

# 160

**April 27, 2018 Letting**

## **Notice to Bidders, Specifications and Proposal**



**Illinois Department  
of Transportation**

**Springfield, Illinois 62764**

**Contract No. 60T75  
LAKE County  
Section 39R  
Route FAP 344  
District 1 Construction Funds**

Prepared by

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Checked by

(Printed by authority of the State of Illinois)



## NOTICE TO BIDDERS

- 1. TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 10:00 a.m. April 27, 2018 prevailing time at which time the bids will be publicly opened from the iCX SecureVault.
- 2. DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 60T75  
LAKE County  
Section 39R  
Route FAP 344  
District 1 Construction Funds**

**Reconstruct US 45 on a new alignment and re-align Grass Lake Road to create a four-legged intersection with US 45 and Millburn Road in the Villages of Old Mill Creek and Lindenhurst.**

- 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,  
Secretary

INDEX  
FOR  
SUPPLEMENTAL SPECIFICATIONS  
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2018

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

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 4-1-16) (Revised 1-1-18)

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## **STATE OF ILLINOIS**

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### **SPECIAL PROVISIONS**

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction", adopted April 1, 2016, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways" and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the "Supplemental Specifications and Recurring Special Provisions" indicated on the Check Sheet included herein which apply to and govern the Construction of FAP Route 344, Section 39R, Lake County, Contract No. 60T75 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 344 (US 45)  
Section 39R  
Lake County  
Contract No. 60T75

### **LOCATION OF PROJECT**

The project is located in Lake County in the Village of Lindenhurst, Village of Old Mill Creek and unincorporated Lake County. The improvements along US Route 45 begin at Country Place and continue north to 1,600' north of Independence Boulevard (along a new alignment). Improvements along Grass Lake Road begin approximately 2,000' west of Heritage Drive and continue west to existing US Route 45.

### **DESCRIPTION OF PROJECT**

This project includes the reconstruction of 7,200 feet of US Route 45 roadway in Illinois, as well as 3,200 feet of Grass Lake Road. The new US 45 roadway will include two 12-foot wide traffic lanes in each direction with barrier curb medians, curb and gutter, auxiliary turn lanes at intersections, and three detention basins. In addition, Grass Lake Road, Old US 45, and Independence Boulevard will be widened and/or realigned, with a new signalized intersection of US 45 at Grass Lake Road. Other improvements include removing and replacing guardrail, curb and gutter, sidewalk, and driveway entrances.

**COMPLETION DATE PLUS WORKING DAYS**

Effective: September 30, 1985

Revised: January 1, 2007

Revise Article 108.05 (b) of the Standard Specifications as follows:

"When a completion date plus working days is specified, the Contractor shall complete all contract items and safely open all roadways to traffic by 11:59 PM on, July 12, 2019 except as specified herein.

The Contractor will be allowed to complete all clean-up work and punch list items within 10 working days after the completion date for opening the roadway to traffic. Under extenuating circumstances the Engineer may direct that certain items of work, not affecting the safe opening of the roadway to traffic, may be completed within the working days allowed for clean up work and punch list items. Temporary lane closures for this work may be allowed at the discretion of the Engineer.

Article 108.09 or the Special Provision for "Failure to Complete the Work on Time", if included in this contract, shall apply to both the completion date and the number of working days.

**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.

**STATUS OF UTILITIES (D-1)**

Effective: June 1, 2016

Utility companies and/or municipal owners located within the construction limits of this project have provided the following information in regard to their facilities and the proposed improvements. The tables below contain a description of specific conflicts to be resolved and/or facilities which will require some action on the part of the Department's contractor to proceed with work. Each table entry includes an identification of the action necessary and, if applicable, the estimated duration required for the resolution.

UTILITIES TO BE ADJUSTED

Conflicts noted below have been identified by following the suggested staging plan included in the contract. The company has been notified of all conflicts and will be required to obtain the necessary permits to complete their work; in some instances, resolution will be a function of the construction staging. The responsible agency must relocate or complete new installations as noted in the action column; this work has been deemed necessary to be complete for the Department's contractor to then work in the stage under which the item has been listed.

Stage 1

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	ACTION
US ROUTE 45 STA 106+70 to 109+70, 51.80' LT	Gas Main	Existing gas main is in conflict with the proposed ditch grading on the west side of US 45. The pipe will need to be relocated prior to the contractor beginning Stage 1.	Northshore Gas	All gas main adjustments to be completed by North Shore Gas Company – <b>90 days duration</b>
US ROUTE 45 STA 106+80.58, 59.44' LT	Power Pole	Existing power pole is in conflict with the proposed sidewalk on the west side of US 45 at the intersection of Country Place. The power pole will need to be relocated prior to the Contractor moving into Stage 1.	ComEd	1 utility pole to be relocated by ComEd – <b>4 days duration</b>

<p>US ROUTE 45          STA 106+83          68.00' LT</p>	<p>Cross Box</p>	<p>The cross box is in conflict with the proposed sidewalk on the west side of US 45 at the intersection of Country Place. The cross box will need to be relocated prior to the Contractor moving into Stage 1.</p>	<p>AT&amp;T          SAI 3100          Farmington Road</p>	<p>1 cross box to be relocated by AT&amp;T –  <b>30 days duration</b></p>
<p>US ROUTE 45          STA 107+48.10,          58.86' LT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the proposed ditch grading on the west side of US 45. The power pole will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd –  <b>4 days duration</b></p>
<p>US ROUTE 45          STA 109+59,          46.00' RT</p>	<p>Pedestal</p>	<p>Existing pedestal is in conflict with the proposed sidewalk on the east side of US 45. The pedestal will need to be relocated prior to the Contractor moving into Stage 1.</p>	<p>AT&amp;T          BHAH 300</p>	<p>1 pedestal to be relocated by AT&amp;T –  <b>10 days duration</b></p>
<p>US ROUTE 45          STA 109+66.76,          57.33' LT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the bike path excavation on the west side of US 45. The power pole will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd –  <b>4 days duration</b></p>
<p>US ROUTE 45          STA 114+19.63,          39.75' LT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the bike path and roadway excavation on the west side of US 45. The power pole will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd –  <b>4 days duration</b></p>

<p>US ROUTE 45  STA 114+21.00,  40.00' LT</p>	<p>Fiber Optic  on Joint Use  Pole</p>	<p>Existing fiber optic is on a joint use pole that is in conflict with the proposed roadway expansion. The joint use pole will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>AT&amp;T  3412LT 24  5BQ2MT 72</p>	<p>1 fiber to be relocated by AT&amp;T –  <b>30 days duration</b></p>
<p>US ROUTE 45  STA 115+81.00,  12.00' LT</p>	<p>Fiber Optic  on Joint Use  Pole</p>	<p>Existing fiber optic is on a joint use pole that is in conflict with the proposed roadway expansion. The joint use pole will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>AT&amp;T  3412LT 24  5BQ2MT 72</p>	<p>1 fiber to be relocated by AT&amp;T –  <b>30 days duration</b></p>
<p>US ROUTE 45  STA 117+02.00,  20.00' RT</p>	<p>Fiber Optic  on Joint Use  Pole</p>	<p>Existing fiber optic is on a joint use pole that is in conflict with the proposed roadway expansion. The joint use pole will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>AT&amp;T  3412LT 24  5BQ2MT 72</p>	<p>1 fiber to be relocated by AT&amp;T –  <b>30 days duration</b></p>
<p>US ROUTE 45  STA 118+24.00,  59.00' RT</p>	<p>Fiber Optic  on Joint Use  Pole</p>	<p>Existing fiber optic is on a joint use pole that is in conflict with the proposed sidewalk. The joint use pole will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>AT&amp;T  3412LT 24  5BQ2MT 72</p>	<p>1 fiber to be relocated by AT&amp;T –  <b>30 days duration</b></p>
<p>US ROUTE 45  STA 118+66.00,  97.00' RT</p>	<p>Fiber Optic  on Joint Use  Pole</p>	<p>Existing fiber optic is on a joint use pole that is in conflict with the proposed drainage ditch. The joint use pole will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>AT&amp;T  3412LT 24  5BQ2MT 72</p>	<p>1 fiber to be relocated by AT&amp;T –  <b>30 days duration</b></p>

<p>US ROUTE 45          STA 115+81.20,          11.51' LT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the bike path and roadway excavation on the west side of US 45. The power pole will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd  <b>- 4 days duration</b></p>
<p>US ROUTE 45          STA 117+04.83,          20.26' LT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the roadway excavation on the east side of US 45. The power pole will need to be relocated prior to the contractor beginning of Stage 1.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd  <b>- 4 days duration</b></p>
<p>US ROUTE 45          STA 117+31.55,          34.96' RT</p>	<p>Gas Main</p>	<p>Existing gas main is in conflict with the roadway excavation and proposed storm sewer on the east side of US 45. The existing gas pipe will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>Northshore Gas</p>	<p>All gas main adjustments to be completed by North Shore Gas Company – <b>90 days duration</b></p>
<p>US ROUTE 45          STA 118+25.85,          60.47' RT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the proposed sidewalk and proposed storm sewer on the east side of US 45. The power pole will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd  <b>- 4 days duration</b></p>
<p>US ROUTE 45          STA 118+65.68,          97.16' RT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the proposed grading on the east side of US 45. The power pole will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd  <b>- 4 days duration</b></p>

<p>OLD US ROUTE 45          STA 603+18.25,          28.35' LT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the proposed storm sewer on the north/west side of Old US 45. The power pole will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd – <b>4 days duration</b></p>
<p>US ROUTE 45          STA 138+69.70,          Crossing</p>	<p>Underground Electric Duct</p>	<p>Existing electrical duct is in conflict with the roadway excavation and proposed storm sewer across US 45. The duct will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>ComEd</p>	<p>Relocation of duct by ComEd – <b>4 days duration</b></p>
<p>US ROUTE 45          STA 138+74.47,          Crossing</p>	<p>CATV</p>	<p>Existing CATV line is in conflict with the roadway excavation and proposed storm sewer across US 45. The existing lines will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>Comcast</p>	<p>All relocation of lines by Comcast – <b>21 days duration</b></p>
<p>US ROUTE 45          STA 138+75.46,          Crossing</p>	<p>Underground Cable</p>	<p>Existing cable line is in conflict with the roadway excavation and proposed storm sewer across US 45. The existing lines will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>AT&amp;T          ANTW-200</p>	<p>All relocation of lines by AT&amp;T – <b>7 days duration</b></p>

