Form Liners shall include, but shall not be limited to, overall character of the leaf, stems, veining, edge detailing and separations, and general contouring of the leaf.

The molds shall not compress more than ¼ inch when concrete is poured at a rate of 10 vertical feet per hour. The molds shall be removable without causing deterioration of surface or underlying concrete.

The forms shall be constructed so that the completed concrete structures conform to the shape, lines and dimensions of the members of the approved pattern. The forms shall be properly braced or tied together to maintain position and shape. The forms shall be made sufficiently tight to prevent leakage of the mortar. The formwork shall have the strength and stability to ensure finished concrete dimensions within the tolerances specified herein.

The following form liner suppliers have been pre-approved for the respective wall system

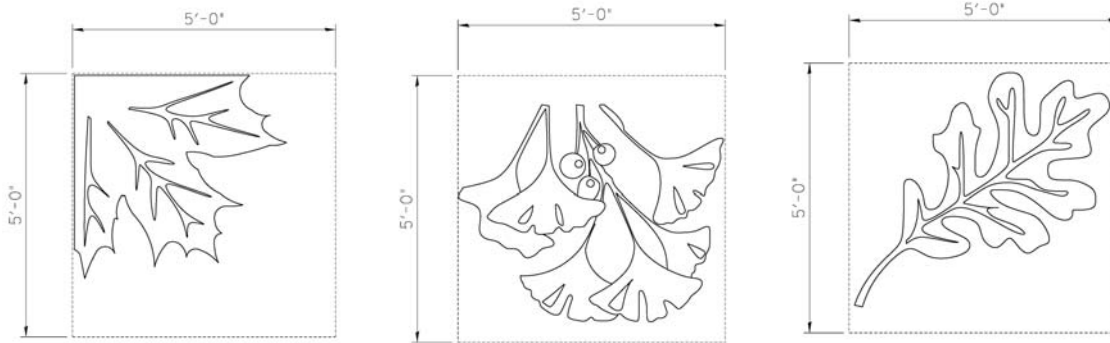
Precast Concrete Form Liners:

| Manufacturer | Pattern Number | Pattern Name |
|--|----------------|--|
| Custom Rock International 1156 Homer Street St. Paul, Minnesota 55116 (800) 637-2447 www.customrock.com | Custom | Maple Leaf, Gingko Leaves and White Oak Leaf |
| Scott System, Incorporated 10777 E. 45th Ave. Denver, CO 80239 Tel: (303) 373-2500 Fax: (303) 373-2755 Email: info@scottssystem.com | Custom | Maple Leaf, Gingko Leaves and White Oak Leaf |

Other manufacturer's products will be considered, provided sufficient information is submitted 30-days prior to use to allow the Tollway to determine that products proposed are equivalent to those named.

All manufacturers of form liners shall fabricate form liners to match the provisions listed herein and in the Plans.

Leaf Aesthetic Details:



Maple Leaf

Ginkgo Leaf

Oak Leaf

CONCRETE STAIN

The stain color for Architectural Form Liner Leaf shall match CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE) and shall be "Sandstone" (HC157) by H&C concrete staining or approved equal. The Contractor shall submit manufacturer's literature, certificates and color samples to the Engineer.

Stain shall create a surface finish that is breathable (allowing water vapor transmission), and that resists deterioration from water, acid, alkali, fungi, sunlight or weathering. Stain mix shall be water borne, low V.O.C. material, less than 1.5 lbs. /gal, and shall meet requirements for weathering resistance of 2000 hours accelerated exposure.

Materials:

Pre-approval of the form liner does not include material acceptance at the job site.

Form liners shall be according to Article 503.06(a) and the requirements detailed in this specification.

The form ties shall be made of either metal or fiberglass. Metal ties, which result in a portion of the tie permanently embedded in the concrete, shall be designed to separate at least one inch back from finished surface, leaving only a neat hole that can be plugged with patching material. Contractor shall submit the type of form ties to the Engineer, for approval prior to use in this work.

Concrete used for Architectural Form Liner Leaf shall not contain CA7 aggregate.

Submittals:

The Contractor shall submit detailed Shop and Working Drawings for the Architectural Form Liner Leaf no later than 90 days after the Notice to Proceed or no later than 90 days prior to the scheduled start of construction of the wall, whichever date is earlier. Partial and/or incomplete submittals are not allowed and will be returned "Make Corrections as Noted", or "Rejected" if submitted without prior approval of the Engineer. The Contractor shall consider in his schedule a 14 calendar day period from the date the submittal is received by the Engineer to the expected date of return with comment. This 14-day review period shall be considered with any resubmittal, and such resubmittals shall not be considered cause for an extension of time to the Contract.

For a proposed equivalent the Contractor shall submit to the Engineer one (1) specification including bonding and releasing agents, catalog cut sheet and 5' x 5' (full size) liner sample for the each leaf type of architectural form liner proposed for use on Architectural Form Liner Leaf Details on the project. Note that the this style of form liner shall be used only on surfaces designated by contract plans, on the residential side of noise abatement walls within the project limits (for Village of Itasca). The submittal shall be made no later than 14 calendar days from the date of notification to proceed with the contract. Upon receipt of the information, the Engineer, in consultation with Tollway, IDOT and representative from Village of Itasca will have 14 calendar days to approve and notify the Contractor of which style and manufacturer of form liner is to be used on the project.

Contractor shall submit to the Engineer for approval evidence of the selected subcontractor's (5) years experience making form liners similar to those required by project. Contractor shall be responsible for design of formwork and back-up of form liner for structural stability and sufficiency.

Upon receipt of notification of the style of form liners to be used or if the Contractor is proposing a form liner from the pre-approved list, he/she shall submit a proposed procedure for obtaining the custom finish. The procedure shall include (4) Sets of plans and details for the form liner pattern and dimensions, and be submitted for the Engineer's approval no later than 14 calendar days from the date of notification of approval of the style type. If such plans and details are not satisfactory to the Engineer, the Contractor shall make any changes as may be required by the Engineer, Tollway or IDOT at no additional cost.

Upon approval of the form liner plans and details, the Contractor shall provide an ARCHITECTURAL FORM LINER LEAF MOCK UP containing the form liner surface for respective wall system. 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 pattern and concrete stain to be used.

1. Locate mockup on site as directed by the Engineer.
2. The precast concrete mockup shall be a minimum 5 ft x 5 ft x 6 in. thick minimum and shall consist of (1) mock-up for each of the (3) leaf designs indicated on the plans.
3. Apply the concrete stain to the front face 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.
4. Include examples of each condition required for construction i.e. liner joints, construction joints, expansion joints, steps, corners, and special conditions due to topography or man made elements, etc.
5. 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.
6. After concrete work on mockup is completed and cured and after surface is determined to be acceptable for coloring, apply color stain system.
7. After staining/coloring is determined to be acceptable by the Tollway, construction of project may proceed, using mockup as quality standard.
8. As-Built Shop Drawings for Architectural Form Liner Leaf under IDOT jurisdiction shall be submitted with general As-Built Drawings of CONCRETE NOISE ABATEMENT WALLS (ABSORPTIVE AND REFLECTIVE) to the IDOT Department when work is complete.

General: The work shall be performed according to Article 503.06 of the "Standard Specifications" and the following:

The form liners shall be installed according to the manufacturers' recommendations to achieve the highest quality concrete appearance possible. The form liners shall withstand the concrete placement pressures without leakage, physical or visual defects.

The Contractor shall clean the form liners, removing any buildup prior to each use. The Contractor shall inspect each form for blemishes or tears and make repairs as needed following manufacturer's recommendations.

The Contractor shall install the form liners with less than ¼ inch separation between them. The molds shall be attached securely to the forms following manufacturer's recommendations. The panels shall be attached to each other with flush seams and seams filled as necessary to eliminate visible evidence of seams in the cast concrete.

The liner butt joints shall be blended into the pattern so as to eliminate visible vertical or horizontal seams and conspicuous form butt joint marks. The liner joints shall fall within pattern joints or reveals. The 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 notify the Engineer at least 48 hours prior to placing concrete. Concrete shall not be placed until the Engineer has inspected the formwork and the placement of reinforcing bars for compliance with the plans.

The Contractor shall apply the form release agent to all surfaces of the form liner which will come in contact with concrete, according to the manufacturers' recommendations.

The Contractor shall employ proper consolidation methods to ensure the highest quality finish. Internal vibration shall be achieved with a vibrator of appropriate size, the highest frequency and low to moderate amplitude. Concrete placement shall be in lifts not to exceed 1.5 feet. Internal vibrator operation shall be at appropriate intervals and depths and withdrawn slowly enough to assure a minimal amount of surface air voids and the best possible finish without causing segregation. An external form vibrator may be required to assure the proper results. The use of an external form vibrator must be approved by the form liner manufacturer and the Department. 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.

The form liners shall be stripped between 12 and 24 hours as recommended by the manufacturer. When stripping the forms the Contractor shall avoid creating defects in finished surface.

Wall ties shall be coordinated with the liner and form to achieve the least visible result. Place form ties at thinnest points of molds (high points of finished wall). Remaining holes after disengaging the protruding portion of the tie shall be filled in accordance with IDOT Standard Specification Section 503 so patch is not visible after coloring the concrete surface.

Curing methods shall be according to Article 1020.13 of the "Standard Specifications" and compatible with the desired aesthetic result. The use of curing compounds will not be allowed. Transitions between formwork, leaf panels, and primary (ashlar) wall surfaces shall be rubbed smooth to eliminate any grid marks and form marks in accordance with the Standard Specification Section.

Releasing Form Liners: Products and application procedures for form liner release agents shall be approved by the form liner manufacturer. Release agents shall not cause swelling of the form liner material or delamination of the form liner. Release agents shall not stain the concrete or react with the form liner material. Release agent shall coat form liner with a thin film. Following application of release agent, the form liner surface shall be cleaned of excess amounts of release agent using compressed air. Buildup of release agent caused by reuse of a form liner shall be removed at least every 5 uses.

Form liners shall release without leaving particles or pieces of form liner material on concrete and without pulling or breaking concrete from the textured surface. The concrete and textured surfaces exposed by removing form liners shall be protected from damage. Form stripping and related construction shall avoid creating defects in the concrete.

All concrete shall be cured in conformance with the Standard Specifications except that curing compounds will not be allowed.

Guidelines for Use of Form Liners: Form liners are being used on this project to achieve very specific architectural results. The Contractor shall not deviate from the guidelines contained herein unless authorized by the Tollway and IDOT in writing. Cover form liners to protect from oil, dirt and UV exposure. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

The contractor shall deliver the custom Form Liner molds in a clean and reusable condition to Village of Itasca for future panel fabrication. The delivery location shall be coordinated with the Resident Engineer.

Method of Measurement: Each individual Architectural Form Liner Leaf will be measured in square feet as shown on contract plans.

Basis of Payment: This work will be paid for at the contract unit price per square foot for each individual Architectural Form Liner Leaf. Required adjustments or corrections needed to address shop drawings, mockup comments and the cost of additional mockups, if required, will not be paid for separately, but shall be included in the respective NOISE ABATEMENT WALL system pay item. Drilled shafts, concrete, reinforcement bars and other elements for noise abatement walls and supporting structures will not be paid for under this item, but will be paid as specified elsewhere under their specific pay items.

FORM LINER SIMULATED LIMESTONE SURFACE AND FORM LINER MOCKUP

Description

This work shall consist of designing, developing, furnishing and installing form liners and forming concrete using reusable, high-strength urethane form liners to achieve the various concrete treatments as shown in the plans. This work also consists of providing and applying a concrete stain to the textured surface to replicate actual stone. Form lined surfaces shall include areas of wall facings, where shown in the plans. The form liner pattern used for each wall type may vary to convey a uniform appearance as indicated on the plans. This Work shall also be performed in accordance with applicable portions of Sections 503 and 504 of the Standard Specifications. The completed work in place shall match substantially in color, texture, and overall appearance walls being constructed in Tollway Contract No. I-13-4607.

Form liners shall be installed 12" below finish grade unless otherwise shown on the plans. The form liner shall match the exact size of concrete units and adhere to the provisions listed herein and in the Plans. The form liner stone module is to be integrated into the specified surfaces such that there are no joints crossing the stone modules.

Fabricator requirements

The form liner manufacturers included herein have been pre-approved to provide form liners. Other manufacturer's products will be considered, provided sufficient information is submitted 30-days prior to use to allow the Tollway to determine that products proposed are equivalent to those named. All manufacturers of form liners shall adhere to the provisions listed herein and in the Plans.

Shop drawings

Shop drawings of the concrete facing patterns shall be submitted for each area of textured concrete. Shop drawing submittals shall include:

1. Individual form liner pattern descriptions, dimensions, and sequencing of form liner sections. Include details showing typical cross sections, joints, corners, step footings, stone relief, stone size, pitch/working line, mortar joint and bed depths, joint locations, edge treatments, and any other special conditions.
2. Elevation views of the form liner panel layouts for the texture showing the full length and height of the structures including the footings with each form liner panel outlined. The arrangement of the form liner panels shall provide a continuous pattern of desired textures and colors with no interruption of the pattern made 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 for the Mockups.

Materials

Form liners shall be 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 texture shall be made from high-strength elastomeric urethane material which shall not compress more than 0.02 feet when poured at a rate of 10 vertical feet per hour. Form release agents shall be non-staining, non-residual, non-reactive and shall not contribute to the degradation of the form liner material. Forms for smooth faced surfaces shall be plastic coated or metal to provide a smooth surface free of any impression or pattern. If the contractor elects to use form ties for concrete forming, only fiberglass form ties will be permitted. Use of removable metallic form ties will not be allowed.

Store concrete stain materials in an area where temperatures will not be less than 50°F (10°C) or more than 100°F (38°C) and in accordance with OSHA and local Fire Code Requirements.

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.

Formliner mockup

The Contractor shall provide a cast concrete mockup containing the 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 pattern and concrete stain to be used.

1. Locate mockup on site as directed by the Engineer.
2. The cast-in-place mockup shall be a minimum 10 ft x 10 ft x 6 in. thick minimum and the pre-cast mock-up shall consist of a minimum of 3 modules. Size shall be varied as required to demonstrate patterning.
3. Using the same substrate and application techniques that will occur in the final structure, apply the concrete stain to the front face 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 on the retaining wall shall not proceed until jobsite mockup has been approved in writing by the Engineer.
4. Include examples of each condition required for construction i.e. liner joints, construction joints, expansion joints, steps, corners, and special conditions due to topography or man made elements, etc.
5. 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.
6. After concrete work on mockup is completed and cured and after surface is determined to be acceptable for coloring, apply color stain system.
8. After coloring is determined to be acceptable by the Tollway, construction of project may proceed, using mockup as quality standard.

Qualifications of contractor

The concrete stain applicator shall have a minimum of one (1) year demonstrated experience in applying stains. The Contractor shall submit evidence of appropriate experience, job listings, and project photographs from previous work.

Precast concrete panels

The precast concrete panels shall be furnished in the System Supplier's standard dimensions except for the following conditions:

1. Panels shall match substantially in size, color, and overall appearance those provided in Tollway Contract No. I-13-4607.
2. Panels at the bottom tier and panels at the top tier of a wall with a level top line may be cut horizontally so that they shall have an exposed face area not less than one-third the face area of the standard panel.
3. Exposed face areas of panels may be any area required to fill in at the top tier to produce a sloped and continuous (straight or curved) line at the top of the wall.

The maximum panel size shall be 50 square feet. The length to height ratio of the panel shall be greater than or equal to 1.0 but not to exceed 3.0. The minimum panel thickness shall be 5½ inches.

The panels shall be positively interlocked by means of clips, pins or continuous ship laps or tongues and grooves in the top, bottom, and sides of the panels. Panels shall be designed to conceal joints and bearing pads.

1. The following form liner manufacturers have been pre-approved to provide the listed pattern for the limestone surface form liner for use with the Precast Concrete Units.
 - a. Custom Rock International, St. Paul, MN. (Jim Rogers; 800-637-2447) # 1104-R2 (14 ¾") or # 11016 random Cut Stone (16").
 - b. Milestones Incorporated, Hudson, WI. (Paul Nasvik; 715-381-9660) MS-1018, 16" Weathered Limestone.
 - c. Architectural Polymers, New Ringgold, PA. (Rick Fasching; 610-824-3322) # 893 14" Quarry Stone or # 894 – 16" Quarry Stone.

Other manufacturer's products will be considered, provided sufficient information is submitted 30-days prior to use to allow the Tollway to determine that products proposed are equivalent to those named. A pattern "exhibit" is provided below, illustrating the appearance desired.

The appropriate number of molds and subsequent formliners shall be provided to ensure that the natural and continuous stone pattern be maintained throughout all panels, including stone coursing, mortar joint and relief.

The relief shall be 1- 5/8" average to 2" maximum.

A pattern "exhibit B" is provided below, illustrating the appearance desired.



Exhibit B- PrecastConcrete Panels Pattern

Concrete stain

Wall surface stain color shall be HC157 Sandstone by H&C concrete staining or approved equal. Anchor slab and coping surface stain color shall be HC102 Red Terrazzo Tile by H&C concrete staining or approved equal. The Contractor shall submit manufacturer's literature, certificates and color samples to the Engineer.

Stain shall create a surface finish that is breathable (allowing water vapor transmission), and that resists deterioration from water, acid, alkali, fungi, sunlight or weathering. Stain mix shall be a water borne, low V.O.C. material, less than 1.5 lbs./gal, and shall meet requirements for weathering resistance of 2000 hours accelerated exposure.

Installation

Form liners shall be installed in accordance with the manufacturer's 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. At locations where differing form liner patterns abut, such as when a cast-in-place pattern should connect to a precast concrete wall pattern, a vertical 6-inch wide smooth finish transition strip without relief shall be provided at the abutting ends of each wall to separate the two dissimilar patterns. This transition strip shall also be introduced at appropriate corner sections of all patterned wall systems.

When the top of cast-in-place, precast or gravity type retaining walls are exposed, a 12-inch high smooth finish strip without relief shall be provided along the top of the vertical wall surface. A $\frac{3}{4}$ " chamfer shall be provided on the top edges of the wall and on edges between the smooth finish strip and form liner pattern changes.

The Contractor shall coordinate concrete pours to prevent visible differences between individual pours or batches. Concrete pours shall be continuous between construction or expansion joints. Cold joints shall not occur within continuous form liner pattern fields. Wall ties shall be coordinated with the liner and form to achieve the least visible result. Liners shall be stripped between 12 and 24 hours as recommended by the manufacturer. Curing methods shall be compatible with the desired aesthetic result. Use of curing compounds will not be allowed. Concrete slump requirements shall meet the form liner manufacturer's recommendations for optimizing the concrete finish, as well as the Tollway's material specifications and special provisions.

With the use of standard Portland cement concrete mixtures, the Contractor shall employ proper consolidation methods to ensure the highest quality finish. Internal vibration shall be achieved with a vibrator of appropriate size, the highest frequency and low to moderate amplitude. Concrete placement shall be in lifts not to exceed 1.5 feet. Internal vibrator operation shall be at appropriate intervals and depths and withdrawn slowly enough to assure a minimal amount of surface air voids and the best possible finish without causing segregation. 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 Tollway. The use of internal or external vibratory action shall not be allowed with the use of self consolidating concrete mixtures. 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.

Applying color stain

Clean surface prior to application of stain materials to assure that surface is free of latency, dirt, dust, grease, efflorescence, paint, or other foreign material, following manufacturer's instructions for surface preparation. Do not sandblast. Preferred method to remove latency is pressure washing with water, minimum 3000 psi (a rate of three to four gallons per minute), using fan nozzle perpendicular to and at a distance of one or two feet from surface. Completed surface shall be free of blemishes, discoloration, surface voids and unnatural form marks.

Surfaces to receive stain shall be structurally sound, clean, dry, fully cured, and free from dust, curing agents or form release agents, efflorescence, scale, or other foreign materials. Methods and materials used for cleaning of substrate shall be as recommended by the manufacturer of the water-repellent stain. Concrete shall be at least 30 days old prior to concrete stain application. Curing agents must be removed a minimum of 14 days prior to coating to allow the concrete to dry out.

The stain shall be thoroughly mixed in accordance with the manufacturer's directions using an air-driven or other explosion-proof power mixer. Mix all containers thoroughly prior to application. Do not thin the material.

Materials shall be applied at the rate as recommended by the manufacturer. Absorption rates could be increased or decreased depending upon surface texture and porosity of the substrate so as to achieve even staining.

Temperature and relative humidity conditions during time of concrete stain application shall be per manufacturer's application instructions. Do not apply materials under rainy conditions or within three (3) days after surfaces become wet from rainfall or other moisture. Do not apply when weather is foggy or overcast. Take precaution to ensure that workmen and work areas are adequately protected from fire and health hazards resulting from handling, mixing and application of materials. Furnish all the necessary equipment to complete the work. Provide drop cloths and other forms of protection necessary to protect all adjoining work and surfaces to render them completely free of overspray and splash from the concrete stain work. Any surfaces, which have been damaged or splattered, shall be cleaned, restored, or replaced to the satisfaction of the Engineer.

Avoid staining the “mortar joints” by providing suitable protection over the joints during the staining process.

The concrete staining work described herein shall be performed after the grading is finished.

Sequencing: Schedule color stain application with earthwork and back-filling of any wall areas making sure that all simulated stone texture is colored to the minimum distance below grade. Delay adjacent plantings until color application is completed. Coordinate work to permit coloring applications without interference from other trades.

Where exposed soil or pavement is adjacent which may spatter dirt or soil from rainfall, or where surface may be subject to over-spray from other processes, provide temporary cover of completed work.

Guidelines for use of form liners

Form liners are being used on this project to achieve very specific architectural results. The Contractor shall not deviate from the guidelines contained herein unless authorized by the Tollway in writing.

Method of measurement

This work will not be measured for payment. Cost will be included in the respective wall system pay item.

Required adjustments or corrections needed to address mockup comments and the cost of additional mockups, if required, will not be paid for separately, but shall be included in the respective retaining wall pay item.

Basis of payment

Form lined surfaces will not be paid for separately but shall be included in the respective retaining wall pay item. The unit price bid of the respective wall system shall include all labor and material costs associated with designing, developing, furnishing and installing form liners, forming, pouring, surface coloring and disposal of forms, including a satisfactory cast concrete mockup panel to the requirements included herein.

CONCRETE BARRIER

Description. This work shall consist of constructing a concrete barrier base with reinforcement bars and concrete barrier with reinforcement bars on a concrete barrier base with reinforcement bars as detailed in the Plans.

637.02 Materials. Materials for the barrier and the Portland cement concrete base shall conform to the requirements of the following Articles of Section 1000 - Materials:

| Item | Article/Section |
|--|-------------------|
| (a) Portland Cement Concrete..... | 1020 |
| (b) Tie Bars (Note 1)..... | 1006.10(a)(b) |
| (c) Dowel Bars..... | 1006.11(b) |
| (d) Protective Coat..... | 1023 |
| e) Non-Shrink Grout..... | 1024 |
| (f) Chemical Adhesive Resin System..... | 1027.01 |
| (g) Prefomed Expansion Joint Filler..... | 1051.01 – 1051.08 |

Note 1. Tie bars shall meet the requirements of AASHTO M312, Grade 60 (400).

The coarse aggregate to be used in the concrete barrier walls shall conform to the requirements for the coarse aggregate that is used for superstructure concrete.

Hot mix asphalt (HMA) base shall not be allowed.”

Construction Requirements. This work shall be done in accordance with the applicable portions of Section 637 of the Standard Specifications. Reinforcing steel shall be in accordance with Article 508. The concrete barrier shall be constructed on a concrete barrier base as detailed in the Plans. The concrete barrier shall be constructed separately and not poured monolithically with the concrete barrier base.

Method of Measurement. CONCRETE BARRIER, SINGLE FACE REINFORCED shall be measured for payment in feet along the centerline of the barrier. CONCRETE BARRIER BASE, REINFORCED will be measured for payment in feet in place, along the centerline of the barrier base.

Basis of Payment

This work will be paid for at the contract unit price per foot for CONCRETE BARRIER, SINGLE FACE, REINFORCED, 42 INCH, CONCRETE BARRIER, SINGLE FACE, REINFORCED, 54 INCH, CONCRETE BARRIER BASE (SPECIAL), CONCRETE BARRIER BASE, REINFORCED, FOR SINGLE FACE BARRIER, 42 INCH and CONCRETE BARRIER BASE, REINFORCED, FOR SINGLE FACE BARRIER, 54 INCH which price shall include all equipment, labor, and materials necessary to construct the concrete barrier and concrete barrier base including all reinforcement bars in the concrete barrier and barrier base as detailed in the Plans.

DRAINAGE STRUCTURE TYPE 4 (MODIFIED)

Description: This work shall consist of furnishing and installing Drainage Structure Type 4 (Modified) of the dimensions and locations as shown on the plans and/or specified by the Engineer. Work shall be performed in accordance with Section 602 of the Standard Specifications.

Method of Measurement: Drainage Structure Type 4 (Modified) will be measured for payment as Each.

Basis of Payment: Drainage Structure Type 4 (Modified) will be paid for at the contract unit price Each for Drainage Structure Type 4 (Modified) which price shall include all labor, materials, equipment and incidentals necessary to perform work.

SEEDING, CLASS 2E SALT TOLERANT ROADSIDE MIX (MODIFIED)

Description: This work shall be performed in accordance with Section 250 of the Standard Specifications except as herein modified. The work shall consist of preparing the seed bed, transporting, furnishing and placing the seed and other materials required in seeding operations as shown on the plans or as directed by the Engineer.

Materials: Materials and mix designs shall be according to Article 1081.04 of the Standard Specifications:

Article 250.07 Seed Mixtures.

Insert the following to Table 1 – Seed Mixtures:

Class-Type = Seeding, Class 2E Salt Tolerant Roadside Mix (Modified) 7/

| KEY | BOTANICAL NAME | COMMON NAME | PER ACRE | |
|---------|--|-----------------------------|----------|------|
| | | | QUA. | UNIT |
| FESCUES | <i>Festuca arundinacea 'Falcon IV'</i> | FALCON IV TALL FESCUE | 40 | LB |
| | <i>Festuca arundinacea 'Rendition'</i> | RENDITION TALL FESCUE | 20 | LB |
| | <i>Festuca arundinacea 'Titan Ltd.'</i> | TITAN LTD. TALL FESCUE | 20 | LB |
| | <i>Festuca rubra 'Audobon'</i> | AUDOBON CREEPING RED FESCUE | 30 | LB |
| | <i>Festuca rubra 'Epic'</i> | EPIC CREEPING RED FESCUE | 20 | LB |
| | <i>Festuca trachophylla 'Rescue 911'</i> | RESCUE 911 HARD FESCUE | 40 | LB |
| GRASS | <i>Lolium perenne 'Gator 3'</i> | GATOR 3 PERENNIAL RYEGRASS | 50 | LB |
| | <i>Puccinella distans 'Fults'</i> | FULTS DISTANS ALKALIGRASS | 60 | LB |
| | | | 280 | LB |

Seeding time shall be between April 1st and June 15th or August 1st and November 1st.

If substitutions are requested for any Tall Fescue (*Festuca arundinacea*) varieties due to lack of availability at time of procurement, the Contractor shall select alternative seed varieties within the same species that have >70% viable endophytic levels.

Article 250.06 Seeding Methods

Add the following to Article 250.06(a) Bare Earth Seeding:

- (5) Seeding, Class 2E Salt Tolerant Roadside Mix (Modified) shall be sown with a machine that mechanically places the seed in direct contact with the soil, evenly distributes, packs, and covers the seed in one continuous operation or with a hydraulic seeder.

Contractor shall make a minimum of 2 passes in opposite directions when mechanically seeding to ensure even coverage.

Broadcasting seeding will be allowed as approved by the Engineer and/or on slopes steeper than 1:3 (V: H) or in inaccessible areas. When broadcast seeders are used, the individual seeds comprising the seeding mixture shall be sown separately or in similar size groupings unless otherwise determined by the Engineer.

Immediately after seed is sown, Erosion Control Blanket shall be installed in accordance with Section 251 of the Standard Specifications.

Method of Measurement: This work will be measured for payment in ACRES.

Basis of Payment: This work will be paid for at the contract unit price per ACRE for SEEDING, CLASS 2E SALT TOLERANT ROADSIDE MIX (MODIFIED).

SEEDING, CLASS 4F NATIVE GRASS, LOW PROFILE MIX (MODIFIED)

Description: This work shall be performed in accordance with Section 250 of the Standard Specifications except as herein modified. The work shall consist of preparing the seed bed, transporting, furnishing and placing the seed and other materials required in seeding operations as shown on the plans or as directed by the Engineer.

Materials: Materials and mix designs shall be according to Article 1081.04 of the Standard Specifications:

Article 250.07 Seed Mixtures.

Insert the following to Table 1 – Seed Mixtures:

Class-Type = Seeding, Class 4F Native Grass, Low Profile Mix (Modified)

| KEY | BOTANICAL NAME | COMMON NAME | PER ACRE | |
|----------------|---------------------------------|------------------------------|----------|------|
| | | | QUA. | UNIT |
| NATIVE GRASSES | <i>Schizachyrium scoparium</i> | LITTLE BLUESTEM | 15 | LB |
| | <i>Bouteloua curtipendula</i> | SIDE-OATS GRAMA | 10 | LB |
| | <i>Agropyron trachycaulum</i> | SLENDER WHEAT GRASS | 5 | LB |
| | <i>Elymus canadensis</i> | CANADA WILD RYE | 2 | LB |
| | <i>Koeleria macrantha</i> | JUNE GRASS | 1 | LB |
| GRASS | <i>Chasmanthium latifolium</i> | NORTHERN SEA OATS | 2 | LB |
| | <i>Lolium perenne 'Gator 3'</i> | GATOR 3 PERENNIAL RYEGRASS | 15 | LB |
| | | | 50 | LB |
| COVER | <i>Lolium multiflorum</i> | ANNUAL RYEGRASS (cover crop) | 40 | LB |
| | | | 90 | LB |

Seeding times shall be between May 1st to June 15th and September 15th to November 1st.

Article 250.06 Seeding Methods

Add the following to Article 250.06(a)(2) Bare Earth Seeding:

Seeding, Class 4F Native Grass, Low Profile Mix (Modified) shall be sown with a rangeland type grass drill.

Seeding, Class 4F Native Grass, Low Profile Mix (Modified) shall include >90% Pure Live Seed (PLS).

Seeding, Class 4F Native Grass, Low Profile Mix (Modified) shall be combined with appropriate endomycorrhizal inoculants such as AM 120 Mycorrhizal Inoculum (or comparable). The inoculants shall contain a diverse mixture of glomales fungal species (*Glomus* spp.) in pelletized form. Application rate shall be 40 lbs per acre.

Contractor shall make a minimum of 2 passes in opposite directions when drill seeding to ensure even coverage.

Immediately after seed is sown, Erosion Control Blanket shall be installed in accordance with Section 251 of the Standard Specifications.

Method of Measurement: This work will be measured for payment in ACRES.

Basis of Payment: This work will be paid for at the contract unit price per ACRE for SEEDING, CLASS 4F NATIVE GRASS, LOW PROFILE MIX (MODIFIED).

SEEDING, TALL FESCUE MIX

Description: This work shall be performed in accordance with Section 250 of the Standard Specifications except as herein modified. The work shall consist of preparing the seed bed, transporting, furnishing and placing the seed and other materials required in seeding operations as shown on the plans or as directed by the Engineer.

Materials: Materials and mix designs shall be according to Article 1081.04 of the Standard Specifications:

Article 250.07 Seed Mixtures.

Insert the following to Table 1 – Seed Mixtures:

Class-Type = Seeding, Tall Fescue Mix

| KEY | BOTANICAL NAME | COMMON NAME | PER ACRE | |
|---------|--|----------------------------|----------|------|
| | | | QUA. | UNIT |
| FESCUES | <i>Festuca arundinacea 'Cayenne'</i> | CAYENNE TALL FESCUE | 80 | LB |
| | <i>Festuca arundinacea 'Cochise III'</i> | COCHISE III TALL FESCUE | 80 | LB |
| | <i>Festuca arundinacea 'Falcon IV'</i> | FALCON IV TALL FESCUE | 80 | LB |
| | <i>Festuca arundinacea 'Rendition'</i> | RENDITION TALL FESCUE | 20 | LB |
| | <i>Festuca arundinacea 'Shenandoah II'</i> | SHENANDOAH II TALL FESCUE | 20 | LB |
| | <i>Festuca arundinacea 'Titan Ltd.'</i> | TITAN LTD. TALL FESCUE | 20 | LB |
| GRASS | <i>Lolium perenne 'Gator 3'</i> | GATOR 3 PERENNIAL RYEGRASS | 75 | LB |
| | | | 375 | LB |

Seeding time shall be between April 1st and June 15th or August 1st and November 1st.

If substitutions are requested for any Tall Fescue (*Festuca arundinacea*) varieties due to lack of availability at time of procurement, the Contractor shall select alternative seed varieties within the same species that have >70% viable endophytic levels.

Article 250.06 Seeding Methods

Add the following to Article 250.06(a) Bare Earth Seeding:

- (5) Seeding, Tall Fescue Mix shall be sown with a machine that mechanically places the seed in direct contact with the soil, evenly distributes, packs, and covers the seed in one continuous operation or with a hydraulic seeder.

Contractor shall make a minimum of 2 passes in opposite directions when mechanically seeding to ensure even coverage.

Broadcasting seeding will be allowed as approved by the Engineer and/or on slopes steeper than 1:3 (V: H) or in inaccessible areas. When broadcast seeders are used, the individual seeds comprising the seeding mixture shall be sown separately or in similar size groupings unless otherwise determined by the Engineer.

Immediately after seed is sown, Erosion Control Blanket shall be installed in accordance with Section 251 of the Standard Specifications.

Method of Measurement: This work will be measured for payment in ACRES.

Basis of Payment: This work will be paid for at the contract unit price per ACRE for SEEDING, TALL FESCUE MIX.

**RADIO FREQUENCY SAFETY TRAINING AND PRECAUTIONARY MEASURES:
WORKZONE SAFETY IN THE VICINITY OF THE WBBM AM RADIO ANTENNA**

Description

This Special Provision enables Contractor supervisory and equipment operations personnel to be trained in Radio Frequency (RF) safety (training to be provided by others), and establishes a budgetary allowance for RF testing of construction equipment (to be performed by others) and furnishing and installing RF precautionary measures (such as temporary grounding systems) or other on cranes, equipment and/or other long metal objects. Precautionary measures will be installed on an as-needed basis, as directed by WBBM Radio's representative or by the Engineer.