<p>US ROUTE 45          STA 139+47.52,          Crossing</p>	<p>Underground          Electric Duct</p>	<p>Existing electrical duct is in conflict with the roadway excavation and proposed storm sewer across US 45. The duct will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>ComEd</p>	<p>Relocation of duct by ComEd – <b>4 days duration</b></p>
<p>US ROUTE 45          STA 139+49.12,          Crossing</p>	<p>CATV</p>	<p>Existing CATV line is in conflict with the roadway excavation and proposed storm sewer across US 45. The existing lines will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>Comcast</p>	<p>All relocation of lines by Comcast – <b>21 days duration</b></p>
<p>US ROUTE 45          STA 139+56.84,          Crossing</p>	<p>Gas Main</p>	<p>Existing gas main is in conflict with the roadway excavation and proposed storm sewer on the east side of US 45. The existing gas pipe will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>Northshore Gas</p>	<p>All gas main adjustments to be completed by North Shore Gas Company – <b>90 days duration</b></p>
<p>US ROUTE 45          STA 148+21.62,          Crossing</p>	<p>Gas Main</p>	<p>Existing gas main is in conflict with the roadway excavation and proposed storm sewer on the east side of US 45. The existing gas pipe will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>Northshore Gas</p>	<p>All gas main adjustments to be completed by North Shore Gas Company – <b>90 days duration</b></p>



<p>US ROUTE 45          STA 169+37 to          171+00, 35.50' to          66.50' RT</p>	<p>Gas Main</p>	<p>Existing gas main is in conflict with the proposed detention basin and proposed drainage structures on the east side of US 45. The existing gas pipe will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>Northshore Gas</p>	<p>All gas main adjustments to be completed by North Shore Gas Company – <b>90 days duration</b></p>
<p>US ROUTE 45          STA 171+00 to          178+00, Crossing</p>	<p>Gas Main</p>	<p>Existing gas main is in conflict with the roadway excavation and proposed drainage structures on the east side of US 45. The existing gas pipe will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>Northshore Gas</p>	<p>All gas main adjustments to be completed by North Shore Gas Company – <b>90 days duration</b></p>
<p>US ROUTE 45          STA 172+19.93 to          174+00,          Crossing</p>	<p>Underground Cable</p>	<p>Existing cable line is in conflict with the roadway excavation across US 45. The existing lines will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>AT&amp;T          ANAW-25</p>	<p>All relocation of lines by AT&amp;T – <b>15 days duration</b></p>
<p>US ROUTE 45          STA 172+22.67,          7.47' LT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the proposed roadway excavation on US 45. The power pole will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd – <b>4 days duration</b></p>
<p>Grass Lake Rd          STA 303+00 to          305+50, Crossing</p>	<p>Underground Cable</p>	<p>Existing cable line is in conflict with the roadway excavation across US 45. The existing lines will need to be relocated prior to the contractor beginning Stage 1.</p>	<p>AT&amp;T          BHBA-100</p>	<p>All relocation of lines by AT&amp;T – <b>45 days duration</b></p>

<p>Grass Lake Rd          STA 306+70.64,          Crossing</p>	<p>Underground          Electric          Cable</p>	<p>Existing electrical          cable is in conflict          with the roadway          excavation across          Grass Lake Road.          The existing line will          need to be relocated          prior to the          contractor beginning          Stage 1.</p>	<p>ComEd</p>	<p>Relocation of duct          by ComEd – <b>4 days          duration</b></p>
<p>Grass Lake Rd          STA 319+10.26,          Crossing</p>	<p>Underground          Cable</p>	<p>Existing cable line is          in conflict with the          roadway excavation          across Grass Lake          Road. The existing          lines will need to be          relocated prior to the          contractor beginning          Stage 1.</p>	<p>AT&amp;T          CXBX-100          ANTW-400</p>	<p>All relocation of          lines by AT&amp;T – <b>30          days duration</b></p>
<p>Grass Lake Rd          STA 319+14.33 to          319+18.38,          Crossing</p>	<p>Fiber Optic          Cable</p>	<p>Existing cable line is          in conflict with the          roadway excavation          across Grass Lake          Road. The existing          lines will need to be          relocated prior to the          contractor beginning          Stage 1.</p>	<p>AT&amp;T          24FO          72FO</p>	<p>All relocation of          lines by AT&amp;T – <b>30          days duration</b></p>
<p>Grass Lake Road          STA 319+20.74,          Crossing</p>	<p>Gas Main</p>	<p>Existing gas main is          in conflict with the          roadway excavation          and proposed storm          sewer at the          intersection of Old          US Route 45 and          Proposed Grass          Lake Road.</p> <p>The existing gas          main will need to be          relocated prior to the          contractor beginning          Stage 1.</p>	<p>Northshore Gas</p>	<p>All gas main          adjustments to be          completed by North          Shore Gas          Company – <b>90 days          duration</b></p>

Stage 2

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	ACTION
US ROUTE 45 STA 147+48.22, 41.76' RT	Power Pole	Existing power pole is in conflict with the proposed roadway excavation on US 45. The power pole will need to be relocated prior to the contractor beginning Stage 2.	ComEd	1 utility pole to be relocated by ComEd – <b>4 days duration</b>
US ROUTE 45 STA 147+66.57, Crossing	Underground Cable	Existing cable line is in conflict with the roadway excavation and proposed storm sewer across US 45. The existing lines will need to be relocated prior to the contractor beginning Stage 2.	AT&T BHBA-100	All relocation of lines by AT&T – <b>20 days duration</b>
US ROUTE 45 STA 147+66.00, 0.00' LT	Underground Cable	Existing cable line is in conflict with the roadway excavation and proposed storm sewer across US 45. The existing lines will need to be relocated prior to the contractor beginning Stage 2.	AT&T BHBA-100	All relocation of lines by AT&T – <b>20 days duration</b>
US ROUTE 45 STA 147+49.00, 1.00' LT	Underground Cable	Existing cable line is in conflict with the roadway excavation and proposed storm sewer across US 45. The existing lines will need to be relocated prior to the contractor beginning Stage 2.	AT&T BHBA-100	All relocation of lines by AT&T – <b>20 days duration</b>

<p>US ROUTE 45          STA 169+27.00,          163.00' RT</p>	<p>Underground          Cable</p>	<p>Existing cable line is in conflict with the roadway excavation and proposed 15" storm sewer across US 45. The existing lines will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>AT&amp;T          BHBA-50</p>	<p>All relocation of lines by AT&amp;T – <b>15 days duration</b></p>
<p>US ROUTE 45          STA 169+73.00,          152.00' RT</p>	<p>Underground          Cable</p>	<p>Existing cable line is in conflict with the roadway excavation and proposed 15" storm sewer across US 45. The existing lines will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>AT&amp;T          BHBA-50</p>	<p>All relocation of lines by AT&amp;T – <b>15 days duration</b></p>
<p>US ROUTE 45          STA 172+22.00,          9.00' LT</p>	<p>Underground          Cable</p>	<p>Existing cable line is in conflict with the roadway excavation. The existing lines will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>AT&amp;T          5BQ2MT 24</p>	<p>All relocation of lines by AT&amp;T – <b>15 days duration</b></p>
<p>Grass Lake Rd          STA 292+19.64,          39.84' LT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the proposed roadway excavation on the north side of Grass Lake Road. The power pole will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd – <b>4 days duration</b></p>

<p>Grass Lake Rd          STA 293+33.36,          33.34' LT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the proposed roadway excavation on the north side Grass Lake Road. The power pole will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd  <b>– 4 days duration</b></p>
<p>Grass Lake Rd          STA 294+16.01,          38.12' LT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the proposed roadway excavation and drainage structures on the north side Grass Lake Road. The power pole will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd  <b>– 4 days duration</b></p>
<p>Grass Lake Rd          STA 294+00 to          305+50,          35.54' to 110.27'          LT</p>	<p>Gas Main</p>	<p>Existing gas main is in conflict with the roadway excavation and proposed storm sewer on the north side of Proposed Grass Lake Road.           The existing gas main will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>Northshore Gas</p>	<p>All gas main adjustments to be completed by North Shore Gas Company – <b>90 days duration</b></p>

<p>Grass Lake Rd          STA 295+95.42,          39.80' LT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the proposed roadway excavation and drainage structures on the north side Grass Lake Road. The power pole will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd  <b>– 4 days duration</b></p>
<p>Grass Lake Rd          STA 296+96.27,          41.81' LT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the proposed roadway excavation and drainage structures on the north side Grass Lake Road. The power pole will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd  <b>– 4 days duration</b></p>
<p>Grass Lake Rd          STA 297+99.40,          38.77' LT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the proposed roadway excavation and drainage structures on the north side Grass Lake Road. The power pole will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd  <b>– 4 days duration</b></p>
<p>Grass Lake Rd          STA 296+98.03,          Crossing</p>	<p>Underground Cable</p>	<p>Existing cable line is in conflict with the roadway excavation across Grass Lake Road. The existing lines will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>AT&amp;T          BKMP-50          ANMW-50</p>	<p>All relocation of lines by AT&amp;T – <b>45 days duration</b></p>

<p>Grass Lake Rd  STA 297+41.47,  Crossing</p>	<p>Underground  Cable</p>	<p>Existing cable line is in conflict with the roadway excavation across Grass Lake Road. The existing lines will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>AT&amp;T  BHBA-100  AFAW-100  AFAW-100  BKMP-50</p>	<p>All relocation of lines by AT&amp;T – <b>45 days duration</b></p>
<p>Grass Lake Rd  STA 299+90.35,  40.12' LT</p>	<p>Power Pole</p>	<p>Existing power pole is in conflict with the proposed roadway excavation and drainage structures on the north side Grass Lake Road. The power pole will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>ComEd</p>	<p>1 utility pole to be relocated by ComEd – <b>4 days duration</b></p>
<p>Grass Lake Rd  STA 319+23.00,  26.00' RT</p>	<p>Underground  Cable</p>	<p>Existing cable line is in conflict with the roadway excavation across Grass Lake Road. The existing lines will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>AT&amp;T  5BQ2MT 144  5BQ2MT 24  3412LT 24</p>	<p>All relocation of lines by AT&amp;T – <b>30 days duration</b></p>
<p>Grass Lake Rd  STA 319+17.00,  4.00' RT</p>	<p>Underground  Cable</p>	<p>Existing cable line is in conflict with the roadway excavation across Grass Lake Road. The existing lines will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>AT&amp;T  5BQ2MT 144</p>	<p>All relocation of lines by AT&amp;T – <b>30 days duration</b></p>

<p>Heritage Drive          STA 1000+69.34,          Crossing</p>	<p>Gas Main</p>	<p>Existing gas main is in conflict with the roadway excavation across Heritage Drive.           The existing gas main will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>Northshore Gas</p>	<p>All gas main adjustments to be completed by North Shore Gas Company – <b>90 days duration</b></p>
<p>Heritage Drive          STA 1000+92.83,          Crossing</p>	<p>Underground Electric Cable</p>	<p>Existing electrical cable is in conflict with the roadway excavation across Heritage Drive. The existing line will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>ComEd</p>	<p>Relocation of line by ComEd – <b>4 days duration</b></p>
<p>Independence Blvd          STA 653+33.47,          Crossing</p>	<p>Gas Main</p>	<p>Existing gas main is in conflict with the roadway excavation at the intersection of Independence Boulevard and Old US 45.           The existing gas pipe will need to be relocated prior to the contractor beginning Stage 2.</p>	<p>Northshore Gas</p>	<p>All gas main adjustments to be completed by North Shore Gas Company – <b>90 days duration</b></p>