The WBBM AM Radio antenna is located near the project, northwest of the I-290/Thorndale Avenue Interchange, and transmits with 50,000 watts of power on the AM Radio band. There is the potential that the nearby proximity of the radio antenna to the work area could affect equipment and/or long metal objects of 100 feet in length or longer, including but not limited to cranes, large equipment, cables and/or long segment of wire, and could cause these metal objects to absorb and re-radiate RF energy, acting as a parasitic radiator or inducing arcing, which could potentially pose a health and safety risk to construction staff and equipment. This Special Provision describes actions which will be taken to minimize risks to personnel and equipment.

CONSTRUCTION REQUIREMENTS

RF Safety Training

Within 30 calendar days of receiving notice to proceed, the Contractor shall contact WBBM AM Radio's representative to schedule a three-hour RF Safety Training class to be attended by six of the Contractor's Staff, including Supervisory Staff and Equipment Operators. The class will be held on site or at a location within five miles of the project site, at a location agreed to with the Engineer. The Contractor will be responsible for determining which personnel are appropriate to attend the training, and for communicating all RF safety procedures to Contractor and subcontractor project staff.

Contact Information for WBBM's representative is as follows:

WBBM Radio
c/o Jeremy Ruck
Jeremy Ruck & Associates, Inc.
221 S. 1st Avenue
Canton, IL 61520
309-647-1200
Jeremy@jeremyruck.com

CONSTRUCTION REQUIREMENTS

RF Precautionary Measures

Fourteen calendar days prior to performing any work involving metal objects of 100 feet in length or greater, such as equipment, cables, wires or other long metal objects, the Contractor shall contact WBBM Radio's representative to describe the work to be performed. Contact shall be by phone and by email, with copy to the Resident Engineer. The WBBM Radio's representative will determine if RF measurements will be needed, and if required, will schedule field RF measurements to determine levels of parasitic radiation. WBBM Radio's representative will instruct the Contractor on what RF precautionary measures will need to be installed.

If RF PRECAUTIONARY MEASURES are deemed necessary, potential action required by the Contractor may include but not limited to installing temporary grounding systems (examples: grounding rods, wires and connectors), personal protection equipment to avoid contact hazards (examples: Kevlar straps and gloves), noise filtering materials (examples: ferrite) or other actions as instructed by WBBM AM Radio's representative or by the Engineer.

The Contractor shall cooperate with WBBM AM Radio's representative, including providing advance notice, providing access to the project site, and other reasonable actions. Email records of contact and responses shall be retained by the Contractor.

The requirements for grounding systems will generally comply with the standard Specification for Section 806. Grounding, however requirements may be modified to suit specific applications.

Method of measurement

RF safety training session along with the installation of RF precautionary measures as described above will be measured for payment on lump sum basis.

Basis of payment

This work will be paid for at the contract lump sum price for RADIO FREQUENCY SAFETY TRAINING AND PRECAUTIONARY MEASURES, which price will be payment in full for all labor and materials necessary to complete the work as described above or as directed by the engineer.

LOCATING UNDERGROUND UTILITIES

Description.

This work shall consist of excavation, by methods of hand excavation or vacuum excavation approved by the Engineer, to verify the horizontal and vertical location of existing regulated (e.g., electric, natural gas, telephone) unregulated (e.g., water, sewer, oil) and IDOT-owned or Tollway-owned (e.g., roadway lighting, fiber optic cables) utilities within the Contract Limits shown on the Plans and/or as directed by the Engineer.

Materials.

The Materials used for Porous Granular Embankment and backfill shall consist of coarse aggregate meeting the gradation of CA-18 in accordance with Article 1004.05.

General Requirements.

In non-emergency conditions and unless specified elsewhere, the Contractor shall contact the owner of the utility at least seventy-two (72) hours prior to exploratory digging, to provide the anticipated location and to be available during exploration activities. The depth and width of the exploration shall be sufficient to allow positive identification of the type, size and depth of the utility(s). The number of exploration trenches for utilities running along the Tollway shall be as directed by the Engineer.

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

Any costs resulting from damage incurred to any utility (including interruption of service provided) shall be the sole responsibility of the Contractor, per Article 105.07 of the Tollway Supplemental Specifications. Costs relating to damaging the Tollway facilities on Tollway right-of-way are as specified in S.P. 115.

After positive location, the Engineer will direct the Contractor as follows:

- Backfill and/or restore the excavated area.
- Leave the excavated area open and protected. The excavated material can either be stockpiled in an acceptable location and provided with suitable erosion control measures, or disposed of off-site in accordance with Article 202.03 of the Standard Specifications.

Method of Measurement.

Locating Underground Utilities will be measured for payment in feet based on the actual horizontal length along the utility line.

Basis of Payment.

This work will be paid for at the contract unit price per foot for LOCATING UNDERGROUND UTILITIES, which payment shall constitute full compensation for locating, excavating, backfilling/restoring, or protection of the open excavation including suitable soil erosion measures.

**TOLLWAY OPERATIONAL FACILITIES
(PROCEDURES, PROTECTION, AND LIQUIDATED DAMAGES)**

Tollway operational facilities include but are not limited to roadways, bridges, overhead sign structures, cantilever sign structures, overhead pedestrian walkways, plaza canopies, buildings, Electronic Toll Collection (ETC) monotubes and frame structures, fiber optic cable, multi-mode cable, Digital Message Signs (DMS), cameras, Vehicle Detection Sensors, telecommunication cable, electrical (overhead and underground), water and sewer. Tollway Operational Facilities are installed along and across the rights-of-way of the Illinois Tollway system.

Facilities Locate Process

The Contractor or Sub-Contractor performing the work shall have all known Tollway facilities located at all times in the general area of the facility. The location of the Tollway's fiber optic cable, as well as other Tollway facilities, is not available through the J.U.L.I.E. system. The contractor shall coordinate with the Tollway to determine the location of these facilities.

The Contractor shall initiate the locate process for the Tollway facilities by completing an online Locate Request Form A-36. To submit a Tollway Locate, log onto www.illinoisvirtualtollway.com/utilitylocates. The completed A-36 form, valid for 28 days, shall be transmitted, at least two (2) business days prior to starting any underground operations, excavations or digging of any type in the general area of the Tollway facility. If outside factors (weather, construction activity or vandalism) at the dig site have caused the markings to become disturbed and/or indistinguishable, a request for remarks/refresh is required. The request shall be electronically transmitted, at least two (2) business days prior to starting any underground operation. After remarking, the locate request is valid for another 28 days. A copy of all completed A-36 forms sent to the Tollway shall be provided to the contract CM.

For assistance in completing a locate request, please refer to:

- Click for Contractor Manual or Click for Video Tutorial for instructions
 - o First time users **MUST** click this button: Click to Create Account
 - follow instructions and complete
- Click Submit Request:
 - o Fill-in all required fields*
 - o All sketches **MUST** be in .pdf and all lower case
 - o **MUST** have the full eight digit project number or the complete permit number

Any questions or problems please direct to:

Tollway Utility / Permit Section
Patricia Mathez – Utility Administrator
Phone: 630.241.6800 Extension: 3306 Fax: 630.271.7568
Email: pmathez@getipass.com

Contractors Responsibilities

The Contractor shall take reasonable action to determine the location of any underground utility facilities in and near the area for which such excavation operation is to be conducted; and shall plan the excavation or demolition to avoid or minimize interference with underground utility facilities within the tolerance zone by utilizing such precautions that include, but are not limited to, hand excavation, vacuum excavation methods, and visually inspecting the excavation while in progress until clear of the existing marked facility; This work is covered under the Special Provision, LOCATING UNDERGROUND UTILITIES.

During and following excavation and/or demolition, the Contractor shall protect existing underground utility facilities in and near the excavation or demolition area as required to avoid damage to the facility.

The Contractor shall backfill all excavations in such manner and with such materials as may be reasonably necessary for the protection of existing underground utility facilities in and near the excavation or demolition area.

In addition to establishing the approximate location of the facility, the Contractor shall be required to fully expose the facility to verify its horizontal and vertical location, if underground operations are contemplated within the Tolerance Zone, which is defined to mean the approximate location of underground utility facilities defined as a strip of land at least 3 feet wide, but not wider than the width of the underground facility plus 2.0 feet on either side of the outside edge of such facility based upon the markings made by the Tollway or operator of the facility. Excavation within the tolerance zone requires extra care and precaution.

Tollway's Fiber Optic System

The Tollway's fiber optic system is a Utility Facility providing service to the Tollway and other telecommunication companies. The Contractor is responsible for coordinating and scheduling its work with all necessary work on the fiber optic system, so as not to interfere with any fiber optic system adjustment or relocation work to be done by or on behalf of the Tollway. The Contractor is responsible for coordinating and scheduling its work in a manner that such work to be done by or on behalf of the Tollway will not cause interference with the Contractor's completion of The Work by the Completion Date. All aspects of the Contractor's responsibilities as they relate to the Tollway facilities are specified in Article 105.07 of the Tollway supplemental Specifications.

The Contractor shall immediately notify the Tollway Project Manager, Tollway Fiber Optic Manager and Utility Administrator in the event the fiber optic cable is damaged or in danger of being damaged. The Contractor shall be responsible for all costs incurred in connection with the repair, restoration, and testing of the system to insure it is operational and in the same condition as prior to the Contractor-caused damage.

In addition, for the interruption in service and the administrative burden, The Contractor shall pay to the Tollway the amount of \$10,000.00 for each occurrence of Contractor-caused damage to the fiber optic cable. The Tollway reserves the right to identify each strand of fiber individually as Contractor-caused damage.

Tollway's Miscellaneous Utility Facilities

Should damage occur to any other Tollway utility within the contract limits, the Contractor shall immediately notify the Tollway Project Manager. The Contractor shall be responsible for all costs incurred in connection with the repair, restoration, and testing to insure it is operational and in the same condition as prior to the Contractor-caused damage.

In addition, for the interruption in service and the administrative burden, The Contractor shall pay to the Tollway the amount of \$1,000.00 for each occurrence of Contractor-caused damage to any other Tollway facility not including the fiber optic cable.

Tollway's Operational Facilities

The Contractor is responsible for coordinating and scheduling its work so as not to interfere with the operation or function of Tollway Facilities.

The Contractor shall immediately notify the Tollway Project Manager, Tollway Fiber Optic Manager and Utility Administrator in the event of any damages to these Operational Facilities within the Tollway Right-of-Way.

The Contractor shall be responsible for all costs incurred in connection with the repair, restoration, replacement and testing of the system to insure it is operational and in the same condition as prior to the Contractor-caused damage. The Contractor shall also be charged liquidated damages.

Actual damages are difficult or impossible to define with certainty prior to an actual event, therefore, liquidated damages shall be assessed for each direction of traffic impacted based on the below schedule:

| <u>(6 AM to 10 PM)</u> | | |
|---------------------------|------------------|-------------|
| Jane Addams (I-90) | West of MP 53.75 | \$4,000/hr |
| Ronald Reagan (I-88) | West of MP 117.8 | \$4,000/hr |
| Jane Addams (I-90) | East of MP 53.75 | \$9,000/hr |
| Ronald Reagan (I-88) | East of MP 117.8 | \$9,000/hr |
| Tri-State (I-94/I-294) | | \$10,000/hr |
| Veterans Memorial (I-355) | | \$5,000/hr |
| Elgin O'Hare (IL-390) | | \$2,000/hr |

| <u>(10 PM to 6 AM)</u> | | |
|------------------------|--|------------|
| All roadways | | \$2,000/hr |

For extraordinary events, in addition to the liquidated damages the Contractor may be responsible for itemized costs associated with Emergency Responders and the Tollway's loss of collected revenue for the duration of the affected period as calculated by recent revenues, which are indicative of the period in which the event occurred.

MONITORING AND LIMITING VIBRATION DURING CONSTRUCTION OPERATIONS

Description:

Foundation piling for the Westbound I-290 to Eastbound Elgin O'Hare (IL 390) Ramp G6 bridge over Ramp K3 will be driven in the vicinity of the residential and commercial properties. Pavement and paved shoulder removal operations will be required on Westbound I-290, Westbound I-290 to Thorndale Avenue (Ramp J) and Park Boulevard. Appropriate measures shall be taken by the Contractor during pile driving or pavement breaking operations to avoid damage to the adjacent properties. The Contractor shall choose equipment and methods, such as size of pile driving hammers and types and sizes of pavement breaking and removal equipment that will meet the requirements of the contract, but not exceed the acceptable vibration limits.

Pile driving shall be performed in accordance with applicable portions of Section 512 of the Standard Specification except as herein modified. Removal of existing pavement and appurtenances shall be performed in accordance with Section 440 of the Standard Specification except as herein modified.

Pre-construction survey and vibration monitoring activities shall be performed by the Contractor to document pre-existing conditions and to insure that vibrations due to pile driving operations are within acceptable limits defined herein.

Requirements:

Preconstruction Survey: Before the start of construction the contractor shall complete a pre-construction inspection of the existing buildings located within 300 feet of the proposed construction activities. This survey shall include mapping of all current deterioration or distress visible on elevation and plan views of the buildings or building elements. The survey shall also include videotaping and close-up photographs of 100% of the building contents (floors, wall and ceilings). The above shall be documented in a Pre-Construction Survey Reports and kept on file by the Contractor. A copy of the report shall be submitted to the Engineer and the Tollway prior to commencement of planned construction activities.

Vibration Limitation and Recordings: The Contractor shall furnish, install, calibrate, maintain, and operate instrumentation for measuring and recording vibrations. The recording instrument shall be a velocity seismograph. Additional instruments shall be provided as necessary to evaluate propagation of vibrations. All instruments shall be periodically checked for proper calibration and shall be maintained in first-class working order. Instruments shall be replaced, repaired, or re-calibrated when needed or when directed by the Engineer.

The recordings shall be taken under the supervision of a qualified Licensed Structural Engineer in the State of Illinois. In addition, the Contractor's engineer shall interpret the readings and shall establish the vibration limitations, but under no circumstances shall the limit exceed the value as discussed below.

Prior to commencement of pile driving or pavement breaking operations, the Contractor shall submit in writing, for approval of the Engineer, his plan for monitoring his operations to assure compliance with the vibration limitation. As a minimum, this plan shall provide for the following:

- a. Recommended vibration limitation at the site based on survey establishing proximity of structure, type of structure, and condition of structure.
- b. Vibrations shall be recorded by the seismograph equipment at the adjacent properties while the operation is taking place.
- c. Trained personnel shall be provided to operate the equipment and interpret the recordings. Names and resumes of personnel to be provided shall be furnished.
- d. All operations shall be done in such a manner as to reduce vibrations which reach the adjacent property to or below acceptable limits as established by the Contractor, but which shall not exceed the limits as specified below.

Acceptable limits are defined as follows:

- a. 0.2 inch per second at a frequency 1 Hertz.
- b. 0.5 inch per second at frequencies between 2.6 Hertz and 40 Hertz.
- c. Velocities less than that defined by a straight line variation between 1 Hertz and 2.6 Hertz, per (a) and (b) above.
- d. 0.75 inch per second at frequencies above 40 Hertz.

A qualified Licensed Structural Engineer in the State of Illinois shall be provided by the Contractor. This person's responsibilities shall include the following:

- a. Supervise establishment of the program and initial operation of the equipment.
- b. Visit the jobsite a minimum of once a week, while pile driving or pavement breaking and removal operations are underway. The SE will make additional visits, if the Engineer determines that additional visits are required due to problems with calibration of equipment or other problems with the contractor's plan. These additional visits will be at no additional cost to the Tollway
- c. Inspect the recording program and interpretation of records, check the operations and recalibrate the equipment if necessary.
- d. Provide the Engineer with a comprehensive written report of the vibration measuring program and an analysis of the impact recordings within 7 days after completion of the pile driving operations.

In the event any recordings indicate the vibration limits are exceeded, all operations shall be suspended immediately, and a report shall be made immediately to the Engineer and the Tollway. The Contractor shall reduce the efforts, or otherwise cause appropriate measures to be taken to reduce the resulting vibrations to the acceptable limits.

Method of Measurement: Monitoring and Limiting Vibration during Construction Operations will not be measured for payment.

Basis of Payment: Monitoring and Limiting Vibration during Construction Operations will not be paid separately but will be considered as included in the contract unit price for DRIVING PILES.

LEGAL REGULATIONS AND RESPONSIBILITY TO THE PUBLIC

Description

Article 107.35 Construction Noise Restrictions

Replace the second paragraph of Article 107.35 of the IDOT Standards Specifications with the following:

No developers, owners of property, construction contractors or other similarly situated persons shall operate, or permit to be operated, upon premises under their control, any construction equipment, or otherwise create, or permit upon premises under their control, construction noise within 1,000 feet of an occupied residence, motel, hotel or similar establishment located within the Village of Itasca between the following hours:

Before 7:00 a.m. and after 7:00 p.m., Monday through Friday

Before 8:00 a.m. and after 7:00 p.m., Saturday, Sunday and holidays that are observed by the village

The above time limitations shall not apply to construction work that is of an emergency nature; provided, however, that the Director of Community Development shall be notified as soon as possible of the nature and the cause of the emergency.

Requests to modify or deviate from the above requirements shall be filed with the Director of Community Development in writing.

A request to modify or deviate from the above requirements shall be allowed for good cause, and must be approved in writing by the Village Administrator before any modifications or deviations can occur.

Any person having a beneficial or ownership interest in property upon which construction is occurring and any developer, contractor, or other person engaged in construction work who permits the operation of construction equipment thereon in violation of this section shall be subject a fine from the Village of Itasca.

DRAINAGE SYSTEM

Effective : June 10, 1994

Revised: January 1, 2007

Description. This work shall consist of furnishing and installing a bridge drainage system as shown on the plans, including all piping, fittings, support brackets, inserts, bolts, and splash blocks when specified.

Material. The pipe and fittings shall be reinforced fiberglass according to ASTM D 2996 RTRP with a 30,000 psi (207 MPa) minimum short-time rupture strength hoop tensile stress. The reinforced fiberglass shall also have an apparent stiffness factor at 5 percent deflection exceeding 200 cu in.-lbf/sq. in. (22.6 cu mm-kPa) and a minimum wall thickness of 0.10 in. (2.54 mm). All pipe supports and associated hardware shall be hot dip galvanized according to AASHTO M 232 (M 232M). The fiberglass pipe and fittings furnished shall be pigmented through out, or have a resin-rich pigmented exterior coat, specifically designed for overcoating fiberglass, as recommended by the manufacturer. The color shall be as specified by the Engineer. The resin in either case shall have an ultraviolet absorber designed to prevent ultraviolet degradation. The supplier shall certify the material supplied meets or exceeds these requirements.

Design. The drainage system shall be designed as an open system with allowances for the differential expansion and contraction expected between the superstructure and the substructure to which the drainage system is attached.

Installation. All connections of pipes and fittings shown on the plans to facilitate future removal for maintenance cleanout or flushing shall be made with a threaded, gasketed coupler or a bolted gasketed flange system. Adhesive bonded joints will be permitted for runs of pipe between such connections. The end run connection shall feature a minimum nominal 6 in. (150 mm) female threaded fiberglass outlet. Straight runs may utilize a 45 degree reducing saddle bonded to the pipe. The female outlet shall be filled with a male threaded PVC plug.

Runs of pipe shall be supported at spacings not exceeding those recommended by the manufacturer of the pipe. Supports that have point contact or narrow supporting areas shall be avoided. Standard slings, clamps, clevis hangers and shoe supports designed for use with steel pipe may be used. A minimum strap width for hangers shall be 1 1/2 in. (40 mm) for all pipe under 12 in. (300 mm) in diameter and 2 in. (50 mm) for diameters 12 in. (300 mm) or greater. Straps shall have 120 degrees of contact with the pipe. Pipes supported on less than 120 degrees of contact shall have a split fiberglass pipe protective sleeve bonded in place with adhesive.

All reinforced fiberglass pipe, fittings, and expansion joints shall be handled and installed according to guidelines and procedures recommended by the manufacturer or supplier of the material.

Basis of Payment. This work will be paid for at the contract lump sum price for DRAINAGE SYSTEM.

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.

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.

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:

| PHYSICAL PROPERTY | ASTM TEST METHOD | REQUIREMENTS | |
|---|------------------|--------------------------|--------------------------|
| | | | |
| 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(l) of the Standard Specifications. Prior to shipment the exposed edges and other exposed portions of the structural steel bearing plates shall be cleaned and painted according to Articles 506.03 and 506.04 of the Standard Specifications. Painting shall be with the paint specified for shop painting of structural steel. During cleaning and painting the stainless steel, 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.

MECHANICALLY STABILIZED EARTH RETAINING WALLS

Effective: February 3, 1999

Revised: December 29, 2014

Description. This work shall consist of preparing the design, furnishing the materials, and constructing the mechanically stabilized earth (MSE) retaining wall to the lines, grades and dimensions shown in the contract plans and as directed by the Engineer.

General. The MSE wall consists of a concrete leveling pad, precast concrete face panels, a soil reinforcing system, select fill and concrete coping (when specified). The soil reinforcement shall have sufficient strength, quantity, and pullout resistance, beyond the failure surface within the select fill, as required by design. The material, fabrication, and construction shall comply with this Special Provision and the requirements specified by the supplier of the wall system selected by the Contractor for use on the project.

Suppliers. The Department maintains a pre-qualified list of proprietary structural systems allowed for mechanically stabilized earth retaining walls. 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.

Submittals. The wall system supplier shall submit complete design calculations and shop drawings to the Engineer according to Article 1042.03(b) of the Standard Specifications no later than 90 days prior to beginning construction of the wall. No work or ordering of materials for the structure shall be done by the Contractor until the submittal has been approved in writing by the Engineer. All submittals shall be sealed by an Illinois Licensed Structural Engineer and shall include all details, dimensions, quantities and cross sections necessary to construct the wall and shall include, but not be limited to, the following items:

- (a) Plan, elevation and cross section sheet(s) for each wall showing the following:
 - (1) A plan view of the wall indicating the offsets from the construction centerline to the face of the wall at all changes in horizontal alignment. The plan view shall show the limits of soil reinforcement and stations where changes in length and/or size of reinforcement occur. The centerline shall be shown for all drainage structures or pipes behind or passing through and/or under the wall.
 - (2) An elevation view of the wall indicating the elevations of the top of the panels. These elevations shall be at or above the top of exposed panel line shown on the contract plans. This view shall show the elevations of the top of the leveling pads, all steps in the leveling pads and the finished grade line. Each panel type, the number, size and length of soil reinforcement connected to the panel shall be designated. The equivalent uniform applied service (unfactored) nominal bearing pressure shall be shown for each designed wall section.
 - (3) A listing of the summary of quantities shall be provided on the elevation sheet of each wall.
 - (4) Typical cross section(s) showing the limits of the reinforced select fill volume included within the wall system, soil reinforcement, embankment material placed behind the select fill, precast face panels, and their relationship to the right-of-way limits, excavation cut slopes, existing ground conditions and the finished grade line.
 - (5) All general notes required for constructing the wall.
- (b) All details for the concrete leveling pads, including the steps, shall be shown. The top of the leveling pad shall be located at or below the theoretical top of the leveling pad line shown on the contract plans. The theoretical top of leveling pad line shall be 3.5 ft. (1.1 m) below finished grade line at the front face of the wall, unless otherwise shown on the plans.
- (c) Where concrete coping or barrier is specified, the panels shall extend up into the coping or barrier as shown in the plans. The top of the panels may be level or sloped to satisfy the top of exposed panel line shown on the contract plans. Cast-in-place concrete will not be an acceptable replacement for panel areas below the top of exposed panel line. As an alternative to cast in place coping, the Contractor may substitute a precast coping, the details of which must be included in the shop drawings and approved by the Engineer.

- (d) All panel types shall be detailed. The details shall show all dimensions necessary to cast and construct each type of panel, all reinforcing steel in the panel, and the location of soil reinforcement connection devices embedded in the panels. These panel embed devices shall not be in contact with the panel reinforcement steel.
- (e) All details of the wall panels and soil reinforcement placement around all appurtenances located behind, on top of, or passing through the soil reinforced wall volume such as parapets with anchorage slabs, coping, foundations, and utilities etc. shall be clearly indicated. Any modifications to the design of these appurtenances to accommodate a particular system shall also be submitted.
- (f) When specified on the contract plans, all details of architectural panel treatment, including color, texture and form liners shall be shown.
- (g) The details for the connection between concrete panels, embed devices, and soil reinforcement shall be shown.
- (h) When pile sleeves are specified, the pile sleeve material, shape, and wall thickness shall be submitted to the Engineer for approval. It shall have adequate strength to withstand the select fill pressures without collapse until after completion of the wall settlement. The annulus between the pile and the sleeve shall be as small as possible while still allowing it to be filled with loose dry sand after wall erection.

The initial submittal shall include three sets of shop drawings and one set of calculations. One set of drawings will be returned to the Contractor with any corrections indicated. After approval, the Contractor shall furnish the Engineer with ten (10) sets of corrected plan prints for distribution by the Department. No work or ordering of materials for the structure shall be done until the submittal has been approved by the Engineer.

Materials. The MSE walls shall conform to the supplier's standards as previously approved by the Department, and the following:

- (a) The soil reinforcing system, which includes the soil reinforcement, and all connection devices, shall be according to the following:
 - (1) Inextensible Soil Reinforcement. Steel reinforcement shall be according ASTM A 572 Grade 65 (450), ASTM A1064, ASTM A 1011 or ASTM A 463 Grade 50 (345). The steel reinforcement shall be either epoxy coated, aluminized Type 2, or galvanized. Epoxy coatings shall be according to Article 1006.10(a)(2), except the minimum thickness of epoxy coating shall be 18 mils (457 microns). No bend test will be required. Aluminized Type 2-100 shall be according to ASTM A 463. Galvanizing shall be according to AASHTO M 111 or ASTM A 653 with touch up of damage according to ASTM A 780.

- (2) Extensible Soil Reinforcement. Geosynthetic reinforcement shall be monolithically fabricated from virgin high density polyethylene (HDPE) or high tenacity polyester (HTPET) resins having the following properties verified by mill certifications:

| <u>Property for Geosynthetic Reinforcement</u> | <u>Value</u> | <u>Test</u> |
|--|--------------|-------------|
| Minimum Tensile Strength | ** | ASTM D 6637 |

** as specified in the approved design calculations and shown on the shop drawings.

| <u>Property for HDPE</u> | <u>Value</u> | <u>Test</u> |
|--------------------------|---------------|--------------------------|
| Melt Flow Rate (g/cm) | 0.060 – 0.150 | ASTM D 1238, Procedure B |
| Density (g/cu m) | 0.941 – 0.965 | ASTM D 792 |
| Carbon Black | 2% (min) | ASTM D 4218 |

| <u>Property for HTPET</u> | <u>Value</u> | <u>Test</u> |
|------------------------------------|--------------|-------------|
| Carboxyl End Group (max) (mmol/kg) | <30 | GRI-GG7 |
| Molecular Weight (Mn) | >25,000 | GRI-GG8 |

- (3) Panel Embed/Connection Devices. Panel embeds and connection devices shall be according to the following.

- a. Metallic panel embed/connection devices and connection hardware shall be galvanized according to AASHTO M 232 and shall be according to the following.

| | |
|----------------------|---|
| Mesh and Loop Embeds | ASTM A1064 or ASTM A 706 Grade 60 (420) |
| Tie Strip Embeds | AASHTO M 270/M 270M Grade 50 (345) or ASTM A 1011 HSLAS Grade 50 (345) Class 2 |

- b. Non metallic panel embed/connection devices typically used with geosynthetic soil reinforcement shall be manufactured from virgin or recycled polyvinyl chloride having the following properties:

| <u>Property for Polyvinyl Chloride</u> | <u>Value</u> | <u>Test</u> |
|---|--------------|-------------|
| Heat Deflection Temperature (°F) | 155 - 164 | ASTM D 1896 |
| Notched IZOD 1/8 inch @ 73°F (ft-lb/in) | 4 – 12 | ASTM D 256 |
| Coefficient of Linear Exp. (in/in/°F) | 3.5 – 4.5 | ASTM D 696 |
| Hardness, Shore D | 79 | ASTM D 2240 |

| <u>Property for Polypropylene</u> | <u>Value</u> | <u>Test</u> |
|-----------------------------------|---------------|--------------------------|
| Melt Flow Rate (g/cm) | 0.060 – 0.150 | ASTM D 1238, Procedure B |
| Density (g/cu m) | 0.88 – 0.92 | ASTM D 792 |

- (b) The select fill, defined as the material placed in the reinforced volume behind the wall, shall be according to Sections 1003 and 1004 of the Standard Specifications and the following:
- (1) Select Fill Gradation. Either a coarse aggregate or a fine aggregate may be used. For coarse aggregate, gradations CA 6 thru CA 16 may be used. If an epoxy coated reinforcing is used, the coarse aggregate gradations shall be limited to CA 12 thru CA 16. For fine aggregate, gradations FA 1, FA 2, or FA 20 may be used.
 - (2) Select Fill Quality. The coarse or fine aggregate shall have a maximum sodium sulfate (Na_2SO_4) loss of 15 percent according to Illinois Modified AASHTO T 104.
 - (3) Select Fill Internal Friction Angle. The effective internal friction angle for the coarse or fine aggregate shall be a minimum 34 degrees according to AASHTO T 236 on samples compacted to 95 percent density according to Illinois Modified AASHTO T 99. The AASHTO T 296 test with pore pressure measurement may be used in lieu of AASHTO T 236. If the vendor's design uses a friction angle higher than 34 degrees, as indicated on the approved shop drawings, this higher value shall be taken as the minimum required.
 - (4) Select Fill and Steel Reinforcing. When steel reinforcing is used, the select fill shall meet the following requirements.
 - a. The pH shall be 5.0 to 10.0 according to Illinois Modified AASHTO T 289.
 - b. The resistivity according to Illinois Modified AASHTO T 288 shall be greater than 3000 ohm centimeters for epoxy coated and galvanized reinforcement, and 1500 ohm centimeters for Aluminized Type 2. However, the resistivity requirement is not applicable to CA 7, CA 8, CA 11, CA 13, CA 14, CA 15, and CA 16.
 - c. The chlorides shall be less than 100 parts per million according to Illinois Modified AASHTO T 291 or ASTM D 4327. For either test, the sample shall be prepared according to Illinois Modified AASHTO T 291.
 - d. The sulfates shall be less than 200 parts per million according to Illinois Modified AASHTO T 290 or ASTM D 4327. For either test, the sample shall be prepared according to Illinois Modified AASHTO T 290.
 - e. The organic content shall be a maximum 1.0 percent according to Illinois Modified AASHTO T 267.
 - (5) Select Fill and Geosynthetic Reinforcing. When geosynthetic reinforcing is used, the select fill pH shall be 4.5 to 9.0 according to Illinois Modified AASHTO T 289.

- (6) Test Frequency. Prior to start of construction, the Contractor shall provide internal friction angle and pH test results, to show the select fill material meets the specification requirements. In addition, resistivity, chlorides, sulfates, and organic content test results will be required if steel reinforcing is used. The laboratory performing the Illinois Modified AASHTO T 288 test shall be approved by the Department according to the current Bureau of Materials and Physical Research Policy Memorandum "Minimum Laboratory Requirements for Resistivity Testing". All test results shall not be older than 12 months. In addition, a sample of select fill material will be obtained for testing and approval by the Department. Thereafter, the minimum frequency of sampling and testing by the department at the jobsite will be one per 40,000 tons (36,300 metric tons) of select fill material. Testing to verify the internal friction angle will be required when the wall design utilizes a minimum effective internal friction angle greater than 34 degrees, or when crushed coarse aggregate is not used.
- (c) The embankment material behind the select fill shall be according to Section 202 and/or Section 204. An embankment unit weight of 120 lbs/cubic foot (1921 kg/cubic meter) and an effective friction angle of 30 degrees shall be used in the wall system design, unless otherwise indicated on the plans.
- (d) The geosynthetic filter material used across the panel joints shall be either a non-woven needle punch polyester or polypropylene or a woven monofilament polypropylene with a minimum width of 12 in. (300 mm) and a minimum non-sewn lap of 6 in. (150 mm) where necessary.
- (e) The bearing pads shall be rubber, neoprene, polyvinyl chloride, or polyethylene of the type and grade as recommended by the wall supplier.
- (f) All precast panels shall be manufactured with Class PC concrete according to Section 504, Article 1042.02, Article 1042.03, and the following requirements:
- (1) The minimum panel thickness shall be 5 1/2 in. (140 mm).
 - (2) The minimum reinforcement bar cover shall be 1 1/2 in. (38 mm).
 - (3) The panels shall have a ship lap or tongue and groove system of overlapping joints between panels designed to conceal joints and bearing pads.
 - (4) The panel reinforcement shall be according to Article 1006.10(a)(2) or 1006.10(b)(1) except the welded wire fabric shall be epoxy coated according to ASTM A884.
 - (5) All dimensions shall be within 3/16 in. (5 mm).
 - (6) Angular distortion with regard to the height of the panel shall not exceed 0.2 inches in 5 ft (5 mm in 1.5 m).
 - (7) Surface defects on formed surfaces measured on a length of 5 ft. (1.5 m) shall not be more than 0.1 in. (2.5 mm).

- (8) The panel embed/connection devices shall be cast into the facing panels with a tolerance not to exceed 1 in. (25 mm) from the locations specified on the approved shop drawings.

Unless specified otherwise, concrete surfaces exposed to view in the completed wall shall be finished according to Article 503.15(a). 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. (6 mm).

Design Criteria. The design shall be according to the AASHTO LRFD Design Specifications noted on the plans for Mechanically Stabilized Earth Walls except as modified herein. The wall supplier shall be responsible for all internal stability aspects of the wall design and shall supply the Department with computations for each designed wall section. The analyses of settlement, bearing capacity and overall slope stability will be the responsibility of the Department. The wall need not be designed for seismic unless noted on the plans.

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

The design of the soil reinforcing system shall be according to the applicable design specifications for "Inextensible" steel or "Extensible" geosynthetic reinforcement criteria. The reduced section of the soil reinforcing system shall be sized to allowable stress levels at the end of a 75 year design life.

Steel soil reinforcing systems shall be protected by one of the following; epoxy coating, galvanizing or aluminizing. The design life for epoxy and aluminizing shall be assumed to be 16 years. The corrosion protection for the balance of the 75 year total design life shall be provided using a sacrificial steel thickness computed for all exposed surfaces.

Geosynthetic soil reinforcing systems shall be designed to account for the strength reduction due to long-term creep, chemical and biological degradation, as well as installation damage.