Stage 3

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	ACTION
US ROUTE 45 STA 106+96.22, 44.72' RT	Underground Cable	Existing cable line is in conflict with the roadway excavation and proposed storm sewer across US 45. The existing lines will need to be relocated prior to the contractor beginning Stage 3.	AT&T BHAH-300	All relocation of lines by AT&T – <b>10 days duration</b>
US ROUTE 45 STA 109+00.28, 46.75' RT	Underground Cable	Existing cable line is in conflict with the roadway excavation and proposed storm sewer across US 45. The existing lines will need to be relocated prior to the contractor beginning Stage 3.	AT&T BHAH-300	All relocation of lines by AT&T – <b>10 days duration</b>
US ROUTE 45 STA 110+95.27, 44.61' RT	Underground Cable	Existing cable line is in conflict with the roadway excavation and proposed storm sewer across US 45. The existing lines will need to be relocated prior to the contractor beginning Stage 3.	AT&T BHAH-300	All relocation of lines by AT&T – <b>10 days duration</b>
US ROUTE 45 STA 165+00 to 167+00, Crossing	Gas Main	Existing gas main is in conflict with the proposed roadway excavation. The pipe will need to be relocated prior to the contractor beginning Stage 3.	Northshore Gas	All gas main adjustments to be completed by North Shore Gas Company – <b>90 days duration</b>

<p>US ROUTE 45  STA 167+00 to  170+00,  Crossing</p>	<p>Gas Main</p>	<p>Existing gas main is in conflict with the proposed detention basin. The pipe will need to be relocated prior to the contractor beginning Stage 3.</p>	<p>Northshore Gas</p>	<p>All gas main adjustments to be completed by North Shore Gas Company – <b>90 days duration</b></p>
<p>US ROUTE 45  STA 292+01.44 to  305+50.00</p>	<p>Underground Cable</p>	<p>Existing cable line is in conflict with the roadway excavation and proposed storm sewer across US 45. The existing lines will need to be relocated prior to the contractor beginning Stage 3.</p>	<p>AT&amp;T  ANTW-1200  BHAB-100  ANTW-900</p>	<p>All relocation of lines by AT&amp;T – <b>45 days duration</b></p>
<p>Grass Lake Rd  STA 296+98.03,  Crossing</p>	<p>Underground Cable</p>	<p>Existing cable line is in conflict with the roadway excavation across Grass Lake Road. The existing lines will need to be relocated prior to the contractor beginning Stage 3.</p>	<p>AT&amp;T  BKMP-50  ANMW-50</p>	<p>All relocation of lines by AT&amp;T – <b>45 days duration</b></p>
<p>Grass Lake Rd  STA 297+41.47,  Crossing</p>	<p>Underground Cable</p>	<p>Existing cable line is in conflict with the roadway excavation across Grass Lake Road. The existing lines will need to be relocated prior to the contractor beginning Stage 3.</p>	<p>AT&amp;T  AFAW-25</p>	<p>All relocation of lines by AT&amp;T – <b>45 days duration</b></p>

Grass Lake Rd STA 297+39.51, 38.68' RT	Power Pole	Existing power pole is in conflict with the proposed roadway excavation and proposed bike path on the south side Grass Lake Road. The power pole will need to be relocated prior to the contractor beginning Stage 3.	ComEd	1 utility pole to be relocated by ComEd <b>- 4 days duration</b>
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No conflicts to be resolved (or if there are conflicts they are to be listed as noted above)

**Pre-Stage:     90     Days Total Installation**  
**Stage 1:     0     Days Total Installation**  
**Stage 2:     0     Days Total Installation**

The following contact information is what was used during the preparation of the plans as provided by the Agency/Company responsible for resolution of the conflict.

<b>Agency/Company Responsible to Resolve Conflict</b>	<b>Name of contact</b>	<b>Address</b>	<b>Phone</b>	<b>e-mail address</b>
AT&T Civic Project Engineering	Hector Garcia	1000 Commerce Drive, Oak Brook, IL 60523	(630) 573-5465	<a href="mailto:Hq2929@att.net">Hq2929@att.net</a>
ComEd State Programs Supervisor Public Relocation Dept.	Angela Harrell	One Lincoln Centre, Suite 600, Oakbrook Terrace, IL 60181-4260	(224) 422-7142	Angela.harrell@Comed.com
Comcast Cable Communications, Inc.	Martha Gieras	688 Industrial Drive, Elmhurst, IL 60126	(224) 229-5862	Martha_Gieras@comcast.com
North Shore Gas Company	Glannie Chan	3001 Grand Avenue, Waukegan, IL 60085	(847) 263-4678	CAChan@northshoredelivery.com
Lake County Division of Transportation	Shane Schneider	600 West Winchester Road, Libertyville, IL 60048	(847) 377-7400	Sschneider2@lakecountyil.gov
Village of Lindenhurst	Ed Laudenslager	2301 East Sand Lake Road, Lindenhurst, IL 60046	(224) 443-6249	mail@lidenhurstil.org

**UTILITIES TO BE WATCHED AND PROTECTED**

The areas of concern noted below have been identified by following the suggested staging plan included for the contract. The information provided is not a comprehensive list of all remaining utilities, but those which during coordination were identified as ones which might require the Department's contractor to take into consideration when making the determination of the means and methods that would be required to construct the proposed improvement. In some instances, the contractor will be responsible to notify the owner in advance of the work to take place so necessary staffing on the owner's part can be secured.

Stage 1

<b>STAGE / LOCATION</b>	<b>TYPE</b>	<b>DESCRIPTION</b>	<b>OWNER</b>	<b>ACTION</b>
US ROUTE 45 STA 106+74.07, 61.11' LT	Light Pole	The Contractor is alerted that there is a light pole at the corner of Country Place and US 45.	Village of Lindenhurst	Light pole shall be protected from damage by the Contractor during construction.
US ROUTE 45 STA 109+71.34, 72.22' LT	Fire Hydrant	The Contractor is alerted that there is a fire hydrant along the proposed bike path on the west side of US 45.	Village of Lindenhurst	Fire hydrant shall be protected from damage by the Contractor during construction.
US ROUTE 45 STA 111+95.98, 57.42' LT	Power Pole	The Contractor is alerted that there is a power pole at the corner of Country Place and US 45.	ComEd	Power pole shall be protected from damage by the Contractor during construction.
US ROUTE 45 STA 112+62.91, 69.55' LT	Fire Hydrant	The Contractor is alerted that there is a fire hydrant along the proposed bike path on the west side of US 45.	Village of Lindenhurst	Fire hydrant shall be protected from damage by the Contractor during construction.
US ROUTE 45 STA 120+23.22, 170.57' RT	Power Pole	The Contractor is alerted that there is a power pole at the corner of Country Place and US 45.	ComEd	Power pole shall be protected from damage by the Contractor during construction.
US ROUTE 45 STA 130+84.20, 80.96' RT	Fire Hydrant	The Contractor is alerted that there is a fire hydrant along the proposed bike path on the west side of US 45.	Village of Lindenhurst	Fire hydrant shall be protected from damage by the Contractor during construction.
OLD US ROUTE 45 STA 605+05.45, 38.87' LT	Power Pole	The Contractor is alerted that there is a power pole at the corner of Country Place and US 45.	ComEd	Power pole shall be protected from damage by the Contractor during construction.

Stage 2

<b>STAGE / LOCATION</b>	<b>TYPE</b>	<b>DESCRIPTION</b>	<b>OWNER</b>	<b>ACTION</b>
Grass Lake Rd STA 286+49.76, 38.19' LT	Power Pole	The Contractor is alerted that there is a power pole along the north side of Grass Lake Road.	ComEd	Power pole shall be protected from damage by the Contractor during construction.
Grass Lake Rd STA 287+20 to 289+32, 35' LT	Gas Main	The Contractor is alerted that there is a gas main running along the north side of Grass Lake Road.	Northshore Gas	Gas pipe shall be protected from damage by the Contractor during construction.
Grass Lake Rd STA 290+27.43, 38.14' LT	Power Pole	The Contractor is alerted that there is a power pole along the north side of Grass Lake Road.	ComEd	Power pole shall be protected from damage by the Contractor during construction.
Grass Lake Rd STA 301+55.52, 60.26' LT	Power Pole	The Contractor is alerted that there is a power pole along the north side of Grass Lake Road.	ComEd	Power pole shall be protected from damage by the Contractor during construction.
Grass Lake Rd STA 302+41.15, 63.86' LT	Light Pole	The Contractor is alerted that there is a light pole along the north side of Grass Lake Road.	Village of Lindenhurst	Light pole shall be protected from damage by the Contractor during construction.
Grass Lake Rd STA 303+81.32, 89.08' LT	Light Pole	The Contractor is alerted that there is a light pole along the north side of Grass Lake Road.	Village of Lindenhurst	Light pole shall be protected from damage by the Contractor during construction.
Grass Lake Rd STA 303+81.32, 89.08' LT	Fire Hydrant	The Contractor is alerted that there is a fire hydrant along the north side of Grass Lake Road.	Village of Lindenhurst	Fire hydrant shall be protected from damage by the Contractor during construction.
Grass Lake Rd STA 306+58.41, 79.13' LT	Power Pole	The Contractor is alerted that there is a power pole along the north side of Grass Lake Road.	ComEd	Power pole shall be protected from damage by the Contractor during construction.
Independence Blvd STA 648+52.20, 31.65' RT	Light Pole	The Contractor is alerted that there is a light pole along the north side of Grass Lake Road.	Village of Lindenhurst	Light pole shall be protected from damage by the Contractor during construction.

Stage 3

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Grass Lake Rd STA 292+14.88, 39.04' RT	Power Pole	The Contractor is alerted that there is a power pole along the south side of Grass Lake Road.	Village of Lindenhurst	Power pole shall be protected from damage by the Contractor during construction.

The following contact information is what was used during the preparation of the plans as provided by the owner of the facility.

Agency/Company Responsible to Resolve Conflict	Name of contact	Address	Phone	e-mail address
AT&T Civic Project Engineering	Hector Garcia	1000 Commerce Drive, Oak Brook, IL 60523	(630) 573-5465	<a href="mailto:Hq2929@att.net">Hq2929@att.net</a>
ComEd State Programs Supervisor Public Relocation Dept.	Angela Harrell	One Lincoln Centre, Suite 600, Oakbrook Terrace, IL 60181-4260	(224) 422-7142	Angela.harrell@Comed.com
Comcast Cable Communications, Inc.	Martha Gieras	688 Industrial Drive, Elmhurst, IL 60126	(224) 229-5862	Martha_Gieras@comcast.com
North Shore Gas Company	Glannie Chan	3001 Grand Avenue, Waukegan, IL 60085	(847) 263-4678	CChan@northshoredelivery.com
Lake County Division of Transportation	Shane Schneider	600 West Winchester Road, Libertyville, IL 60048	(847) 377-7400	Sschneider2@lakecountyil.gov
Village of Lindenhurst	Ed Laudenslager	2301 East Sand Lake Road, Lindenhurst, IL 60046	(224) 443-6249	mail@lidenhurstil.org

The above represents the best information available to the Department and is included for the convenience of the bidder. The days required for conflict resolution should be taken into account in the bid as this information has also been factored into the timeline identified for the project when setting the completion date. The applicable portions of the Standard Specifications for Road and Bridge Construction shall apply.

Estimated duration of time provided in the action column for the first conflicts identified will begin on the date of the executed contract regardless of the status of the utility relocations. The responsible agencies will be working toward resolving subsequent conflicts in conjunction with contractor activities in the number of days noted.

The estimated relocation dates must be part of the progress schedule submitted by the contractor. A utility kickoff meeting will be scheduled between the Department, the Department's contractor and the utility companies. The Department's contractor is responsible for contacting J.U.L.I.E. prior to any and all excavation work.

**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.”



## **TRAFFIC CONTROL PLAN**

Effective: September 30, 1985

Revised: January 1, 2007

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:

- 701011 OFF-RD MOVING OPERATIONS, 2L, 2W, DAY ONLY
- 701301 LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
- 701311 LANE CLOSURE, 2L, 2W MOVING OPERATIONS – DAY ONLY
- 701326 LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS  $\geq$  45 MPH
- 701331 LANE CLOSURE, 2L, 2W, WITH RUN-AROUND FOR SPEEDS  $\geq$  45 MPH
- 701336 LANE CLOSURE, 2L, 2W, WORK AREAS IN SERIES FOR SPEEDS  $\geq$  45 MPH
- 701426 LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPER., FOR SPEEDS  $\geq$  45 MPH
- 701501 URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED
- 701701 URBAN LANE CLOSURE, MULTILANE INTERSECTION
- 701801 SIDEWALK, CORNER OR CROSSWALK CLOSURE
- 701901 TRAFFIC CONTROL DEVICES
- 704001 TEMPORARY CONCRETE BARRIER

### DETAILS:

- TC-10 TRAFFIC CONTROL & PROTECTION FOR SIDE ROADS, INTERSECTIONS & DRIVEWAYS
- TC-13 DISTRICT ONE TYPICAL PAVEMENT MARKINGS
- TC-14 TRAFFIC CONTROL & PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC)
- TC-16 PAVEMENT MARKING LETTERS & SYMBOLS FOR TRAFFIC STAGING
- TC-21 DETOUR SIGNING FOR CLOSING STATE HIGHWAYS
- TC-22 ARTERIAL ROAD INFORMATION SIGN
- TC-26 DRIVEWAY ENTRANCE SIGNING

SPECIAL PROVISIONS:

MAINTENANCE OF ROADWAYS  
TRAFFIC CONTROL & PROTECTION (ARTERIALS)  
TRAFFIC CONTROL PLAN  
DRAINAGE AND INLET PROTECTION UNDER TRAFFIC (D-1)  
PUBLIC CONVENIENCE AND SAFETY (D-1)  
TEMPORARY PAVEMENT  
TEMPORARY INFORMATION SIGNING  
KEEPING ARTERIAL ROADWAYS OPEN TO TRAFFIC (LANE CLOSURES ONLY)  
TEMPORARY CONCRETE BARRIER  
TEMPORARY PAVEMENT MARKING (BDE)  
PAVEMENT MARKING REMOVAL (BDE)  
PAVEMENT AND SHOULDER RESURFACING (BDE RECURRING SP CS #14)  
Equipment Parking and Storage (BDE)

**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.

## PROTECTION OF EXISTING TREES

The Contractor shall be responsible for taking measures to minimize damage to the tree limbs, tree trunks, and tree roots at each work site. All such measures shall be included in the contract price for other work except that payment will be made for TEMPORARY FENCE, TREE ROOT PRUNING, and TREE PRUNING.

All work, materials and equipment shall conform to Section 201 and 1081 of the Standard Specifications except as modified herein.

### A. Earth Saw Cut of Tree Roots (Root Pruning):

1. Whenever proposed excavation falls within a drip-line of a tree, the Contractor shall:
  - a. Root prune 6-inches behind and parallel to the proposed edge of trench a neat, clean vertical cut to a minimum depth directed by the Engineer through all affected tree roots.
  - b. Root prune to a maximum width of 4-inches using a "Vermeer" wheel, or other similar machine. Trenching machines will not be permitted.
  - c. Exercise care not to cut any existing utilities.
  - d. If during construction it becomes necessary to expose tree roots which have not been precut, the Engineer shall be notified and the Contractor shall provide a clean, vertical cut at the proper root location, nearer the tree trunk, as necessary, by means of hand-digging and trimming with chain saw or hand saw. Ripping, shredding, shearing, chopping or tearing will not be permitted.
  - e. Top Pruning: When thirty percent (30%) or more of the root zone is pruned, an equivalent amount of the top vegetative growth or the plant material shall be pruned off within one (1) week following root pruning.
2. Whenever curb and gutter is removed for replacement, or excavation for removal of or construction of a structure is within the drip line/root zone of a tree, the Contractor shall:
  - a. Root prune 6-inches behind the curbing so as to neatly cut the tree roots.
  - b. Depth of cut shall be 12 inches for curb removal and replacement and 24 inches for structural work. Any roots encountered at a greater depth shall be neatly saw cut at no additional cost.
  - c. Locations where earth saw cutting of tree roots is required will be marked in the field by the Engineer.

3. All root pruning work is to be performed through the services of a licensed arborist to be approved by the Engineer.

Root pruning will be paid for at the contract unit price each for TREE ROOT PRUNING, which price shall be payment for all labor, materials and equipment.

Tree limb pruning will be paid for at the contract unit price per each for TREE PRUNING (1 TO 10 INCH DIAMETER) and/or TREE PRUNING (OVER 10 INCH DIAMETER), which price shall included labor, materials, and equipment.

B. Temporary Fence:

1. The Contractor shall erect a temporary fence around all trees within the construction area to establish a "tree protection zone" before any work begins or any material is delivered to the jobsite. No work is to be performed (other than root pruning), materials stored or vehicles driven or parked within the "tree protection zone".
2. The exact location and establishment of the "tree protection zone" fence shall be approved by the Engineer prior to setting the fence.
3. The fence shall be erected on three sides of the tree at the drip-line of the tree or as determined by the Engineer.
4. All work within the "tree protection zone" shall have the Engineer's prior approval. All slopes and other areas not regarded should be avoided so that unnecessary damage is not done to the existing turf, tree root system ground cover.
5. The grade within the "tree protection zone" shall not be changed unless approved by the Engineer prior to making said changes or performing the work.

The fence shall be similar to wood lath snow fence (48 inches high), plastic poly-type or and other type of highly visible barrier approved by the Engineer. This fence shall be properly maintained and shall remain up until final restoration, unless the Engineer directs removal otherwise. Tree fence shall be supported using T-Post style fence posts. Utilizing re-bar as a fence post will not be permitted.

Temporary fence will be paid for at the contract unit price per foot for TEMPORARY FENCE, which price shall include furnishing, installing, maintaining, and removing.

C. Tree Limb Pruning:

1. The Contractor shall inspect the work site in advance and arrange with the Roadside Development Unit (847.705.4171) to have any tree limbs pruned that might be damaged by equipment operations at least one week prior to the start of construction. Any tree limbs that are broken by construction equipment after the initial pruning must be pruned correctly within 72 hours.
2. Top Pruning: When thirty percent (30%) or more of the root zone of a tree is pruned, an equivalent amount of the top vegetative growth or the plant material shall be pruned off within one (1) week following root pruning.

Tree limb pruning will be paid for at the contract unit price per each for TREE PRUNING (1 TO 10 INCH DIAMETER) and/or TREE PRUNING (OVER 10 INCH DIAMETER), which price shall include labor, materials, and equipment.

D. Removal of Driveway Pavement and Sidewalk:

1. In order to minimize the potential damage to the tree root system(s), the Contractor will not be allowed to operate any construction equipment or machinery within the "tree protection zone" located between the curb or edge of pavement and the right-of-way property line.
2. Sidewalk to be removed in the areas adjacent to the "tree protection zones" shall be removed with equipment operated from the street pavement. Removal equipment shall be Gradall (or similar method), or by hand or a combination of these methods. The method of removal shall be approved by the Engineer prior to commencing any work.
3. Any pavement or pavement related work that is removed shall be immediately disposed of from the area and shall not be stockpiled or stored within the parkway area under any circumstances.

E. Backfilling:

1. Prior to placing the topsoil and/or sod, in areas outside the protection zone, the existing ground shall be disked to a depth no greater than one (1"), unless otherwise directed by the Engineer. No grading will be allowed within the drip-line of any tree unless directed by the Engineer.

F. Damages:

1. In the event that a tree not scheduled for removal is injured such that potential irreparable damage may ensue, as determined by the Roadside Development Unit, the Contractor shall be required to remove the damage tree and replace it on a three to one (3:1) basis, at his own expense. The Roadside Development Unit will select replacement trees from the pay items already established in the contract.
2. The Contractor shall place extreme importance upon the protection and care of trees and shrubs which are to remain during all times of this improvement. It is of paramount importance that the trees and shrubs which are to remain are adequately protected by the Contractor and made safe from harm and potential damage from the operations and construction of this improvement. If the Contractor is found to be in violation of storage or operations within the "tree protection zone" or construction activities not approved by the Engineer, a penalty shall be levied against the Contractor with the monies being deducted from the contract. The amount of the penalty shall be two hundred fifty dollars (\$250.00) per occurrence per day.

### **SUPPLEMENTAL WATERING**

Scope: This work will include watering turf, trees, shrubs, vines and perennial plants at the rates specified and as directed by the Engineer.

Schedule: Watering will only begin after the successful completion of all period of establishment requirements.

Watering must be completed in a timely manner. When the Engineer directs the Contractor to do supplemental watering, the Contractor must begin the watering operation within 24 hours of notice. A minimum of 10 units of water per day must be applied until the work is complete. Damage to plant material that is a result of the Contractor's failure to water in a timely way must be repaired or replaced at the Contractor's expense.

Source of Water: The Contractor shall notify the Engineer of the source of water used and provide written certification that the water does not contain chemicals harmful to plant growth.

Rate of Application: The normal rates of application for watering are as follows. The Engineer will adjust these rates as needed depending upon weather conditions.

Perennial Plants: 5 gallons per square yard  
Trees: 30 gallons per tree  
Shrubs: 7 gallons per shrub  
Vines: 3 gallons per vine

Method of Application: A spray nozzle that does not damage small plants must be used when watering perennial plants or turf. Water shall be applied at the base of the plant to keep as much water as possible off plant leaves. An open hose may be used to water trees, shrubs, and vines if mulch and soil are not displaced by watering. Water shall trickle slowly into soil and completely soak the root zone. The Contractor must supply metering equipment as needed to assure the specified application rate of water.

Method of Measurement: Supplemental watering will be measured in units of 1000 gallons (3,785 liters) of water applied as directed.

Basis of Payment: This work will be paid for at the contract unit price per unit of SUPPLEMENTAL WATERING, measured as specified. Payment will include the cost of all water, equipment and labor needed to complete the work specified herein and to the satisfaction of the Engineer.

### **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.



**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  $\pm 2.0$  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.