To prevent out of plane panel rotations, the soil reinforcement shall be connected to the standard panels in at least two different elevations, vertically spaced no more than 30 in. (760 mm) apart.

Typical design procedures and details, once accepted by the Department, shall be followed. All wall system changes shall be submitted in advance to the Department for approval.

For aesthetic considerations and differential settlement concerns, the panels shall be erected in such a pattern that the horizontal panel joint line is discontinuous at every other panel. This shall be accomplished by alternating standard height and half height panel placement along the leveling pad. Panels above the lowest level shall be standard size except as required to satisfy the top of exposed panel line shown on the contract plans.

At locations where the plans specify a change of panel alignment creating an included angle of 150 degrees or less, precast corner joint elements will be required. This element shall separate the adjacent panels by creating a vertical joint secured by means of separate soil reinforcement.

Isolation or slip joints, which are similar to corner joints in design and function, may be required to assist in differential settlements at locations indicated on the plans or as recommended by the wall supplier. Wall panels with areas greater than 30 sq. ft. (2.8 sq. m) may require additional slip joints to account for differential settlements. The maximum standard panel area shall not exceed 60 sq. ft. (5.6 sq. m).

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

The foundation soils supporting the structure shall be graded for a width equal to or exceeding the length of the soil reinforcement. Prior to wall construction, the foundation shall be compacted with a smooth wheel vibratory roller. Any foundation soils found to be unsuitable shall be removed and replaced, as directed by the Engineer, and shall be paid for separately according to Section 202.

When structure excavation is necessary, it shall be made and paid for according to Section 502 except that the horizontal limits for structure excavation shall be from the rear limits of the soil reinforcement 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 top of the leveling pad. The additional excavation necessary to place the concrete leveling pad will not be measured for payment but shall be included in this work.

The concrete leveling pads shall have a minimum thickness of 6 in. (150 mm) and shall be placed according to Section 503.

As select fill material is placed behind a panel, the panel shall be maintained in its proper inclined position according to the supplier specifications and as approved by the Engineer. Vertical tolerances and horizontal alignment tolerances shall not exceed 3/4 in. (19 mm) when measured along a 10 ft. (3 m) straight edge. The maximum allowable offset in any panel joint shall be 3/4 in. (19 mm). The overall vertical tolerance of the wall, (plumbness from top to bottom) shall not exceed 1/2 in. per 10 ft. (13 mm per 3 m) of wall height. The precast face panels shall be erected to insure that they are located within 1 in. (25 mm) from the contract plan offset at any location to insure proper wall location at the top of the wall. Failure to meet this tolerance may cause the Engineer to require the Contractor to disassemble and re-erect the affected portions of the wall. A 3/4 in. (19 mm) joint separation shall be provided between all adjacent face panels to prevent direct concrete to concrete contact. This gap shall be maintained by the use of bearing pads and/or alignment pins.

The back of all panel joints shall be covered by a geotextile filter material attached to the panels with a suitable adhesive. No adhesive will be allowed directly over the joints.

The select fill and embankment placement shall closely follow the erection of each lift of panels. At each soil reinforcement level, the fill material should be roughly leveled and compacted before placing and attaching the soil reinforcing system. The soil reinforcement and the maximum lift thickness shall be placed according to the supplier's recommended procedures except, the lifts for select fill shall not exceed 10 in. (255 mm) loose measurement or as approved by the Engineer. Embankment shall be constructed according to Section 205.

At the end of each day's operations, the Contractor shall shape the last level of select fill to permit runoff of rainwater away from the wall face. Select fill shall be compacted according to the project specifications for embankment except the minimum required compaction shall be 95 percent of maximum density as determined by Illinois Modified AASHTO T 99. Select fill compaction shall be accomplished without disturbance or distortion of soil reinforcing system and panels. Compaction in a strip 3 ft. (1 m) wide adjacent to the backside of the panels shall be achieved using a minimum of 3 passes of a light weight mechanical tamper, roller or vibratory system. The Engineer will perform one density test per 5000 cu yd (3800 cu m) and not less than one test per 2 ft (0.6 m) of lift.

Method of Measurement. Mechanically Stabilized Earth Retaining Wall will be measured for payment in square feet (square meters). The MSE retaining wall will be measured from the top of exposed panel line to the theoretical top of leveling pad line for the length of the wall as shown on the contract plans.

Basis of Payment. This work, including placement of the select fill within the soil reinforced wall volume shown on the approved shop drawings, precast face panels, soil reinforcing system, concrete leveling pad and accessories will be paid for at the contract unit price per square foot (square meter) for MECHANICALLY STABILIZED EARTH RETAINING WALL.

Concrete coping when specified on the contract plans will be included for payment in this work. Other concrete appurtenances such as anchorage slabs, parapets, abutment caps, etc. will not be included in this work, but will be paid for as specified elsewhere in this contract, unless otherwise noted on the plans.

Excavation necessary to place the select fill for the MSE wall shall be paid for as STRUCTURE EXCAVATION and/or ROCK EXCAVATION FOR STRUCTURES as applicable, according to Section 502.

Fill placed within the foot print of the reinforced soil mass, above the top layer of soil reinforcement and below the bottom of the subgrade or top soil, shall be included in the cost of the MSE wall.

Embankment placed outside of the select fill volume will be measured and paid for according to Sections 202 and/or 204 as applicable.

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.

ERECTION OF CURVED STEEL STRUCTURES

Effective: June 1, 2007

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 curved steel girder erection plans, for the completion of a project-specific erection plan. 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 MECHANICALLY STABILIZED EARTH RETAINING WALLS

Effective: January 6, 2003

Revised: December 29, 2014

Description. This work shall consist of preparing the design, furnishing the materials, and constructing the temporary mechanically stabilized earth (TMSE) retaining wall to the lines, grades and dimensions shown in the contract plans and as directed by the Engineer.

General. The TMSE retaining wall shall consist of a sacrificial fascia, a soil reinforcing system and select fill. The soil reinforcement shall have sufficient strength, quantity, and pullout resistance, beyond the failure surface within the select fill, as required by design. The material, fabrication, and construction shall comply with this Special Provision and the requirements specified by the supplier of the wall system selected by the Contractor for use on the project.

Suppliers. The Department maintains a pre-qualified list of proprietary structural systems allowed for temporary mechanically stabilized earth retaining walls. 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.

Submittals. The wall system supplier shall submit complete design calculations and shop drawings for the TMSE retaining wall system to the Engineer no later than 45 days prior to beginning construction of the wall. No work or ordering of materials for the structure shall be done by the Contractor until the submittal has been approved in writing by the Engineer. All shop drawing submittals shall be sealed by an Illinois Licensed Structural Engineer and shall include all details, dimensions, quantities and cross sections necessary to construct the wall and shall include, but not be limited to the following items:

- (a) Plan, elevation and cross section sheet(s) for each wall showing the following:
 - (1) A plan view of the wall indicating the offsets from the construction centerline to the face of the wall at all changes in horizontal alignment. The plan view shall show the limits of soil reinforcement and stations where changes in length and/or size of reinforcement occur. The centerline shall be shown for all drainage structures or pipes behind or passing through and/or under the wall.
 - (2) An elevation view of the wall indicating the elevations of the top of the sacrificial fascia. These elevations shall be at or above the top of sacrificial fascia line shown on the contract plans. This view shall show the elevations of the bottom of the sacrificial fascia, all steps in the base of the wall and the finished grade line. Each sacrificial fascia type, the number, size and length of soil reinforcement connected to the sacrificial fascia shall be designated. The equivalent uniform applied service (unfactored) nominal bearing pressure shall be shown for each designed wall section.
 - (3) A listing of the summary of quantities shall be provided on the elevation sheet of each wall.
 - (4) Typical cross section(s) showing the limits of the reinforced select fill volume included within the wall system, soil reinforcement, embankment material placed behind the select fill, sacrificial fascia, and their relationship to the right-of-way limits, excavation cut slopes, existing ground conditions and the finished grade line.
 - (5) All general notes required for constructing the wall.
- (b) The bottom of the sacrificial fascia shall be located at or below the theoretical bottom of sacrificial fascia line shown on the contract plans. The theoretical bottom of sacrificial fascia line shall be 1.5 ft. (450 mm) below finished grade line at the front face of the wall, unless otherwise shown on the plans.
- (c) All details of the sacrificial fascia and soil reinforcement placement around all appurtenances located behind, on top of, or passing through the soil reinforced wall volume such as parapets with anchorage slabs, foundations, and utilities etc. shall be clearly indicated. Any modifications to the design of these appurtenances to accommodate a particular system shall also be submitted for approval.
- (d) The details for the connection between the sacrificial fascia, and soil reinforcement shall be shown.

The initial submittal shall include three sets of TMSE retaining wall shop drawings and one set of calculations. One set of drawings will be returned to the Contractor with any corrections indicated. After approval, the Contractor shall furnish the Engineer with eight sets of corrected plan prints for distribution by the Department. No work or ordering of materials for the structure shall be done until the submittal has been approved by the Engineer.

Materials. The TMSE retaining walls shall conform to the supplier's standards as previously approved by the Department, and the following:

(a) The soil reinforcing system, which includes the soil reinforcement facing and all connection devices, shall be according to the following:

(1) Inextensible Soil Reinforcement. Steel reinforcement shall be according ASTM A 572 Grade 65 (450), ASTM A1064, ASTM A 1011 or ASTM A 463 Grade 50 (345).

(2) Extensible Soil Reinforcement. Geosynthetic reinforcement shall be monolithically fabricated from virgin high density polyethylene (HDPE) or high tenacity polyester (HTPET) resins having the following properties verified by mill certifications:

| <u>Property for Geosynthetic Reinforcement</u> | <u>Value</u> | <u>Test</u> |
|--|--------------|-------------|
| Minimum Tensile Strength | ** | ASTM D 6637 |

** as specified in the approved design calculations and shown on the shop drawings.

| <u>Property for HDPE</u> | <u>Value</u> | <u>Test</u> |
|--------------------------|---------------|--------------------------|
| Melt Flow Rate (g/cm) | 0.060 – 0.150 | ASTM D 1238, Procedure B |
| Density (g/cu m) | 0.941 – 0.965 | ASTM D 792 |
| Carbon Black | 2% (min) | ASTM D 4218 |

| <u>Property for HTPET</u> | <u>Value</u> | <u>Test</u> |
|--|--------------|-------------|
| Carboxyl End Group (CEG Max) (mmol/kg) | <30 | GRI-GG7 |
| Molecular Weight (M _n) | >25,000 | GRI-GG8 |

(3) Facing and Connection Devices.

Mesh facing and Loop Facing Connectors ASTM A1064 or ASTM A706 Grade 60 (420)
 Tie Strip Facing Connectors AASHTO M 270/M 270M Grade 50 (345)

Sacrificial fascia and connection devices used with geosynthetic soil reinforcement shall be manufactured from virgin or recycled polyvinyl chloride having the following properties:

| <u>Property for polyvinyl chloride</u> | <u>Value</u> | <u>Test</u> |
|---|--------------|-------------|
| Heat Deflection Temperature (°F) | 155 - 164 | ASTM D 1896 |
| Notched IZOD 1/8 inch @ 73°F (ft-lb/in) | 4 – 12 | ASTM D 256 |
| Coefficient of Linear Exp. (in/in/°F) | 3.5 – 4.5 | ASTM D 696 |
| Hardness, Shore D | 79 | ASTM D 2240 |

| <u>Property for polypropylene</u> | <u>Value</u> | <u>Test</u> |
|-----------------------------------|---------------|--------------------------|
| Melt Flow Rate (g/cm) | 0.060 – 0.150 | ASTM D 1238, Procedure B |
| Density (g/cu cm) | 0.88 – 0.92 | ASTM D 792 |

(g) The select fill, defined as the material placed in the reinforced volume behind the wall, shall be according to Sections 1003 and 1004 of the Standard Specifications and the following:

(7) Select Fill Gradation. Either a coarse aggregate or a fine aggregate may be used. For coarse aggregate, gradations CA 6 thru CA 16 may be used. If geosynthetic reinforcing is used, the coarse aggregate gradations shall be limited to CA 12 thru CA 16. For fine aggregate, gradations FA 1, FA 2, or FA 20 may be used.

(8) Select Fill Quality. The coarse or fine aggregate shall have a maximum sodium sulfate (Na₂SO₄) loss of 15 percent according to Illinois Modified AASHTO T 104.

(9) Select Fill Internal Friction Angle. The effective internal friction angle for the coarse or fine aggregate shall be a minimum 34 degrees according to AASHTO T 236 on samples compacted to 95 percent density according to Illinois Modified AASHTO T 99. The AASHTO T 296 test with pore pressure measurement may be used in lieu of AASHTO T 236. If the vendor's design uses a friction angle higher than 34 degrees, as indicated on the approved shop drawings, this higher value shall be taken as the minimum required.

(10) Test Frequency. Prior to start of construction, the Contractor shall provide an internal friction angle test results to show the select fill material meets the specification requirement. This test result shall be no more than 12 months old. In addition, a sample of select fill material will be obtained for testing and approval by the Department. Thereafter, the minimum frequency of sampling and testing by the department at the jobsite will be one per 40,000 tons (36,300 metric tons) of select fill material. Testing to verify the internal friction angle will be required when the wall design utilizes a minimum effective internal friction angle greater than 34 degrees, or when crushed coarse aggregate is not used.

- (h) The sacrificial fascia may consist of a wire mesh, geosynthetic fabric, geosynthetic reinforcement or other suitable material capable of retaining the select fill and transmitting the applied loading to the soil reinforcement. Wire mesh shall be fabricated from cold drawn steel conforming to AASHTO M32 (M32M) and shall be shop fabricated according to AASHTO M55 (M55M). The geosynthetic fabric shall be either a non-woven needle punch polyester or polypropylene or a woven monofilament polypropylene with a minimum non-sewn lap of 12 in. (300 mm) where necessary.
- (i) The embankment material behind the select fill shall be according to Section 202 and/or Section 204. An embankment unit weight of 120 lbs/cubic foot (1921 kg/cubic meter) and an effective friction angle of 30 degrees shall be used in the wall system design, unless otherwise indicated on the plans.

Design Criteria. The design shall be according to the applicable portions of the AASHTO LRFD Design Specifications for Mechanically Stabilized Earth Walls, except as modified herein. The wall supplier shall be responsible for all internal stability aspects of the wall design and shall supply the Department with computations for each designed wall section. The analyses of settlement, bearing capacity and overall slope stability will be the responsibility of the Department.

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

The design of the soil reinforcing system shall be according to the applicable design specifications for "Inextensible" steel or "Extensible" geosynthetic reinforcement criteria. The reduced section of the soil reinforcing system shall be sized to allowable stress levels at the end of a 3 year design life.

For steel soil reinforcement, the Corrosion protection for the 3 year design life shall be provided using a sacrificial steel thickness computed for all exposed surfaces.

Geosynthetic soil reinforcing systems shall be designed to account for the strength reduction due to long-term creep, chemical and biological degradation, as well as installation damage.

Typical design procedures and details, once accepted by the Department, shall be followed. All wall system changes shall be submitted in advance to the Department for approval.

The sacrificial fascia and its connection to the soil reinforcement shall be sized for a minimum design life of 3 years.

All soil reinforcement elements shall be directly connected to the sacrificial fascia and shall have an allowable pullout capacity, from the sacrificial fascia, based on the maximum tensile loading occurring in the soil reinforcement. The soil reinforcements maximum vertical center to center spacing shall be 20 in. (500 mm) and in the horizontal direction, the clear distance between the edge of one soil reinforcement to the next must not exceed 30 in. (760 mm).

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

The foundation soils supporting the structure shall be graded for a width equal to or exceeding the length of the soil reinforcement. Prior to wall construction, the foundation shall be compacted with a smooth wheel vibratory roller. Any foundation soils found to be unsuitable shall be removed and replaced, as directed by the Engineer, and shall be paid for separately according to Section 202.

As select fill material is placed behind a sacrificial fascia element, the sacrificial fascia element shall be maintained in its proper inclined position according to the supplier specifications and as approved by the Engineer. The sacrificial fascia shall be erected to insure that it is located within 3 in. (75 mm) from the nominal contract plan offset at any location.

The select fill and embankment placement shall closely follow the erection of each lift of sacrificial fascia. At each soil reinforcement level, the fill material should be roughly leveled and compacted before placing and attaching the soil reinforcing system. The soil reinforcement and the maximum lift thickness shall be placed according to the supplier's recommended procedures except, the lifts for select fill shall not exceed 10 in. (255 mm) loose measurement or as approved by the Engineer.

If a fine aggregate is used for the select fill, the maximum lift thickness placed within the zone 3 ft (1 m) behind the sacrificial fascia shall be reduced to 5 in. (125 mm). As an alternative, a coarse aggregate can be used for this zone without a reduced lift thickness.

Embankment shall be constructed according to Section 205.

At the end of each day's operations, the Contractor shall shape the last level of select fill to permit runoff of rainwater away from the wall face. Select fill shall be compacted according to the project specifications for embankment except the minimum required compaction shall be 95 percent of maximum density as determined by Illinois Modified AASHTO T 99. Select fill compaction shall be accomplished without disturbance or distortion of soil reinforcing system and sacrificial fascia. Compaction in a strip 3 ft. (1 m) wide adjacent to the backside of the sacrificial fascia shall be achieved using a minimum of 3 passes of a light weight mechanical tamper, roller or vibratory system. The Engineer will perform one density test per 5000 cu yd (3800 cu m) and not less than one test per 2 ft (0.6 m) of lift.

Method of Measurement. Temporary Mechanically Stabilized Earth Retaining Wall will be measured for payment in square feet (square meters). The wall will be measured from the top of exposed sacrificial fascia line to the theoretical bottom of sacrificial fascia line for the length of the wall as shown on the contract plans.

Basis of Payment. This work, including placement of the select fill within the soil reinforced wall volume shown on the approved shop drawings, sacrificial fascia, soil reinforcing system, and accessories will be paid for at the contract unit price per square foot (square meter) for TEMPORARY MECHANICALLY STABILIZED EARTH RETAINING WALL.

Concrete appurtenances such as anchorage slabs, parapets, abutment caps, etc. will not be included in this work, but will be paid for as specified elsewhere in this contract, unless otherwise noted on the plans.

All excavation necessary to construct the TMSE wall shall be paid for as STRUCTURE EXCAVATION according to Section 502.

Embankment placed outside of the select fill volume will be measured and paid for according to Section 202 and/or 204 as applicable.

BRACED EXCAVATION

Effective: August 9, 1995

Revised: May 18, 2011

Description. This work shall include the installation of a bracing system, excavation, and backfilling to the elevation of the existing grade according to Section 502 and the following. The bracing system shall be designed and installed to prevent the movement of soil, structures, pavements and/or utilities adjacent to the excavated area.

Construction Requirements. The bracing system shall support excavations by the use of sheeting, timber or plates. The Contractor shall submit design calculations and shop drawings prepared and sealed by an Illinois Licensed Structural Engineer for the bracing system. Shop drawings shall show all necessary details for the construction of the bracing system. The design calculations and shop drawings shall be submitted to the Engineer for review and approval.

This work shall not proceed without the approval and authorization of the Engineer. However, in any event, the Contractor shall be fully responsible for the safety, stability and adequacy of the bracing system and shall be solely responsible and liable for all damages resulting from his construction operations or from failure or inadequacy of the bracing system.

In the event the bracing system protecting the existing embankment fails or is otherwise inadequate, in the judgment of the Engineer, the Contractor shall, at his own expense, take all necessary steps to restore the embankments to a safe operating condition to the satisfaction of the Engineer.

Bracing members shall be installed as soon as an excavation level is reached to permit their installation. Bracing members shall be completely removed after the excavation is backfilled.

Method of Measurement. This work shall be measured in cubic yards (cubic meters) according to the requirements for structure excavation as specified in Section 502.12 of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price per cubic yard (cubic meter) for BRACED EXCAVATION. Payment for BRACED EXCAVATION will be limited to those locations shown on the plans. All sheeting and bracing members associated with braced excavation will not be measured for payment but shall be included in the cost for BRACED EXCAVATION. No separate payment will be made for structure excavation where BRACED EXCAVATION is shown.

BOND BREAKER FOR PRESTRESSED CONCRETE BULB-T BEAMS

Effective: April 19, 2012

Description. This work shall consist of furnishing and applying a bond breaker to the top flange of prestressed concrete bulb T-beams as detailed on the contract plans. After the beams have been erected at the job site and just prior to installation of the bridge deck reinforcement, portions of the top surface of the beams identified on the plans shall have one of the following bond breakers applied:

1. Two coats of Type I, II or III membrane curing compound according to Article 1022.01 and applied with a roller.
2. Two coats of protective coat according to Article 1023.01 and applied with a roller.
3. Bonded Roofing felt - 30 lbs. (13.6 kg)

The concrete surface shall be clean of loose debris and dry for a minimum of 2 hours prior to application of the bond breaking material. The temperature of the concrete and air shall be 40°F (4°C) or higher at the time of application.

For systems requiring multiple coats, the second coat may follow immediately after the first coat. Also, the material shall not be exposed to rain, snow, or foot traffic for a minimum period of 4 hours after application.

Damaged or compromised bond breaker, as determine by the Engineer, shall be repaired.

Basis of Payment. This work will not be measured for payment but shall be considered included in the cost for Concrete Superstructure.

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/ft²/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.”

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 (T₁ or T₂), according to ASTM C 920.”

CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)

Effective: June 1, 2010

Revised: November 1, 2014

The reduction of emissions of particulate matter (PM) for off-road equipment shall be accomplished by installing retrofit emission control devices. The term “equipment” refers to diesel fuel powered devices rated at 50 hp and above, to be used on the jobsite in excess of seven calendar days over the course of the construction period on the jobsite (including rental equipment).

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted using the phased in approach shown below. Equipment that is of a model year older than the year given for that equipment’s respective horsepower range shall be retrofitted:

| Effective Dates | Horsepower Range | Model Year |
|----------------------------|------------------|------------|
| June 1, 2010 ^{1/} | 600-749 | 2002 |
| | 750 and up | 2006 |
| June 1, 2011 ^{2/} | 100-299 | 2003 |
| | 300-599 | 2001 |
| | 600-749 | 2002 |
| | 750 and up | 2006 |
| June 1, 2012 ^{2/} | 50-99 | 2004 |
| | 100-299 | 2003 |
| | 300-599 | 2001 |
| | 600-749 | 2002 |
| | 750 and up | 2006 |

1/ Effective dates apply to Contractor diesel powered off-road equipment assigned to the contract.

2/ Effective dates apply to Contractor and subcontractor diesel powered off-road equipment assigned to the contract.

The retrofit emission control devices shall achieve a minimum PM emission reduction of 50 percent and shall be:

- a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (<http://www.epa.gov/cleandiesel/verification/verif-list.htm>), or verified by the California Air Resources Board (CARB) (<http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>); or
- b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

Note: Large cranes (Crawler mounted cranes) which are responsible for critical lift operations are exempt from installing retrofit emission control devices if such devices adversely affect equipment operation.

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

Construction shall not proceed until the Contractor submits a certified list of the diesel powered off-road equipment that will be used, and as necessary, retrofitted with emission control devices. The list(s) shall include (1) the equipment number, type, make, Contractor/rental company name; and (2) the emission control devices make, model, USEPA or CARB verification number, or performance certification from the retrofit device manufacturer. Equipment reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation, prior to being used on the jobsite.

The Contractor shall submit an updated list of retrofitted off-road construction equipment as retrofitted equipment changes or comes on to the jobsite. The addition or deletion of any diesel powered equipment shall be included on the updated list.

If any diesel powered off-road equipment is found to be in non-compliance with any portion of this special provision, the Engineer will issue the Contractor a diesel retrofit deficiency deduction.

Any costs associated with retrofitting any diesel powered off-road equipment with emission control devices 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. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

Diesel Retrofit Deficiency Deduction

When the Engineer determines that a diesel retrofit deficiency exists, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency continues to exist. The calendar day(s) will begin when the time period for correction is exceeded and end with the Engineer's written acceptance of the correction. The daily monetary deduction will be \$1,000.00 for each deficiency identified.

The deficiency will be based on lack of diesel retrofit emissions control.

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected. Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

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 **19.00%** 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.

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.

FRICITION 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 ^{5/}:</u> 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 ^{5/}:</u> Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{1/} Crushed Concrete |

| Use | Mixture | Aggregates Allowed | |
|------------------------------|--|---|---|
| HMA High ESAL Low ESAL | Binder IL-19.0 or IL-19.0L SMA Binder | <u>Allowed Alone or in Combination</u> ^{5/} : Crushed Gravel Carbonate Crushed Stone ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Concrete ^{3/} | |
| 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> ^{5/} : Crushed Gravel Carbonate Crushed Stone ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{4/} Crushed Concrete ^{3/} | |
| HMA High ESAL | D Surface and Leveling Binder IL-9.5 SMA Ndesign 50 Surface | <u>Allowed Alone or in Combination</u> ^{5/} : Crushed Gravel Carbonate Crushed Stone (other than Limestone) ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{4/} Crushed Concrete ^{3/} | |
| | | <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> ^{5/} : Crushed Gravel Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{4/} Crushed Concrete ^{3/} No Limestone. <u>Other Combinations Allowed:</u> <i>Up to...</i> | |
| | | <i>With...</i> | |

| Use | Mixture | Aggregates Allowed | |
|------------------|---|--|--|
| | | 50% Dolomite ^{2/} | Any Mixture E aggregate |
| | | 75% Dolomite ^{2/} | Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone |
| | | 75% Crushed Gravel or Crushed Concrete ^{3/} | Crushed Sandstone, Crystalline Crushed Stone, Crushed Slag (ACBF), or Crushed Steel Slag |
| HMA High ESAL | F Surface IL-9.5 SMA Ndesign 80 Surface | <u>Allowed Alone or in Combination</u> ^{5/} : | |
| | | 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 ^{3/} , or Dolomite ^{2/} | 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.”

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 \pm 0.01 (1.21 kg/sq m \pm 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: November 1, 2014

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 | 1040.07 |
| (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 | | | (0.079) | | | (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 | | | (2.01) | | | (2.01) | | | (2.77) | | | 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 | |
| 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 | | Span | | | Rise | | Steel | | Aluminum | | Steel | | Aluminum | | Steel | | Aluminum | | Steel | | Aluminum | |
| | (in.)* | (in.) | (in.) | (in.) | (in.) | (in.) | | (in.) | (in.) | 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" |
| | Fill Height: | | Fill Height: | | Fill Height: | | | Steel & Aluminum | | | | | | Steel & Aluminum | | | | | | Steel & Aluminum | | | | | |
| 3' and less | | 3' and less | | 3' and less | | | | | | | | Greater than 3' not exceeding 10' | | | | | | Greater than 10' not exceeding 15' | | | | | | | |
| 15 | 17 | 13 | | | | | 1'-6" | 0.064 | | | 0.060 | | 0.064 | | | 0.060 | | | 0.064 | | | 0.064 | | | 0.060 |
| 18 | 21 | 15 | | | | | 1'-6" | 0.064 | | | 0.060 | | 0.064 | | | 0.060 | | | 0.064 | | | 0.064 | | | 0.060 |
| 21 | 24 | 18 | | | | | 1'-6" | 0.064 | | | (0.075) | | 0.064 | | | 0.060 | | | 0.064 | | | 0.064 | | | 0.060 |
| 24 | 28 | 20 | | | | | 1'-6" | (0.079) | | | (0.105) | | 0.064 | | | 0.075 | | | 0.064 | | | 0.064 | | | 0.075 |
| 30 | 35 | 24 | | | | | 1'-6" | (0.079) | | | (0.105) | | 0.064 | | | 0.075 | | | (0.079) | | | 0.064 | | | (0.105) |
| 36 | 42 | 29 | | | | | 1'-6" | (0.079) | | | 0.105 | | 0.064 | | | 0.105 | | | 0.064 | | | 0.064 | | | 0.105 |
| 42 | 49 | 33 | | | | | 1'-6" | 0.109 | | | 0.105 | | (0.109) | | | 0.105 | | | (0.109) | | | 0.105 | | | 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 | 0.079 | (0.075) |
| 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 | 0.060 | 0.138 | 0.079 | (0.075) |
| 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 | 0.168 | 0.079 | 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 | 0.168 | 0.079 | 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 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 RCCP HE & A | Type 1 | | Type 2 | | Type 3 | |
| | Span | Rise | Span | Rise | | 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: November 1, 2014

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 | 1040.07 |
| (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.”

MECHANICAL SIDE TIE BAR INSERTER (BDE)

Effective: August 1, 2014

Revised: January 1, 2015

Add the following to Article 420.03 of the Standard Specifications:

“(k) Mechanical Side Tie Bar Inserters1103.18”

Revise Article 420.05(b) of the Standard Specifications to read:

- “(b) Longitudinal Construction Joint. The tie bars shall be installed using one of the following methods.
 - (1) Preformed or Drilled Holes. The tie bars shall be installed with an approved nonshrink grout or chemical adhesive providing a minimum pull-out strength as follows.

| Bar Size | Minimum Pull-Out Strength |
|----------------|---------------------------|
| No. 6 (No. 19) | 11,000 lb (49 kN) |
| No. 8 (No. 25) | 19,750 lb (88 kN) |

Holes shall be blown clean and dry prior to placing the grout or adhesive. If compressed air is used, the pneumatic tool lubricator shall be bypassed and a filter installed on the discharge valve to keep water and oil out of the lines. The installation shall be with methods and tools conforming to the grout or adhesive manufacturer’s recommendations.

The Contractor shall load test five percent of the first 500 tie bars installed. No further installation will be allowed until the initial five percent testing has been completed and approval to continue installation has been given by the Engineer. Testing will be required for 0.5 percent of the bars installed after the initial 500. For each bar that fails to pass the minimum requirements, two more bars selected by the Engineer shall be tested. Each bar that fails to meet the minimum load requirement shall be reinstalled and retested. The equipment and method used for testing shall meet the requirements of ASTM E 488. All tests shall be performed within 72 hours of installation. The tie bars shall be installed and approved before concrete is placed in the adjacent lane.”

- (2) Inserted. The tie bars shall be installed with the use of a mechanical side tie bar inserter. The inserter shall insert the tie bars with vibration while still within the extrusion process, after the concrete has been struck off and consolidated without deformation of the slab. The inserter shall remain stationary relative to the pavement when inserting tie bars, while the formless paver continues to move in the direction of paving.

A void greater than 1/8 in. (3 mm) at any location around the tie bar shall require immediate adjustment of the paving operation. A void greater than 1/2 in.(13 mm) shall be repaired with a nonshrink grout or chemical adhesive after the concrete has hardened. If at the end of the day of paving more than 20 percent of the tie bars show a void larger than 1/8 in. (3 mm) at any point around the bar, the use of the side tie bar inserter shall be discontinued.

- (3) Formed in Place. The tie bar shall be formed in place as shown on the plans.

The sealant reservoir shall be formed either by sawing after the concrete has set according to Article 420.05(a) or by hand tools when the concrete is in a plastic state.”

Add the following to Section 1103 of the Standard Specifications:

“**1103.18 Mechanical Side Bar Inserters.** The mechanical side tie bar inserter shall be self-contained and supported on the formless paver with the ability to move independently from the formless paver. The insertion apparatus shall vibrate within a frequency of 2000 to 6000 vpm. A vibrating reed tachometer, hand type, shall be provided according to Article 1103.12.”

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 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) | --“ |

PREFORMED PLASTIC PAVEMENT MARKING TYPE D - INLAID (BDE)

Effective: April 1, 2012

Revise subparagraph (c) and add subparagraph (i) to Article 780.02 of the Standard Specifications:

- “(c) Preformed Plastic Pavement Markings, Type B and Type C 1095.03
- (i) Preformed Plastic Pavement Marking, Type D 1095.10”

Revise the first paragraph of Article 780.07(a) of the Standard Specifications to read:

- “(a) Type B or D - Inlaid Application. On freshly placed HMA, the inlaid markings shall be applied before final compaction and when the pavement temperature has cooled to approximately 150 °F (65 °C) and when, in the opinion of the Engineer, the pavement is acceptable for vehicular traffic.”

Revise the first paragraph of Article 780.11 of the Standard Specifications to read:

“780.11 Inspection. The epoxy, thermoplastic, preformed thermoplastic, preformed plastic Type B, C, or D, and polyurea pavement markings will be inspected following installation, but no later than October 15 for preformed plastic markings, November 1 for thermoplastic and preformed thermoplastic markings, and December 15 for epoxy and polyurea markings. In addition, they will be inspected following a winter performance period that extends 180 days from November 1.”

Revise the ninth paragraph of Article 780.11 of the Standard Specifications to read:

“This performance inspection and performance acceptance of the epoxy, thermoplastic, preformed thermoplastic, preformed plastic Type B, C, or D, and polyurea markings shall not delay acceptance of the entire project and final payment due if the Contractor requires and receives from the subcontractor a third party "performance" bond naming the Department as obligee in the full amount of all pavement marking quantities listed in the contract, multiplied by the contract unit price. The bond shall be executed prior to acceptance and final payment of the non-pavement marking items and shall be in full force and effect until final performance inspection and performance acceptance of the epoxy, thermoplastic, preformed thermoplastic, preformed plastic, and polyurea pavement markings. Execution of the third party bond shall be the option of the Contractor.”

Revise the first paragraph of Article 780.13 of the Standard Specifications to read:

“780.13 Basis of Payment. This work will be paid for at the contract unit prices per foot (meter) of applied line width, as specified, for THERMOPLASTIC PAVEMENT MARKING - LINE; PAINT PAVEMENT MARKING - LINE; EPOXY PAVEMENT MARKING - LINE; PREFORMED PLASTIC PAVEMENT MARKING - LINE - TYPE B, C, B – INLAID, or D - INLAID; PREFORMED THERMOPLASTIC PAVEMENT MARKING – LINE, POLYUREA PAVEMENT MARKING TYPE I – LINE, POLYUREA PAVEMENT MARKING TYPE II - LINE; and/or per square foot (square meter) for THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS; PAINT PAVEMENT MARKING - LETTERS AND SYMBOLS; EPOXY PAVEMENT MARKING - LETTERS AND SYMBOLS; PREFORMED PLASTIC PAVEMENT MARKING - TYPE B, C, B – INLAID, or D - INLAID - LETTERS AND SYMBOLS; PREFORMED THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS.”

Add the following to Section 1095 of the Standard Specifications:

“1095.10 Preformed Plastic Pavement Marking, Type D. The preformed patterned markings shall consist of a white or yellow tape with wet retroreflective media incorporated to provide immediate and continuing retroreflection during both wet and dry conditions. The pavement marking shall be manufactured without the use of heavy metals including lead chromate pigments or other similar, lead-containing chemicals.