**RECLAIMED ASPHALT PAVEMENT FOR NON-POROUS EMBANKMENT AND BACKFILL**

Effective: April 1, 2001

Revised: January 1, 2007

Add the following sentence to Article 1004.05 (a) of the Standard Specifications:

"Reclaimed Asphalt Pavement (RAP) may be used as aggregate in Non-porous Granular Embankment and Backfill. The RAP material shall be reclaimed asphalt pavement material resulting from the cold milling or crushing of an existing hot-mix bituminous concrete pavement structure, including shoulders. RAP containing contaminants such as earth, brick, concrete, sheet asphalt, sand, or other materials identified by the Department will be unacceptable until the contaminants are thoroughly removed.

Add the following sentence to Article 1004.05 (c)(2) of the Standard Specifications:

"One hundred percent of the RAP when used shall pass the 3 inch (75 mm) sieve. The RAP shall be well graded from coarse to fine. RAP that is gap-graded or single-sized will not be accepted."

## **SEEDING, CLASS 4 (MODIFIED) - NATIVE GRASS**

This work shall consist of Seeding Class 4 (Modified) in areas as shown in the plans or as directed by the Engineer.

All work, materials, and equipment shall conform to Sections 250 and 1081 of the Standard Specifications except as modified herein.

The Class 4 (Modified) seed mixture shall be supplied in separate bags of the two mixture components: Temporary Cover and Permanent Grasses. All native species will be local genotype and verified that original seed collection source will be from a radius of 150 miles from project site. Fertilizer is not required.

Article 250.07 Seeding Mixtures – Delete sentence 4. Delete the following from Table 1 – Seeding Mixtures:

Perennial Ryegrass

Article 250.09 – Add Seeding, Class 4 (Modified)

Article 250.10 – Add Seeding, Class 4 (Modified)

## **SEEDING, WET PRAIRIE**

This work shall consist of preparing the seed bed, placing the seed, initial and maintenance watering of the seed bed and other materials required in the seeding operation including horticultural grade vermiculite in areas as shown in the plans.

All work, materials and equipment shall conform to Section 250 and 1081 of the Standard Specifications except as modified herein.

The Wet Prairie Grass seed mix and the Wet Prairie Forb seed mix shall be supplied in separate bags of three mix components: Temporary Cover, Permanent Grasses, and Forbs. All native seed species will be local genotype and verified that original seed collection source will be from within a radius of 150 miles from Lake County. The Wet Prairie Forbs seed mix shall be supplied with the appropriate inoculants. Fertilizer is not required.

Add the following to Article 250.05 Seed Bed Preparation.

Before seeding begins, the Contractor shall be responsible for ensuring that each previous tradesperson or contractor has fulfilled preparatory requirements (grading, compaction, debris removal, snag placement, etc.).

Article 250.07 Seeding Mixtures – Delete sentence 4. Add the following to Table 1 – Seeding Mixtures:

<u>CLASS – TYPE</u>	<u>SEEDS</u>	<u>PURE LIVE SEED OZ/ACRE</u>
Wet Prairie Grasses		154.5
	Andropogon gerardii (Big Bluestem)	32.0
	Andropogon scoparius (Little Bluestem)	48.0
	Calamagrostis Canadensis (Blue Joint Grass)	8.0
	Carex comosa (Bristley Sedge)	1.0
	Carex cristatella (Crested Oval Sedge)	1.0
	Carex stricta (Common Tussock Sedge)	2.0
	Carex tribuloides (Awl-fruited Lake Sedge)	1.0
	Carex vulpinoidea (Brown Fox Sedge)	2.0
	Elymus canadensis (Canada Wild Rye)	16.0
	Juncus dudleyi (Dudley's Rush)	0.5
	Juncus torreyi (Torrey's Rush)	1.0
	Leersia oryzoides (Rice Cut Grass)	20.0
	Scirpus atrovirens (Dark Green Rush)	8.0
	Spartina pectinata (Prairie Cord Grass)	16.0
Temporary Cover		512 (oz/acre)
	Avena sativa (Oats)	512.0 (November 1 to May 31)
	Elymus virginicus (Virginia Wild Rye)	48.0 (June 1 to October 31)

<u>CLASS - TYPE</u>	<u>SEEDS</u>	<u>PURE LIVE SEED OZ/ACRE</u>
Wet Prairie Forbs		30.0
	Aster novae-angliae (New England Aster)	0.5
	Eupatorium maculatum (Spotted Joe-Pye Weed)	4.0
	Eryngium yuccifolium (Rattlesnake Master)	2.0
	Iris virginica shrevei (Blue Flag)	2.0
	Liatris spicata (Spiked Gayfeather)	3.0
	Liatris pycnostachya (Prairie Blazing Star)	5.0
	Lobelia siphilitica (Great Blue Lobelia)	2.0
	Monarda fistulosa (Bergamot)	0.5
	Pycnanthemum virginianum (Common Mountain Mint)	2.50
	Rudbeckia hirta (Black-Eyed Susan)	4.0
	Silphium perfoliatum (Cup Plant)	2.0
	Verbena hastata (Blue Vervain)	1.0
	Veronicastrum virginicum (Culver's Root)	1.0
	Zizia aurea (Golden Alexanders)	0.5

Notes:

1. The seeding time for this work shall be from November 1 to May 31. Seeding done outside of this time frame will not be measured for payment.
2. Each bag shall be labeled. The label shall bear the dealer's guarantee of mixture and year grown, purity and germination, with date of test, and collection source location. Purity and germination tests no older than twelve months of the date of sowing must be submitted to verify all bulk seed required to achieve LB PLS specified.
3. No seed shall be sown until the purity testing has been completed for seeds to be used and shows the seed meets the noxious weed requirements.
4. Seed, which has become wet, moldy, or otherwise damaged, will not be acceptable. Prior to application, the Engineer must approve seed mix in the bags.

5. The seedbed shall be prepared and approved by the Engineer prior to seeding. The Contractor shall delineate the perimeter of the seedbed with wooden lathe. The wooden lathe shall remain in place.
6. No seed shall be sown during high winds or when the ground is not in proper condition for seeding.
7. No seed shall be sown until the purity testing has been completed for seeds to be used and shows the seed meets the noxious weed requirements.
8. The Engineer must witness the delivery of seed with original labels attached in the field. Provide to the Engineer the seed labels from the bags in which the seed is delivered in.
9. Temporary cover seed shall be kept separate from the Wet Prairie type mixture. It shall be mixed on site under the direction of the Engineer.
10. In order to eliminate potential introduction of invasive or exotic species, all equipment used on the planting site shall be free of mud and/or plant material. This includes tires, mower decks, undercarriage, etc.
11. The Cover Crop shall be thoroughly mixed with the Wet Prairie Grass seed mix and seeded using a mechanical seeder that applies the seed uniformly at a depth of 1/4 inch. Second, the Wet Prairie Forb seed shall be thoroughly mixed with 2 bushels of moistened horticultural grade vermiculite per acre and uniformly seeded at a depth of 1/8 inch. The seedbed shall be immediately covered as specified.

If specified seed material is unavailable, the Engineer shall approve the substitutes in writing. Adjustments will be made at no cost to the contract. Approval of substitutes shall in no way waive any requirements of the contract.

Article 250.09 – Add Seeding, Wet Prairie.

Seeding, Wet Prairie forb mix horticultural grade vermiculite will not be measured for payment.

Supplemental watering will be measured for payment as specified in Special Provision for SUPPLEMENTAL WATERING.

Article 250.10 – Add Seeding, Wet Prairies

**SEEDING, MESIC PRAIRIE**

This work shall consist of preparing the seed bed, placing the seed, initial and maintenance watering of the seed bed and other materials required in the seeding operation including horticultural grade vermiculite in areas as shown in the plans.

All work, materials and equipment shall conform to Section 250 and 1081 of the Standard Specifications except as modified herein.

The Mesic Prairie Grass seed mix and the Mesic Prairie Forb seed mix shall be supplied in separate bags of three mix components: Temporary Cover, Permanent Grasses, and Forbs. All native seed species will be local genotype and verified that original seed collection source will be from within a radius of 150 miles from Lake County. The Mesic Prairie Forbs seed mix shall be supplied with the appropriate inoculants. Fertilizer is not required.

Article 250.07 Seeding Mixtures – Delete sentence 4. Add the following to Table 1 – Seeding Mixtures:

<u>CLASS – TYPE</u>	<u>SEEDS</u>	<u>PURE LIVE SEED OZ/ACRE</u>
Mesic Prairie Grasses		152.0
	Andropogon gerardii (Big Bluestem)	48.0
	Andropogon scoparius (Little Bluestem)	48.0
	Elymus canadensis (Canada Wild Rye)	48.0
	Sorghastrum nutans (Indian Grass)	8.0
Temporary Cover		512 (oz/acre)
	Avena sativa (Oats)	512.0 (November 1 to May 31)
	Elymus canadensis (Canada Wild Rye)	48.0 (November 1 to December 31)

<u>CLASS - TYPE</u>	<u>SEEDS</u>	<u>PURE LIVE SEED OZ/ACRE</u>
Mesic Prairie Forbs		36.0
	Aster novae-angliae (New England Aster)	1.6
	Coreopsis tripteris (Tall Coreopsis)	2.0
	Eryngium yuccifolium (Rattlesnake Master)	3.0
	Liatris pycnostachya (Prairie Blazing Star)	3.2
	Monarda fistulosa (Bergamot)	1.2
	Penstemon digitalis (Foxglove Beardtongue)	2.0
	Ratibida pinnata (Yellow Coneflower)	2.0
	Rudbeckia hirta (Black-Eyed Susan)	4.0
	Rudbeckia subtomentosa (Sweet Coneflower)	4.0
	Silphium integrifolium (Rosin Weed)	3.0
	Silphium laciniatum (Compass Plant)	3.0
	Silphium terebinthinaceum (Prairie Dock)	3.0
	Solidago rigida (Stiff Goldenrod)	1.0
	Tradescantia ohiensis (Spiderwort)	1.0
	Zizia aurea (Golden Alexanders)	2.0

Notes:

1. The seeding time for this work shall be from November 1 to May 31. Seeding done outside of this time frame will not be measured for payment.
2. Each bag shall be labeled. The label shall bear the dealer's guarantee of mixture and year grown, purity, and germination, with date of test, and collection source location. Purity and germination tests no older than twelve months of the date of sowing must be submitted to verify all of bulk seed required to achieve LB PLS specified.
3. No seed shall be sown until the purity testing has been completed for seeds to be used and shows the seed meets the noxious weed requirements.
4. Seed, which has become wet, moldy, or otherwise damaged will not be acceptable. Prior to application, the Engineer must approve seed mix in the bags.

5. The seedbed shall be prepared and approved by the Engineer prior to seeding. The Contractor shall delineate the perimeter of the seedbed with wooden lathe. The wooden lathe shall remain in place.
6. No seed shall be sown during high winds or when the ground is not in proper condition for seeding.
7. The Engineer must witness the delivery of seed with original labels attached in the field. Provide to the Engineer the seed labels from the bags in which the seed is delivered in.
8. Temporary cover seed shall be kept separate from the Mesic Prairie type mixture. It shall be mixed on site under the direction of the Engineer.
9. In order to eliminate potential introduction of invasive or exotic species, all equipment used on the planting site shall be free of mud and/or plant material. This includes tires, mower decks, undercarriage, etc.
10. The Cover Crop shall be thoroughly mixed with the Mesic Prairie Grass seed mix and seeded using a mechanical seeder that applies the seed uniformly at a depth of 1/4 inch. Second, the Mesic Prairie Forb seed shall be thoroughly mixed with 2 bushels of moistened horticultural grade vermiculite per acre and uniformly seeded at a depth of 1/8 inch. The seedbed shall be immediately covered as specified.

If specified seed material is unavailable, the Engineer shall approve the substitutes in writing. Adjustments will be made at no cost to the contract. Approval of substitutes shall in no way waive any requirements of the contract.

Article 250.09 – Add Seeding, Mesic Prairie.

Seeding, Mesic Prairie forb mix horticultural grade vermiculite will not be measured for payment.

Supplemental watering will be measured for payment as specified in Special Provision for SUPPLEMENTAL WATERING.

Article 250.10 – Add Seeding, Mesic Prairie.



## **SEEDING, SEDGE MEADOW AND EMERGENT WETLAND EDGE**

This work shall consist of preparing the seed bed, placing the seed, initial watering of the seed bed and other materials required in the seeding operation including horticultural grade vermiculite in areas as shown in the plans.

All work, materials and equipment shall conform to Section 250 and 1081 of the Standard Specifications except as modified herein.

The Sedge Meadow and Emergent Wetland Grass seed mix and the Sedge Meadow and Emergent Wetland Edge Forb seed mix shall be supplied in separate bags of three mix components: Temporary Cover, Permanent Grasses, and Forbs. All native seed species will be local genotype and verified that original seed collection source will be from within a radius of 150 miles from Lake County. The Sedge Meadow and Emergent Wetland Edge Forb seed mix shall be supplied with the appropriate inoculants. Fertilizer is not required.

Add the following to Article 250.05 Seed Bed Preparation.

Before seeding begins, the Contractor shall be responsible for ensuring that each previous tradesperson or contractor has fulfilled preparatory requirements (grading, compaction, debris removal, snag placement, etc.).

Article 250.07 Seeding Mixtures – Delete sentence 4. Add the following to Table 1 – Seeding Mixtures:

<u>CLASS – TYPE</u>	<u>SEEDS</u>	<u>PURE LIVE SEED OZ/ACRE</u>
Sedge Meadow and Emergent Wetland Edge Grasses		76.25
	Calamagrostis canadensis (Blue Joint Grass)	1.0
	Carex cristatella (Crested Oval Sedge)	2.0
	Carex lacustris (Common Lake Sedge)	4.0
	Carex stipata (Common Fox Sedge)	2.0
	Carex stricta (Common Tussock Sedge)	1.25
	Carex trichocarpa (Hairy-fruited Lake Sedge)	0.50
	Carex vulpinoidea (Brown Fox Sedge)	8.0
	Elymus virginicus (Virginia Wild Rye)	16.0
	Glyceria striata (Fowl Manna Rye)	8.0
	Juncus torreyi (Torrey's Rush)	0.50
	Leersia oryzoides (Rice Cut Grass)	2.0
	Scirpus acutus (Hard-stemmed Bulrush)	4.0
	Scirpus atrovirens (Dark Green Rush)	6.0
	Scirpus cyperinus (Wool Grass)	1.0
	Scirpus pungens (Chairmaker's Rush)	2.0
	Scirpus validus creber (Great Bulrush)	2.0
	Spartina pectinata (Prairie Cord Grass)	16.0
Temporary Cover		512 (oz/acre)
	Avena sativa (Oats)	512.0 (November 1 to May 31)
	Elymus virginicus (Virginia Wild Rye)	48.0 (June 1 to October 31)

<u>CLASS - TYPE</u>	<u>SEEDS</u>	<u>PURE LIVE SEED OZ/ACRE</u>
Sedge Meadow and Emergent Wetland Edge Forbs		39.5
	Alisima subcordatum (Common Water Plantain)	2.0
	Asclepias incarnata (Swamp Milkweed)	0.50
	Aster novae-angliae (New England Aster)	1.0
	Aster puniceus (Bristly Aster)	0.50
	Bidens cernua (Nodding Bur Marigold)	0.50
	Eupatorium maculatum (Spotted Joe-Pye Weed)	1.0
	Eupatorium perfoliatum (Common Boneset)	0.50
	Iris virginica shrevei (Blue Flag)	3.0
	Liatris spicata (Marsh Blazing Star)	2.0
	Lobelia siphilitica (Great Blue Lobelia)	8.0
	Pontederia cordata (Pickereel Weed)	1.0
	Pycnanthemum virginianum (Common Mountain Mint)	0.50
	Sagittaria latifolia (Common Arrow-head)	8.0
	Solidago gigantea (Late Goldenrod)	1.0
	Sparganium eurycarpum (Common Bur-reed)	8.0
	Verbena hastata (Blue Vervain)	3.0
	Zizia aurea (Golden Alexanders)	1.0

Notes:

1. The seeding time for this work shall be from November 1 to May 31. Seeding done outside of this time frame will not be measured for payment.
2. Each bag shall be labeled. The label shall bear the dealer's guarantee of mixture and year grown, purity and germination, with date of test, and collection source location. Purity and germination tests no older than twelve months of the date of sowing must be submitted to verify all bulk seed required to achieve LB PLS specified.
3. No seed shall be sown until the purity testing has been completed for seeds to be used and shows the seed meets the noxious weed requirements.

4. Seed, which has become wet, moldy, or otherwise damaged will not be acceptable. Prior to application, the Engineer must approve seed mix in the bags.
5. The seedbed shall be prepared and approved by the Engineer prior to seeding. The Contractor shall delineate the perimeter of the seedbed with wooden lathe. The wooden lathe shall remain in place.
6. No seed shall be sown during high winds or when the ground is not in proper condition for seeding.
7. The Engineer must witness the delivery of seed with original labels attached in the field. Provide to the Engineer the seed labels from the bags in which the seed is delivered in.
8. Temporary cover seed shall be kept separate from the Sedge Meadow / Emergent Wetland Edge type mixture. It shall be mixed on site under the direction of the Engineer.
9. In order to eliminate potential introduction of invasive or exotic species, all equipment used on the planting site shall be free of mud and/or plant material. This includes tires, mower decks, undercarriage, etc.
10. The Cover Crop shall be thoroughly mixed with the Sedge Meadow / Emergent Wetland Edge Grass seed mix and seeded using a mechanical seeder that applies the seed uniformly at a depth of 1/4 inch. Second, the Sedge Meadow / Emergent Wetland Edge Forb seed shall be thoroughly mixed with 2 bushels of moistened horticultural grade vermiculite per acre and uniformly seeded at a depth of 1/8 inch. The seedbed shall be immediately covered as specified.

If specified seed material is unavailable, the Engineer shall approve the substitutes in writing. Adjustments will be made at no cost to the contract. Approval of substitutes shall in no way waive any requirements of the contract.

Article 250.09 – Add Seeding, Sedge Meadow and Emergent Wetland Edge.

Seeding, Sedge Meadow and Emergent Wetland Edge forb mix horticultural grade vermiculite will not be measured for payment.

Supplemental watering will be measured for payment as specified in Special Provision for SUPPLEMENTAL WATERING.

Article 250.10 – Add Seeding, Sedge Meadow and Emergent Wetland Edge.

## **EROSION CONTROL BLANKET (SPECIAL)**

This Special Provision revises Section 251 of the Standard Specifications for Road and Bridge Construction to eliminate the use of Excelsior Blanket for Erosion Control Blanket. This work shall consist of furnishing, transporting, and placing 100 % biodegradable erosion control blanket over seeded areas as detailed on the plans, according to Section 251 except as modified herein.

Delete Article 1081.10(a) Excelsior Blanket.

Delete the first paragraph of Article 1081.10 (b) Knitted Straw Mat and substitute the following:

Knitted Straw Mat. Knitted straw mat shall be a machine-produced mat of 100% clean, weed free agricultural straw. The blanket shall be of consistent thickness with the straw evenly distributed over the entire area of the blanket. The blanket shall be covered on top and bottom sides with a 100% biodegradable woven natural organic fiber netting such as North American Green S150BN or equal. No plastic netting will be allowed. The top netting shall consist of machine directional strands formed from two intertwined yarns with cross directional strands interwoven through the twisted machine stands to form an approximate 0.50 x 1.0 (1.27 x 2.54 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-5 inches (5-12.5cm) from the edge) as an overlap guide for adjacent mats.

Short-term photodegradable erosion control blanket will not be allowed.

Delete Article 1081.10(d) Wire Staples.

Add the following to Article 1081.10 (e) Wood Stakes:

Biodegradable plastic stakes will be allowed. The biodegradable plastic anchor shall be approximately 6 in (15.24 cm) in length. No metal wire stakes will be allowed.

## **GENERAL REQUIREMENTS FOR WEED CONTROL SPRAYING**

### Experience:

The Contractor shall have previous experience with the use of weed control chemicals. He/she shall have had at least one (1) season's experience in the use of their chemicals in spraying highway right-of-way or at least three (3) season's experience in their use in farm or custom spraying. The Contractor shall observe and comply with all sections of the Illinois Custom Spray Law, including licensing.

### Equipment:

The equipment used shall consist of a vehicle-mounted tank, pump, spray bar and handgun, plus any other accessories needed to complete the specified work. Spraying shall be done through multiple low-pressure flooding or broad jet nozzles mounted on spray bars operated not more than 36" above the ground. If different sizes or types of nozzles are used to make up the spray pattern, the pressure, sizes and capacities shall be adjusted to provide a uniform rate of application for each segment of the spray pattern. Hand spray guns may be used for spraying areas around traffic control devices, lighting standard and similar inaccessible areas. Maximum speed of the spray vehicle during application of chemical shall be five (5) miles per hour.

Pumps used shall have a volume and pressure capacity range sufficient to deliver the mixture at a pressure to provide the required coverage and to keep the spray pattern full and steady without pulsation or excessive pressure as to cause fogging. Maximum pressure for application shall be 15 PSI. Quick acting shut-off valves and spring-loaded ball check valves shall be provided to stop the spray pattern with a minimum of nozzle drip. In areas where the spray vehicle must traverse the right-of-way, a four-wheel drive vehicle with flotation tires will be required to minimize damage to the ground surface.

Prior to beginning work, the Contractor shall obtain approval from the Engineer of the spraying equipment proposed for completing this work. The proposed equipment shall be in an operational condition and available for inspection by the Engineer at least two (2) weeks prior to the proposed starting time. If requested by the Engineer, the Contractor shall demonstrate the calibration of the equipment.

The equipment must provide consistently uniform coverage and keep the spray mixture sufficiently agitated or the work will be suspended until the equipment is repaired or replaced.

### Spraying Areas:

This work includes roadsides and other types of right-of-way of various widths and gradients. Spray areas often extend more than thirty (30) feet from the edge of the roadway, requiring both spray bar and hand gun applications.