The white and yellow preformed plastic pavement markings shall meet the Type B requirements of Article 1095.03(b), (c), (d), (e), (i), (l), (m), (n) and the following.

- (a) Composition. The pliant polymer pavement markings shall consist of a mixture of high-quality polymeric materials, pigments and glass beads distributed throughout its base cross-sectional area, with a layer of wet retroreflective media bonded to a durable polyurethane topcoat surface. The patterned surface shall have approximately 40% ± 10% of the surface area raised and presenting a near vertical face to traffic from any direction. The channels between the raised areas shall be substantially free of exposed beads or particles.
- (b) Retroreflectance. The white and yellow markings shall meet the following for initial dry and wet retroreflectance.
 - (1) Dry Retroreflectance. Dry retroreflectance shall be measured under dry conditions according to ASTM D4061 and meet the values described in Article 1095.03(l) for Type B.
 - (2) Wet Retroreflectance. Wet retroreflectance shall be measured under wet conditions according to ASTM E2177 and meet the values shown in the following table.

| Wet Retroreflectance, Initial R_L | |
|--|---------------------------------|
| Color | R_L 1.05/88.76 |
| White | 300 |
| Yellow | 200 |

- (c) Color. The material shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45 degrees circumferential/zero degree geometry, illuminant D65, and a two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

| Color | Daylight Reflectance %Y |
|---------|-------------------------|
| White | 65 minimum |
| *Yellow | 36-59 |

*Shall match Federal 595 Color No. 33538 and the chromaticity limits as follows.

| | | | | |
|---|-------|-------|-------|-------|
| x | 0.490 | 0.475 | 0.485 | 0.530 |
| y | 0.470 | 0.438 | 0.425 | 0.456 |

- (d) Sampling, Testing, Acceptance, and Certification. Prior to approval and use of the preformed pavement marking materials, the manufacturer shall submit a notarized certification from an independent laboratory, together with the results of all tests, stating that the material meets the requirements as set forth herein. The certification test report shall state the lot tested, manufacturer's name, and date of manufacture.

After approval by the Department, samples and certification by the manufacturer shall be submitted for each batch used. The manufacturer shall submit a certification stating that the material meets the requirements as set forth herein and is essentially identical to the material sent for qualification. The certification shall state the lot tested, manufacturer's name, and date of manufacture."

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."

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 on 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. (± 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.”

SPEED DISPLAY TRAILER (BDE)

Effective: April 2, 2014

Add the following to Article 701.15(l) of the Standard Specifications:

“(l) Speed Display Trailer. A speed display trailer shall be utilized on freeways and expressways as part of Highway Standard 701400. The trailer shall be placed on the right hand side of the roadway adjacent to, or within 100 ft (30 m) beyond, the first work zone speed limit sign.

Whenever the speed display trailer is not in use, it shall be considered non-operating equipment and shall be stored according to Article 701.11.”

Add the following to Article 701.20 of the Standard Specifications:

“(k) Speed Display Trailer will be paid for at the contract unit price per calendar month or fraction thereof for each trailer as SPEED DISPLAY TRAILER.”

Add the following to Article 1106.02 of the Standard Specifications:

“(o) Speed Display Trailer. The speed display trailer shall consist of a LED speed indicator display with self-contained, one-direction radar mounted on an orange see-through trailer. The height of the display and radar shall be such that it will function and be visible when located behind concrete barrier.

The speed measurement shall be by radar and provide a minimum detection distance of 1000 ft (300 m). The radar shall have an accuracy of ± 1 mile per hour.

The speed indicator display shall face approaching traffic and shall have a sign legend of “YOUR SPEED” immediately above or below the speed display. The digital speed display shall show two digits (00 to 99) in mph. The color of the changeable message legend shall be a yellow legend on a black background. The minimum height of the numerals shall be 18 in. (450 mm), and the nominal legibility distance shall be at least 750 ft (250 m).

The speed indicator display shall be equipped with a violation alert that flashes the displayed detected speed when the posted limit is exceeded. The speed indicator shall have a maximum speed cutoff. The display shall include automatic dimming for nighttime operation.

The speed indicator measurement and display functions shall be equipped with the power supply capable of providing 24 hours of uninterrupted service.”

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, algacides, 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 **4**. In the event the Contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The Contractor shall also insure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the Contractor’s needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the Contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. The Contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The Contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather 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 4. 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.

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 ± 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

The Contractor shall provide 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 on the jobsite; or used for the delivery and/or removal of equipment/material to and from the jobsite. The jobsite shall also include offsite locations, such as plant sites or storage sites, when those locations are used solely for this contract.

The report shall be submitted on the form provided by the Department within ten business days following the reporting period. The reporting period shall be Monday through Sunday for each week reportable trucking activities occur. The report shall be submitted to the Engineer and a copy shall be provided to the district EEO Officer.

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: August 1, 2013

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 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. The adjustments shall not apply to bituminous prime coats, tack coats, crack filling/sealing, or joint filling/sealing.

The bidder shall indicate on the attached form whether or not this special provision will be part of the contract and submit the completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of bituminous materials cost adjustments.

Method of Adjustment. Bituminous materials cost adjustments will be computed as follows.

$$CA = (BPI_P - BPI_L) \times (\%AC_V / 100) \times Q$$

- Where: CA = Cost Adjustment, \$.
 BPI_P = Bituminous Price Index, as published by the Department for the month the work is performed, \$/ton (\$/metric ton).
 BPI_L = Bituminous Price Index, as published by the Department for the month prior to the letting, \$/ton (\$/metric ton).
 %AC_V = Percent of virgin Asphalt Cement in the Quantity being adjusted. For HMA mixtures, the % AC_V will be determined from the adjusted job mix formula. For bituminous materials applied, a performance graded or cutback asphalt will be considered to be 100% AC_V and undiluted emulsified asphalt will be considered to be 65% AC_V.
 Q = Authorized construction Quantity, tons (metric tons) (see below).

For HMA mixtures measured in square yards: $Q, \text{ tons} = A \times D \times (G_{mb} \times 46.8) / 2000$. 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, 2009

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 work added by adjusted unit price will be subject to fuel cost adjustment only when the category representing the added work was subject to the fuel cost adjustment. Added work paid for by time and materials 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_P = Fuel Price Index, as published by the Department for the month the work is performed, \$/gal (\$/liter)
FPI_L = Fuel Price Index, as published by the Department for the month prior to the letting, \$/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.

Progress Payments. 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.

Final Quantities. Upon completion of the work and determination of final pay quantities, an adjustment will be prepared to reconcile any differences between estimated quantities previously paid and the final quantities. The value for the balancing adjustment will be based on a weighted average of FPI_P and Q only for those months requiring the cost adjustment. The cost adjustment will be applicable to the final measured quantities of all applicable pay items.

Basis of Payment. Fuel cost adjustments may be positive or negative but will only be made when there is a difference between the FPI_L and FPI_P in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(FPI_L - FPI_P) \div FPI_L\} \times 100$$

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: April 1, 2009

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 has a contract value of \$10,000 or greater.

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. 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:** _____

IEPA PERMIT



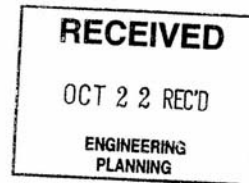
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217)782-2829
PAT QUINN, GOVERNOR LISA BONNETT, DIRECTOR

217/782-3362

OCT 16 2013

U.S. Army Corps of Engineers, Chicago District
ATTN: Regulatory Branch
231 South LaSalle, Suite 1500
Chicago, IL 60604



Re: Illinois State Toll Highway Authority (Cook and DuPage County)
Elgin O'Hare Western Access - Chicago
Log # C-0396-12 [CoE appl. # LRC-2007-802]

Gentlemen:

This Agency received a request on December 20, 2012 from Illinois State Toll Highway Authority requesting necessary comments concerning the proposed construction of new tollway alignments and improvements to existing corridors to form the Elgin O'Hare Western Access project near Chicago. We offer the following comments.

Based on the information included in this submittal, it is our engineering judgment that the proposed project may be completed without causing water pollution as defined in the Illinois Environmental Protection Act, provided the project is carefully planned and supervised.

These comments are directed at the effect on water quality of the construction procedures involved in the above described project and are not an approval of any discharge resulting from the completed facility, nor an approval of the design of the facility. These comments do not supplant any permit responsibilities of the applicant toward the Agency.

This Agency hereby issues certification under Section 401 of the Clean Water Act (PL 95-217), subject to the applicant's compliance with the following conditions:

1. The applicant shall not cause:
 - a. violation of applicable water quality standards of the Illinois Pollution Control Board, Title 35, Subtitle C: Water Pollution Rules and Regulations;
 - b. water pollution defined and prohibited by the Illinois Environmental Protection Act;
 - c. interference with water use practices near public recreation areas or water supply intakes; or
 - d. violation of applicable provisions of the Illinois Environmental protection Act.
2. The applicant shall implement measures that ensure consistency with the assumptions and requirements of the approved Total Maximum Daily Load (TMDL) allocation for chloride.
3. The applicant shall provide adequate planning and supervision during the project construction period for implementing construction methods, processes and cleanup procedures necessary to prevent water pollution and control erosion.

4302 N. Main St., Rockford, IL 61103 (815)987-7760
595 S. State, Elgin, IL 60123 (847)608-3131
2125 S. First St., Champaign, IL 61820 (217)278-5800
2009 Mall St., Collinsville, IL 62234 (618)346-5120

9511 Harrison St., Des Plaines, IL 60016 (847)294-4000
5407 N. University St., Arbor 113, Peoria, IL 61614 (309)693-5462
2309 W. Main St., Suite 116, Marion, IL 62959 (618)993-7200
100 W. Randolph, Suite 10-300, Chicago, IL 60601 (312)814-6026

PLEASE PRINT ON RECYCLED PAPER

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Log No. C-0396-12

4. Any spoil material excavated, dredged or otherwise produced must not be returned to the waterway but must be deposited in a self-contained area in compliance with all state statutes, regulations and permit requirements with no discharge to waters of the State unless a permit has been issued by this Agency. Any backfilling must be done with clean material and placed in a manner to prevent violation of applicable water quality standards.
5. All areas affected by construction shall be mulched and seeded as soon after construction as possible. The applicant shall undertake necessary measures and procedures to reduce erosion during construction. Interim measures to prevent erosion during construction shall be taken and may include the installation of staked straw bales, sedimentation basins and temporary mulching. All construction within the waterway shall be constructed during zero or low flow conditions. The applicant shall be responsible for obtaining an NPDES Storm Water Permit prior to initiating construction if the construction activity associated with the project will result in the disturbance of 1 (one) or more acres, total land area. An NPDES Storm Water Permit may be obtained by submitting a properly completed Notice of Intent (NOI) form by certified mail to the Agency's Division of Water Pollution Control, Permit Section.
6. The chloride offset program to mitigate for increased chloride loading in the chloride TMDL watersheds shall be implemented. The program is outlined on the documents titled "Framework for Chloride Mitigation Memorandum", "Liquid Deicing Options and Evaluation for the Elgin O'Hare Western Access Project", "Supplemental Information: Section 401 Clean Water Act Permit Application – Elgin O'Hare Western Access (EOWA) Project/Initial Construction Plan", "Section 3.0 Section 401 Clean Water Act Application Materials", and "Fact Sheet: Elgin O'Hare Western Access Chloride Mitigation" all received by the Agency on July 18, 2013. Modifications to the chloride offset program plan must be submitted to the Agency for approval. The permittee shall submit an annual report by July 1 of each year covering the previous year's activity. The report shall consist of the following:
 - a. A list of all partnering units of government whom are current signatories on an Intergovernmental Agreement (IGA).
 - b. A copy of the IGAs signed since the previous submitted report.
 - c. For each partnering unit of government including the Illinois Tollway, include a summary raw data report that includes the following data for the most recent winter season; 1) total lane miles maintained, 2) actual road salt usage in tons per lane mile, 3) baseline road salt usage in tons per lane mile, 4) target road salt usage in tons per lane mile, 5) total winter season precipitation events requiring deicing effort, 6) average precipitation in inches of snow, ice and liquid form of winter season precipitation per precipitation event, 7) duration of each operator deicing efficiency training session and number of operators attending, and 8) new equipment installation and new practices implemented and identification of installation and practices planned.
 - d. For each TMDL watershed (West Branch DuPage River, Salt Creek, Higgins Creek, Addison Creek) provide a graphical data presentation showing the past five years (if available) total road salt usage in tons, total winter weather precipitation in inches liquid form, and provide an annual stream monitoring report for the project area.
 - e. A discussion of program progress and efforts regarding existing and new partnering communities. Discussion should include the following; 1) a breakdown of funding provided through the Tollway to partnering communities, 2) assessments or reevaluations of current

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deicing practices, 3) baseline road salt usage conditions, 4) program goals and salt reduction targets or refinements thereof, 5) weather trends, 6) efficient deicing practices training performed and attended, and 6) a discussion of lessons learned and program adjustments.

- f. An assessment of program effectiveness and if necessary a schedule of measures to be implemented to modify the program to meet the requirements of this certification.

The subject report shall be submitted to :

Illinois Environmental Protection Agency
Bureau of Water
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

7. At such time that sufficient information has been collected regarding the requirements of condition number 6 of this certification the permittee may request a reevaluation of the reporting and monitoring requirements contained therein for possible reduction or elimination. For the purpose of re-evaluating the monitoring and reporting requirements of condition number 6, "sufficient information" shall be defined as a minimum of five (5) successive years of post-project completion winter season reporting. Such request shall be accompanied by a report that includes cumulative data and analysis that demonstrates that the chloride offset program as proposed in this request for certification and all subsequent modifications has succeeded in accomplishing the requirement for no increase in chloride loading to the chloride impaired waters that are chloride impaired.
8. The mitigation plan consisting of submitted documents titled "Pine Dunes Mitigation Rule Compliance" received by the Agency on May 13, 2013, "Technical Memorandum - Pine Dunes Wetland and Water Mitigation Area" dated August 20, 2013, and "Spring Brook Waters Mitigation" received by the Agency September 17, 2013 shall be implemented. Modifications to the mitigation plan must be submitted to the Agency for approval. The permittee shall submit annual reports by July 1 of each calendar year on the status of the mitigation. The first annual report shall include a hydric soils determination that represents the soils at the completion of initial construction for the wetland mitigation site(s). The permittee shall monitor the mitigation for 5 years after the completion of initial construction. A final report shall be submitted within 90 days after completion of a 5-year monitoring period. Each annual report and the final report shall include the following: IEPA Log No., date of completion of initial construction, representative photographs, floristic quality index, updated topographic maps, description of work in the past year, the performance standards for the mitigation as stated in the mitigation plan, and the activities remaining to complete the mitigation plan. For wetland mitigation sites containing non-hydric soils at the time of initial construction, the final report shall include a hydric soils determination that represents the soils at the end of the 5-year monitoring period. For mitigation provided by purchase of mitigation banking credits, in lieu of the above monitoring and reporting, the permittee shall submit written proof from the mitigation bank that the credits have been purchased within thirty (30) days of said purchase. The subject reports and proof of purchase of mitigation credits shall be submitted to:

Illinois Environmental Protection Agency
Bureau of Water
Permit Section
1021 North Grand Avenue East
Post Office Box 19276

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Springfield, Illinois 62794-9276

9. The applicant shall implement erosion control measures consistent with the "Illinois Urban Manual" (IEPA/USDA, NRCS; 2012).
10. Asphalt, bituminous material and concrete with protruding material such as reinforcing bar or mesh shall not be 1) used for backfill, 2) placed on shorelines/streambanks, or 3) placed in waters of the State.
11. The proposed work shall be constructed with adequate erosion control measures (i.e., silt fences, straw bales, etc.) to prevent transport of sediment and material downstream.
12. The fill material used for temporary work areas in waters of the State shall be predominantly sand or larger size material, with <20% passing a #230 U. S. sieve.
13. The applicant is advised that the following permit(s) must be obtained from the Agency: the applicant must obtain permits to construct sanitary sewers, water mains and related facilities prior to construction.

This certification becomes effective when the Department of the Army, Corps of Engineers, includes the above conditions # 1 through # 13 as conditions of the requested permit issued pursuant to Section 404 of PL 95-217.

This certification does not grant immunity from any enforcement action found necessary by this Agency to meet its responsibilities in prevention, abatement, and control of water pollution.

Sincerely,



Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

SAK:DLH:DRG:C-0396-12_401 WQ Certification_20Dec12 final.docx

cc: IEPA, Records Unit
IEPA, DWPC, FOS,
IDNR, Bartlett
USEPA, Region 5
Illinois State Toll Highway Authority, 2700 Ogden Avenue, Downers Grove
DRG

404 PERMIT



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
CHICAGO DISTRICT, CORPS OF ENGINEERS
231 SOUTH LA SALLE STREET
CHICAGO, ILLINOIS 60604-1437

March 13, 2014

Technical Services Division
Regulatory Branch
LRC-2007-00802

SUBJECT: Signed Permit to Impact 24.85 Acres of Wetlands and 2.97 Acres of Waterways for the Construction of Elgin O'Hare West Access (EOWA) located West of O'Hare Airport from Gary Avenue in the West to the Western Edge of O'Hare Airport in the East and from I-90 in the North near the Elmhurst Road Interchange to I-294 in the South in DuPage and Cook Counties, Illinois

Paul Kovacs
Illinois State Toll Highway Authority
2700 Ogden Avenue
Downers Grove, Illinois 60515

Dear Mr. Kovacs:

The U.S. Army Corps of Engineers has authorized the above-referenced project under Section 404 of the Clean Water Act, as described in your notification and as shown on plans titled, "Tier Two Preferred Alternative Geometry", dated July 16, 2012, prepared by the Illinois Department of Transportation including all relevant documentation to the project plans as proposed. Enclosed is your copy of the executed permit which becomes effective on the date of this letter.