When the description of work requires weed control of a stated species, such as teasel, the chemical shall be applied only to locations where the stated species is present. When the description of work requires general weed control within a bed or area, such as broadleaf weed control in turf, then the chemical shall be applied to the entire bed or area.

Exclusion of Spraying Areas:

Areas where weed control spraying is inappropriate or detrimental to the environment, desirable planting, or private property shall be excluded from the spray area.

Spraying will not be permitted over any drainage swales or waterways, or other areas where the chemical label prohibits application. Spraying within 150 feet of a natural area or site where endangered or threatened species occur.

Responsibility for Prevention of Damage to Private Property:

The Contractor shall, at all times, exercise extreme caution to prevent damage to residential plantings, flower or vegetable gardens, vegetable crops, farm crops, orchard or desirable plants adjacent to the roadside.

The Contractor or Department receives a complaint, the Contractor shall contact a complaint within ten (10) days after receiving a claim for damages, either in person or by letter. The Contractor, or his authorized representative, shall make a personal contact with the complainant within twenty (20) days. The Engineer shall also be notified by the Contractor of all claims for damage he received and shall keep the Engineer informed as to the progress in arriving at a settlement for such claims.

Communication with the Engineer:

The Contractor is required to communicate with the Engineer to receive all required approvals in a timely way and to assure that the Engineer can accurately document the work performed.

It shall be the Contractor's responsibility to assure that all chemical containers are opened and added to the spray mixture in the presence of the Engineer.

The Contractor shall obtain approval from the Engineer to proceed with spraying at each location 24 hours prior to the proposed spray operations.

## **WEED CONTROL, NON-SELECTIVE AND NON-RESIDUAL (WETLAND)**

Description: This work shall consist of the application of a non-selective, non-residual, post emergent herbicide to kill all existing vegetation at designated areas in and around aquatic sites along highway roadsides.

Materials: The non-selective and non-residual (Wetland) herbicide shall have a formulation in which contains glyphosate as the primary active ingredient and shall consist of the manufacturers specific formulation at the time of intended application. The approved herbicide provided must be proven to be effective on the target vegetation species as identified by the Engineer.

The Contractor shall submit a certificate, including the following, prior to starting work:

The chemical names of the compound and the percentage by weight of the ingredients which must match the above specified formulation.

A statement that the material is in a solution which will form a satisfactory emulsion for use when diluted with water for normal spraying conditions.

A statement that the herbicide, when mixed with water, will be completely soluble and dispersible and remain in suspension with continuous agitation.

A statement describing supplemental products proposed for use when the manufacturer of the herbicide requires that surfactants, drift control agents, or other additives be used with the product. These tank mix additives shall be used as specified by the manufacturer. Required additives will not be paid for separately.

**All material shall be brought to the spray area in the original, unopened containers supplied by the manufacturer. The herbicide formulation must be approved to use in or near water.**

Application Rate: The non-selective and non-residual herbicide shall be applied according to the label instructions.

Water for dilution of the mixture will not be paid for separately.

Method of Measurement: Weed Control, Non-selective and Non-Residual (Wetland) will be measured for payment in gallons of undiluted herbicide applied as specified. The gallons for payment will be determined based on the gallons specified on the label attached to the original container supplied by the manufacturer.

Basis of Payment: Weed Control, Non-selective and Non-Residual (Wetland) will be paid for at the contract unit price per gallon for WEED CONTROL, NON-SELECTIVE AND NON-RESIDUAL (WETLAND). Water for dilution of the mixture and additives required for application will not be paid for as separate items, but the costs shall be considered as included in the contract price for Weed Control, Non-selective and Non-Residual (Wetland), and no additional compensation will be allowed.



## **WEED CONTROL, PRE-EMERGENT GRANULAR HERBICIDE**

Description: This work shall consist of spreading a pre-emergent granular herbicide in areas as shown on the plans or as directed by the Engineer. This item will be used in mulched plant beds and mulch rings.

Materials: The pre-emergent granular herbicide (Snapshot 2.5 TG or equivalent) shall contain the chemicals Trifluralin 2% active ingredient and Isoxaben with 0.5% active ingredient. The herbicide label shall be submitted to the Engineer for approval at least seventy-two (72) hours prior to application.

Method: The pre-emergent granular herbicide shall be used in accordance with the manufacturer's directions on the package. The granules are to be applied prior to mulching.

Apply the granular herbicide using a drop or rotary-type designed to apply granular herbicide or insecticides. Calibrate application equipment to use according to manufacturer's directions. Check frequently to be sure equipment is working properly and distributing granules uniformly. Do not use spreaders that apply material in narrow concentrated bands. Avoid skips or overlaps as poor weed control or crop injury may occur. More uniform application may be achieved by spreading half of the required amount of product over the area and then applying the remaining half in swaths at right angles to the first. Apply the granular herbicide at the rate of 100 lbs/acre (112 kg/ha) or 2.3 lbs/1000 sq. ft. (11.2 kg/1000 sq. meters).

Method of Measurement: Pre-emergent granular herbicide will be measured in place in Pounds (Kilograms) of Pre-emergent Granular Herbicide applied. Areas treated after mulch placement shall not be measured for payment.

Basis of Payment: This work will be paid for at the contract unit price per pound (kilogram) of WEED CONTROL, PRE-EMERGENT GRANULAR HERBICIDE which price shall include all materials, equipment, and labor necessary to complete the work as specified.

## WEED CONTROL, TEASEL

Description: This work shall consist of the application of a broadleaf herbicide along highway roadsides for control of teasel and controlling broadleaf weeds in turf on expressways.

Materials: The broadleaf herbicide shall have the following formulation:

A. Active Ingredient		
Triisopropanolammonium salt of 2-pyridine		
Carboxylic acid, 4-amino-3, 6-dichloro-		40.6%
B. Inert Ingredients		<u>59.4%</u>
	TOTAL	100.00%

The Contractor shall submit a certificate, including the following, prior to starting work:

1. The chemical names of the compound and the percentage by weight of the ingredients which must match the above specified formulation.
2. A statement that the material is in a solution which will form a satisfactory emulsion for use when diluted with water for normal spraying conditions.
3. A statement that the herbicide, when mixed with water, will be completely soluble and dispersible and remain in suspension with continuous agitation.
4. A statement describing the products proposed for use when the manufacturer of herbicide requires that surfactants, drift control agents, or other additives be used with the product. These tank mix additives shall be used as specified by the manufacture. Required additives will not be paid for separately.

**All material shall be brought to the spray area in the original, unopened containers supplied by the manufacturer.**

Schedule: Spraying will not be allowed when temperatures exceed 90° F or under 45° F, when wind velocities exceed fifteen (15) miles per hour, when foliage is wet or rain is eminent, when visibility is poor or during legal holiday periods.

Application Rate: The application rate will be the same for both Teasel/Thistle control and Broadleaf in Turf control.

The broadleaf herbicide shall be applied at the rate of five (5) ounces per acre. Formulation shall be diluted with a minimum of fifty (50) gallons of water and applied as a mixture. Water for dilution of the mixture will not be paid for separately.

Method of Measurement: Weed Control, Teasel will be measured for payment in gallons (liters) of undiluted herbicide applied as specified.

Basis of Payment: Weed Control, Teasel will be paid for at the contract unit price per gallon (liters) for WEED CONTROL, TEASEL. Water for dilution of the mixture and additives required for application will not be paid for as separate items, but the costs shall be considered as included in the contract unit price for Weed Control, Teasel, and no additional compensation will be allowed.

## **MAINTENANCE MOWING (FOR PRAIRIE AND TURF)**

Description: This work shall consist of mowing of: 1) prairie grass areas as close to the ground as possible and 2) turf grass areas to a height not more than 75 mm (3 inches). Prairie grass areas shall include only those areas seeded with Seeding Classes 4, 4A, 4B, and 5. Turf grass shall include only those areas sodded and seeded with Seeding Class 2A.

Schedule: Prairie grass mowing shall take place once between March 15 and April 15 and turf grass mowing shall be performed two (2) times per month from May to September.

Equipment: The Contractor shall keep all mowing equipment sharp and properly equipped for operation along an urban arterial route. The equipment used shall be capable of completely severing all growth at the cutting height and distributing it evenly over the mowed area. Special equipment may be required for prairie grass cutting, on steep slopes, in narrow areas, and for trimming around posts, poles, fences, trees, shrubs, seedlings, etc.

Method: All mowing and trimming operations are to proceed in the direction of traffic flow. The cut material shall not be windrowed or left in a lumpy or bunched condition. Additional mowing or trimming may be required to obtain the height specified or to disperse mowed material. Prairie grass shall have trimmings removed or very finely mulched to avoid thatch build-up and to expose the soil surface and encourage soil warming in the absence of prescribed burning.

Debris encountered during the mowing operations which hampers the operation or is visible from the roadway shall be removed and disposed of according to Article 202.03. All trimmings, windrowed material, and debris removal must be complete to the satisfaction of the Engineer. Damage to the turf, such as ruts or wheel tracks more than 2 inches (50 MM) in depth, or other plantings or highway appurtenances caused by the mowing or trimming operation shall be repaired at the Contractor's expense.

Method of Measurement: Mowing and trimming will be measured in acres (hectares) of surface area mowed at the completion of each mowing cycle.

Plan quantities are estimates only. Actual quantities will be measured in place. Agreement to plan quantities will not be allowed. Shrub beds or perennial beds within the mowed area that are less than 1000 square feet (90 square meters) will not be subtracted from the area mowed.

Basis of Payment: This work will be paid for at the contract unit price per acre (hectare) for MAINTENANCE MOWING. Any additional mowing or trimming required to obtain the height specified or to disperse mowed material will be considered as included in the cost of the initial mowing. Payment for mowing and trimming shall include the cost of all material, equipment, labor, removal, disposal and incidentals required to complete the work as specified herein and to the satisfaction of the Engineer.

**MOWING (SPECIAL)**

Modified: October 31, 2012

Description: This work shall consist of mowing and or hand trimming areas of large stands of *Phragmites species and Teasel species* to a height of 6". It shall take place in very difficult to mow areas that may consist of one or more of the following scenarios: narrow spaces less than 2 feet wide, steep slopes greater than 2:1, excessive debris and brush, areas of permanently wet conditions, and/or areas of uneven ground. These areas may not be able to be mowed with typical roadside mowing equipment.

Schedule and Height of Mowing: As directed by the Engineer.

Equipment: The Contractor shall keep all mowing equipment sharp and properly equipped for operation within an urban arterial route. The equipment used shall be capable of completely severing all growth at the cutting height and distributing it evenly over the mowed area. Special equipment may be required to cut weed trees and brush up to 2" diameter on steep slopes, in narrow areas, and for trimming around posts, poles, trees, shrubs, seedlings, along fences and concrete retaining walls, etc.

Method: All mowing and trimming operations are to proceed in the direction of traffic flow. The cut material shall not be windrowed or left in a lumpy or bunched condition. All drain inlets must be kept clean and draining freely. Additional mowing or trimming may be required to obtain the height specified or to disperse mowed material. When amount of grass is heavy, cut grass shall be removed to prevent destruction of underlying turf. If weeds or other undesirable vegetation threatens to smother planted species, or in case of weeds exceeding growth of planted species, at the direction of the Engineer, the weeds shall be uprooted, raked and removed from the area. No more than 1/3 of the total growth of grass shall be cut off at one time and only when plants are dry and soil is not wet.