This determination covers only your project as described above. If the design, location, or purpose of the project is changed, you should contact this office to determine the need for further authorization. **Due to preliminary development of the approved plans, each contract must be further approved by the Corps following development of the final build plans, as described condition #7 of the enclosed permit.** Each contract will be approved through a modification, or refinement, of this permit.

If it is anticipated that the activity as described cannot be completed within the time limits of the authorization, you must submit a request for a time extension to this office at least thirty (30) calendar days prior to the expiration date of your permit. Failure to do so will result in the District's re-evaluation of your project, which may include the issuance of a public notice.

Once you have completed your project, please sign and return the enclosed compliance certification. If you have any questions, please contact Mr. Soren Hall of my staff by telephone at 312-846-5532, or email at Soren.G.Hall@usace.army.mil.

Sincerely,



Leesa A. Beal
Chief, Regulatory Branch

Enclosure

Copy furnished (with authorization):

U.S. Environmental Protection Agency (Wendy Melgin)
Illinois Department of Natural Resources/OWR (Gary Jereb)
Illinois Environmental Protection Agency (Thad Faught)
Illinois Department of Natural Resources (Pat Malone)
Illinois Department of Natural Resources (Bob Rung)
Christopher B. Burke Engineering (Jedd Anderson)
Forest Preserve District of DuPage County (John Oldenburg)
CH2MHill (Larry Martin)



**PERMIT COMPLIANCE
CERTIFICATION**

Permit Number: LRC-2007-00802
Permittee: Paul Kovacs
Illinois State Toll Highway Authority
Date of Issuance: February 25, 2014

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of said permit and if applicable, compensatory wetland mitigation was completed in accordance with the approved mitigation plan.¹

PERMITTEE

DATE

Upon completion of the activity authorized by this permit and any mitigation required by the permit, this certification must be signed and returned to the following address:

U.S. Army Corps of Engineers
Chicago District, Regulatory Branch
111 North Canal Street, 6th Floor
Chicago, Illinois 60606-7206

Please note that your permitted activity is subject to compliance inspections by Corps of Engineers representatives. If you fail to comply with this permit, you may be subject to permit suspension, modification, or revocation.

¹ If compensatory mitigation was required as part of your authorization, you are certifying that the mitigation area has been graded and planted in accordance with the approved plan. You are acknowledging that the maintenance and monitoring period will begin after a site inspection by a Corps of Engineers representative or after thirty days of the Corps' receipt of this certification. You agree to comply with all permit terms and conditions, including additional reporting requirements, for the duration of the maintenance and monitoring period.



DEPARTMENT OF THE ARMY

PERMIT

PERMITTEE: Paul Kovacs
Illinois State Toll Highway Authority

APPLICATION: LRC-2007-00802

ISSUING OFFICE: U.S. Army Corps of Engineers, Chicago District

DATE: MAR 17 2014

You are hereby authorized to perform work in accordance with the terms and conditions specified below.

Note: The term "you" and its derivatives, as used in this authorization, means the permittee or any future transferee. The term "this office" refers to the U.S. Army Corps of Engineers, Chicago District (Corps).

PROJECT DESCRIPTION: Authorization to impact 24.85 acres of wetlands and 2.97 acres of waterways for the construction of the Elgin O'Hare West Bypass (EOWB) also called Elgin O'Hare West Access (EOWA), as described in your notification and as shown on the plans titled, "Tier Two Preferred Alternative Geometry", dated July 16, 2012, prepared by the Illinois Department of Transportation. The EOWB is a transportation improvement project which includes 16 miles of new toll road, 9 miles of toll road improvements (I-90 and I-294) and 16 miles of arterial road improvements. The project also includes new or modified system interchanges, local access interchanges, frontage roads, transit facilities, and bicycle/pedestrian facilities.

To offset wetland impacts from the project, approximately 39.2 acres of wetland mitigation credits will be generated at "Pine Dunes" off site mitigation area. In addition, the site will also generate approximately 21.69 acres of wetland credits per IDNR mitigation requirements for a total of 60.89 acres of wetland credit. The final mitigation plan is titled, "Pine Dunes Wetland Mitigation Area Project Documentation in Support of the Section 4040 Permit Application", dated January 27, 2014, prepared by Christopher B. Burke Engineering.

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To compensate for 2.97 acres of impacts to waters, 3,200 feet of stream will be restored through the completion of the final mitigation plan titled "Spring Brook Mitigation Site Report", dated February, 2014 (revised February 21, 2014), prepared by the Illinois State Toll Highway Authority

PROJECT LOCATION: The project is located west of O'Hare airport and spans 10 miles in the Elgin O'Hare (EO) corridor and 6.2 miles in the West Bypass (WB) corridor. The EO corridor is located from Gary Avenue in the west to the western edge of O'Hare Airport in the east. The WB corridor is located from I-90 in the north near the Elmhurst Road interchange to I-294 in the south. Both corridors are located in Cook and DuPage Counties in Illinois.

GENERAL CONDITIONS:

1. The time limit for completing the authorized work ends on December 1, 2023. If you find that you need more time to complete the authorized activity(s), submit your request for a time extension to this office for consideration at least 60 days before the above 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. You shall comply with the water quality certification issued under Section 401 of the Clean Water Act by the Illinois Environmental Protection Agency for the project. Conditions of the certification are conditions of this authorization. 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 accomplished in accordance with the terms and conditions of your permit.

- 3 -

The following special conditions are a requirement of your authorization:

1. This authorization is based on the materials submitted as part of application number LRC-2007-00802. Failure to comply with the terms and conditions of this authorization may result in suspension and revocation of your authorization.
2. You shall undertake and complete the project as described in the plans titled, "Tier Two Preferred Alternative Geometry", dated July 16, 2012, prepared by the Illinois Department of Transportation including all relevant documentation to the project plans as proposed. Due to preliminary development of the approved plans (developed to 30% completion), each contract must be further approved by the Corps following development of the final build plans as described below (see condition #7) below. Each contract should be approved through a modification of this permit;
3. To compensate for impacts to wetlands associated with the project, you shall fully implement the final mitigation plan titled, "Pine Dunes Wetland Mitigation Area Project Documentation in Support of the Section 4040 Permit Application", dated January 27, 2014, prepared by Christopher B. Burke Engineering within the first year from the date of permit issuance. All wetlands shall meet performance criteria in accordance with the approved mitigation document, referenced above. Your responsibility to complete the required compensatory mitigation will not be considered fulfilled until you have demonstrated compensatory mitigation project success and have received written verification of that success from the U.S. Army Corps of Engineers.
4. To compensate for impacts to waterways associated with the project, you shall fully implement the final mitigation plan titled, "Spring Brook Mitigation Site Report", dated February, 2014 (revised February 21, 2014), prepared by the Illinois State Toll Highway Authority within the first year from the date of permit issuance. The plan shall meet performance criteria in accordance with the approved mitigation document, referenced above. Your responsibility to complete the required compensatory mitigation will not be considered fulfilled until you have demonstrated compensatory mitigation project success and have received written verification of that success from the U.S. Army Corps of Engineers.
5. You shall insure that all remaining wetlands, created wetlands and adjacent upland buffers associated with the Pine Dunes Mitigation Site are protected through a permanent deed restriction. The approved construction drawings and USACE authorization number shall be included as an exhibit in the deed, and recorded with the Registrar of Deeds or other appropriate office charged with the responsibility for maintaining records of title or interest in real estate property. Recording of the approved deed restriction shall occur within 90 days of receipt of this authorization.
6. You shall insure that the mitigation areas as defined in the Spring Brook Creek mitigation document are protected through a permanent deed restriction. The approved construction drawings and USACE authorization number shall be included as an exhibit in the deed, and recorded with the Registrar of Deeds or other appropriate office charged with the

- 4 -

responsibility for maintaining records of title or interest in real estate property. Recording of the approved deed restriction shall occur within 90 days of receipt of this authorization.

7. This authorization is contingent upon implementing and maintaining soil erosion and sediment controls in a serviceable condition throughout the duration of the project. You shall comply with the project's soil erosion and sediment control (SESC) plans and the installation and maintenance requirements of the SESC practices on-site. You shall notify this office any changes or modifications to the approved plan set. Please be aware that field conditions during project construction may require the implementation of additional SESC measures for further protection of aquatic resources. If you fail to implement corrective measures, this office may require more frequent site inspections to ensure the installed SESC measures are acceptable. Please be aware that work authorized herein may not commence until you receive written notification from this office that your plans meet technical standards.

As part of the soil erosion and sediment control (SESC) process, you are required to retain a qualified Independent SESC Inspector (ISI) to review the project's SESC plans and provide a detailed narrative that explains the measures to be implemented at the project site. The ISI is also required to perform site inspections of the implemented SESC measures to ensure proper installation and regular maintenance of the approved methods. The following requirements apply:

- a. Work authorized herein shall not commence until you have written approval from this office that your SESC plans meets technical standards. In addition, you shall contact this office prior to the preconstruction meeting so that a representative of this office may attend. The meeting agenda will include a discussion of the SESC plan and the installation and maintenance requirements of the SESC practices on the site.
- b. Prior to commencement of any in-stream work, you shall submit construction plans and a detailed narrative to this office that discloses the contractor's preferred method of cofferdam and dewatering method. Work in the waterway shall NOT commence until this office notifies you, in writing, that the plans have been approved.
- c. You shall retain a qualified SESC inspector to perform periodic inspections of the implemented SESC measures to ensure proper installation and regular maintenance of the approved methods. The contact information for the Independent SESC Inspector (ISI) shall be submitted to this office via e-mail and/or hard copy prior to the Corps counter-signature on the permit and prior to commencement of the permitted work;
- d. Provide prior notification to a representative of this office and to the designated Independent SESC Inspector of the pre-construction meeting at least ten (10) calendar days in advance. The meeting shall be held to review the Corps approved SESC plans and if applicable, to discuss any necessary changes as required. The SESC inspector shall submit digital photographs of the SESC measures to the Corps on a weekly basis during the active and non-active phases of construction

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- that represent the existing conditions of the site. Photographs shall be submitted at the completion of the project once the SESC measures have been removed and the area has been restored to pre-construction conditions; and
- e. You shall contact this office immediately in the event of any changes or modifications to the approved plan set and non-compliance and/or failure/inadequacy of an existing SESC method(s). Upon direction of the Corps, corrective measures shall be instituted at the site to correct the problem along with additional SESC measures which may be needed to ensure further protection of the resource and/or to restore the impacted jurisdictional area(s).
8. You will utilize the practices identified in the Best Management Practices (BMP) Plan titled, "Water Quality Best Management Practices", dated November, 2013, prepared by the Illinois State Toll Highway Authority as a basis for the construction of the individual contract package BMP plans. It is understood that the above plan is preliminary and the final BMP plan details and requirements will be identified during the review of each contract by this office. The BMPs for each contract must be implemented within the first year following the approval of each contract/construction package. Your responsibility to complete the final approved BMP plans will not be considered fulfilled until you have demonstrated BMP success and have received written verification of that success from the U.S. Army Corps of Engineers.
 9. You shall provide written notification (CD acceptable) to this office prior to the start of work for each contract/construction package. Engineering plans will be submitted at 60% design and approved at 95% design. Such notification must also include (but not limited to):
 - a. Contract scope of work including a discussion of any changes in the footprint or significant design changes between the 30% and 60% plans;
 - b. Proposed resource impacts
 - c. Minimization of resource impacts that occurred between 30% and 60% plan development;
 - d. Post-construction BMPs including the following: The final BMP plan shall be a stand-alone document with a cover page (title, date, contract number, etc.) If applicable, a narrative shall be included that discusses changes in the plan from the approved plan as referenced in item 6 above. The written narrative shall describe how the water quality protection practices were selected for the project site. The narrative shall thoroughly describe the BMPs that will be utilized. A management and monitoring plan shall be provided and will include performance standards such as the BMP's ability to function as designed, percent coverage of vegetation, stabilization of soils, and corrective measures to bring areas into compliance.
 - e. Waterway crossings and in-stream work documentation that identifies any in-stream work locations and compliance with condition #12 below, as well as the following: Crossing of waterways and /or wetlands shall be culverted, bridged or otherwise designed to prevent the restriction of expected high water flows. They shall be designed so as not to impede low water flows or the safe passage of fish

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and aquatic organisms. An alternative analysis shall be prepared for perennial stream crossings where a culvert is proposed. The analysis shall document why the use of an arch-span, bottomless culvert or bridging would not be a practicable alternative. If use of a multi-barrel pipe culvert is proposed, document why a single box-culvert system cannot be used. For culverts, the upstream and downstream invert shall be embedded 6 to 12 inches below the streambed elevation. This will allow the natural substrate to colonize the structure's bottom, encourage fish movement and maintain the existing channel slope. Culvert slope should match adjacent stream slope. The width of the base flow culvert shall be approximately equal to the average channel width to promote the safe passage of fish and other aquatic organisms. Culverts shall not permanently widen/constrict the channel or reduce/increase stream depth. Multiple pipe culverts may not be used to receive base flows.

- f. Contract Scheduling and Implementation;
- g. Contract plans (grading, soil erosion and sediment control, BMP, drainage, landscaping, bridge/culvert plans and details, etc.) at 60% design level;
- h. Utility relocation plans;
- i. Contract overview, BMP overview, and contract overview maps;
- j. Seed mix special provisions

10. You shall comply with the following regarding in-stream construction activities:

- a. Work in the waterway should be timed to take place during low or no-flow conditions. Low flow conditions are flow at or below the normal water elevation.
- b. The plan will be designed to allow for the conveyance of the 2-year peak flow past the work area without overtopping the cofferdam. The Corps has the discretion to reduce this requirement if documented by the applicant to be infeasible or unnecessary.
- c. Water shall be isolated from the in-stream work area using a cofferdam constructed of non-erodible materials (steel sheets, aqua barriers, rip rap and geotextile liner, etc.). Earthen cofferdams are not permissible.
- d. The cofferdam must be constructed from the upland area and no equipment may enter flowing water at any time. If the installation of the cofferdam cannot be completed from shore and access is needed to reach the area to be coffered, other measures, such as the construction of a causeway, will be necessary to ensure that equipment does not enter the water. Once the cofferdam is in place and the isolated area is dewatered, equipment may enter the coffered area to perform the required work.
- e. If bypass pumping is necessary, the intake hose shall be placed on a stable surface or floated to prevent sediment from entering the hose. The bypass discharge shall be placed on a non-erodible, energy dissipating surface prior to rejoining the stream flow and shall not cause erosion. Filtering of bypass water is not necessary unless the bypass water has become sediment-laden as a result of the current construction activities.
- f. During dewatering of the coffered work area, all sediment-laden water must be filtered to remove sediment. Possible options for sediment removal include baffle

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systems, anionic polymers systems, dewatering bags, or other appropriate methods. Water shall have sediment removed prior to being re-introduced to the downstream waterway. A stabilized conveyance from the dewatering device to the waterway must be identified in the plan. Discharge water is considered clean if it does not result in a visually identifiable degradation of water clarity.

- g. The portion of the side slope that is above the observed water elevation shall be stabilized as specified in the plans prior to accepting flows. The substrate and toe of slope that has been disturbed due to construction activities shall be restored to proposed or pre-construction conditions and fully stabilized prior to accepting flows.
11. You are responsible for all work authorized herein and for ensuring that all contractors are aware of the terms and conditions of this authorization.
12. A copy of this authorization must be present at the project site during all phases of construction.
13. You shall notify this office of any proposed modifications to the project, including revisions to any of the plans or documents cited in this authorization. You must receive approval from this office before work affected by the proposed modification is performed.
14. You shall notify this office prior to the transfer of this authorization and liabilities associated with compliance with its terms and conditions. The transferee must sign the authorization in the space provided and forward a copy of the authorization to this office.

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.

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- 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. 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 the 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 modifications, 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 the reliance on the information you provided.
5. Reevaluation of Permit Decision. The 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 established a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion

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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 signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this authorization.

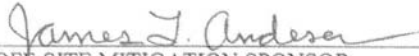


PERMITTEE
Paul Kovacs
Illinois State Toll Highway Authority

03/04/14
DATE

LRC-2007-00802

Corps Authorization Number



OFF-SITE MITIGATION SPONSOR
Lake County Forest Preserve District


28 Feb 2014
DATE



OFF-SITE MITIGATION SPONSOR
Forest Preserve District of DuPage County

3/4/14
DATE

This authorization becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.



For and on behalf of
Frederic A. Drummond, Jr.
Colonel, U.S. Army
District Commander

3/17/14
DATE

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If the structures or work authorized by this authorization are still in existence at the time the property is transferred, the terms and conditions of this authorization will continue to be binding on the new owner(s) of the property. To validate the transfer of this authorization and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below. The document shall be attached to a copy of the permit and submitted to the Corps.

LRC-2007-802

CORPS PROJECT NUMBER

TRANSFEEEE

DATE

ADDRESS

TELEPHONE

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.