Remove litter, including plastic bags, paper, bottles, etc. prior to mowing. Debris encountered during the mowing operations, including the cut material from *Phragmites species and Teasel species*, shall be removed and disposed of according to Article 202.03. All trimmings, windrowed material, litter and debris removal must be complete to the satisfaction of the Engineer. Damage to the turf, such as ruts or wheel tracks more than 2 inches (50 MM) in depth, scalping of the mowed areas, or other plantings or highway appurtenances caused by the mowing or trimming operation shall be repaired at the Contractor's expense and to the satisfaction of the Engineer.

Method of Measurement: Mowing and trimming will be measured in acres of surface area mowed.

Basis of Payment: This work will be paid for at the contract unit price per acre for MOWING (SPECIAL). Any additional mowing or trimming required to obtain the height specified or to disperse mowed material will be considered as included in the cost of the initial mowing. Payment for mowing and trimming shall include the cost of all material, equipment, labor, removal, disposal and incidentals required to complete the work as specified herein and to the satisfaction of the Engineer.

**PLANTING SEDGE MEADOW PLUGS**  
**PLANTING WETLAND PLUGS**

This work shall consist of furnishing and installing sedge meadow and/or wetland plugs, installing and removing goose grid barrier, initial watering of the plugs and other materials required in the planting operation as shown in the plans and details and as directed by the Engineer.

All work, materials, and equipment shall conform to Sections 254 and 1081 of the Standard Specifications except as modified herein.

Add the following to Article 254.02 Materials:

All plants shall be healthy, vigorous, and true to species and variety. All materials shall be provided by a certified nursery and shall be free of pests and disease. All plant materials shall comply with State and federal laws with respect to inspection for plant diseases and infestations. Written approval shall be necessary for substitutions.

Plugs – original seed source shall be within 150 miles of the project site location. Written approval will be required for substitutions and plant material purchased outside a 150 mile radius of the site.

Delete Article 254.03(b) Planting Time and substitute the following:

Plugs shall only be planted between May 1 and June 15. Approval from the Engineer must be received for all planting dates.

Add the following to Article 254.04 Transporting and Storing Plants:

Each species should be handled and packed in the manner approved for the plant, having regard for the soil climatic conditions at the time and place of digging and delivery, and for the time that will be consumed for transit and delivery.

Plant materials shall be packed to ensure adequate protection against damage during transit. The plants shall be protected with wet material to ensure that the plant materials are delivered in a moist and cool condition. The vehicle should be ventilated to prevent overheating.

Plant materials shall be stored in a shaded area. Watering shall occur to maintain plant vigor during on-site storage.

An on-site inspection will be made prior to the installation of plant material. Any plant material not meeting specification (that being of good health) must be moved off the site.

Delete Article 254.05 Layout of Planting and substitute the following:

When plants are specified to be planted in prepared soil planting beds, the planting bed shall be approved by the Engineer prior to planting. The Contractor shall be responsible for all plant layout. The layout must be performed by qualified personnel. The planting locations must be laid out as shown in the landscape plan. Plant plugs according to planting plan in overlapping zones to provide a natural gradient. Bed limits shall be painted or flagged. Individual plants layout shall be marked prior to installation. The Engineer will contact the Roadside Development Unit at (847) 705-4171 to approve the layout prior to installation. Allow a minimum of three (3) days prior to installation for approval.

Delete Article 254.06 (b) Planting Procedures and substitute the following:

When planting plugs in areas as shown on the plans or as directed by the Engineer, the following work shall be performed prior to planting:

- Permanent Seeding and Erosion Control Blanket must be installed prior to planting plugs to avoid damage to plantings.
- Trees and shrubs must be installed first to establish proper layout and to avoid damage to other plantings.
- Snags must be placed first to establish proper layout and to avoid damage to other plantings.

Install plugs through erosion control blanket with planting bar. Planting holes shall be as deep or slightly deeper than the plug roots to allow placing the plant without bending roots. Plant shall be placed flush with the earth surface. Hole shall be filled with soil carefully to avoid damage to roots and to leave no voids and pressed firm to earth surface to ensure soil contact.

Contractor shall provide and maintain all equipment necessary for planting, including watering equipment, water, and hoses. Immediately after planting, thoroughly water plant beds. Do not wash soil onto crowns of plants. The soil surface should be damp and all plugs must receive a minimum of equal to at least 1" of rain per week for the first four weeks following planting.

Install Goose Grid Barrier(s) along the perimeters of wetland planting pods (groupings) to prevent geese from uprooting and damaging the native plug plantings. Goose Grid Barrier(s) shall be installed at the time of planting to protect plugs from predation. The Contractor will not be relieved in any way from the responsibility of protecting plugs from geese predation due to lack of proper maintenance of Goose Grid Barriers.

1. Posts – 1" x 4" x 48" square Oak stakes or metal posts place 7-10' on center
2. Poultry fence, 24" with ¾" x 1" grid, along the perimeter with cable ties.
3. Install bailing twine, from post top to post top (to form an "X"), to prevent the geese from entering the enclosure from the air.
4. Repair as necessary to remain effective for 12 months.
5. Remove and dispose when directed by the Engineer.

Delete the first sentence of Article 254.07 Mulching and substitute the following:

The plugs are not required to be mulched.

Delete Article 254.08 (b) Period of Establishment and substitute the following:

Plugs must undergo a 30-day period of establishment. Additional watering shall be performed not less than three times a week for four weeks following installation. Water shall be applied at the rate of at least 2 gallons per square foot. Should excess moisture prevail, the Engineer may delete any or all of the additional watering cycles. In severe weather, the Engineer may require additional watering.

A spray nozzle that does not damage small plants must be used when watering native plant plugs. Water shall be applied at the base of the plant to keep as much water as possible off plant leaves. The plants to be watered and the method of application will be approved by the Engineer. The Contractor will not be relieved in any way from the responsibility for unsatisfactory plants due to the amount of watering.

Add the following to Article 254.09 Method of Measurement:

- a) Disposal of debris (rock, stones, concrete, bottles, plastic bags, Goose Grid Barrier, etc.) removed from the plug plantings as specified in Article 202.03.
- b) Goose Grid Barrier will not be measured for payment.

Delete Article 253.17 Basis of Payment and substitute the following:

- a) Payment for Goose Grid Barrier shall be included in the contract unit price of the Perennial Plants, Wetland Type Plug and/or Perennial Plants, Sedge Meadow Plug pay item.
- b) The unit price shall include the cost of all materials, soil amendments, equipment, labor, plant care, removal, disposal and incidentals required to complete the work as specified herein and to the satisfaction of the Engineer.

## **PLANTING WOODY PLANTS**

This work shall consist of planting woody plants as specified in Section 253 of the Standard Specifications with the following revisions:

### **Delete Article 253.03 Planting Time and substitute the following:**

Spring Planting. This work shall be performed between March 15th and May 31st except that evergreen planting shall be performed between March 15th and April 30th in the northern zone.

### **Add the following to Article 253.03 (a) (2) and (b):**

All plants shall be obtained from Illinois Nurserymen's Association or appropriate state chapter nurseries. All trees and shrubs shall be dug prior to leafing out (bud break) in the spring or when plants have gone dormant in the fall, except for the following species which are only to be dug prior to leafing out in the spring:

- Maple (*Acer* spp.)
- Buckeye (*Aesculus* spp.)
- Serviceberry (*Amelanchier* spp.)
- Hackberry (*Celtis occidentalis*)
- Hawthorn (*Crataegus* spp.)
- Black Walnut (*Juglans nigra*)
- Crabapple (*Malus* spp.)
- Black Tupelo (*Nyssa sylvatica*)
- American Hophornbeam (*Ostrya virginiana*)
- Oak (*Quercus* spp.)
- Baldcypress (*Taxodium distichum*)
- American Linden (*Tilia americana*)

Fall Planting. This work shall be performed between October 1<sup>st</sup> and November 30<sup>th</sup> except that evergreen planting shall be performed between August 15<sup>th</sup> and October 15<sup>th</sup>.

Planting dates are dependent on species of plant material and weather. Planting might begin or end prior or after above dates as approved by the Engineer. Do not plant when soil is muddy or during frost. No plant material shall be installed prior to the final grade of the planting soil. Trees must be installed first to establish proper layout and to avoid damage to other plantings.



**Add the following to Article 253.05 Transportation:**

Cover plants during transport. Plant material transported without cover shall be automatically rejected.

**Delete the third sentence of Article 253.07 and substitute the following:**

The Engineer will place the marking flags. Allow a minimum of seven working (7) days prior to installation for layout. The Contractor shall be responsible for:

1. Providing marking flags to the Engineer for locating plants.
2. Contacting utility companies to identify any conflicts with the proposed planting locations after flags have been placed.
3. Obtaining approval from the Engineer for any relocation of proposed plantings due to utility conflicts, or other conflicts.

**Delete Article 253.08 Excavation of Plant Holes and substitute the following:**

Protect structures, utilities, sidewalks, knee walls, fences, pavements, utility boxes, other facilities, lawns and existing plants from damage caused by planting operations.

Holes for trees shall be dug at the location indicated by the marking stakes. Holes for shrubs shall be dug within the marked outline of the planting bed. The spacing of plants will be designated on the plans. Spacing shall be measured from center-to-center, and alternate rows shall be staggered.

Excavate with sides vertical, bottom flat but with high center for drainage. Deglaze sides. The planting hole shall be twice the diameter of the root ball if possible, but in no case shall the hole be less than twelve (12) inches wider. Any soil covering the tree's root flair shall be removed to expose the crown, along with any secondary root growth, prior to planting. Remove all excavated subsoil from the site and dispose as specified in Article 202.03. The excavated material shall not be stockpiled on turf or in ditches.

**Delete the third and fourth paragraphs of Article 253.10 Planting Procedures and Article 253.10 (a) and substitute the following:**

Trees, shrubs, and vines shall be thoroughly watered with a method approved by the Engineer. Approved watering equipment shall be at the site of the work and in operational condition PRIOR TO STARTING the planting operation and DURING all planting operations OR PLANTING WILL NOT BE ALLOWED.

Set plants in the excavated hole with top of ball 2 to 3 inches above finished grade. Add soil as required under ball to achieve plumb. Remove all burlap and wire baskets from top three quarters (3/4) of the root ball. The remaining burlap shall be loosened and scored to provide the root system quick contact with the soil. All ropes or wires shall be removed from the root ball and tree trunk.

The hole shall be half (1/2) filled with soil, firmly packed, then saturated with water. After the water has soaked in, more soil shall be added to the top of the hole, and then the hole shall be saturated again. Maintain plumb during backfilling. Visible root flair shall be left exposed, uncovered by the addition of soil. By mounding up the soil around the hole, create a saucer depression around the tree to hold future water. In most cases, the backfill around the root ball shall be the same soil that was removed from the hole. Where rocks, gravel, heavy clay or other debris are encountered, clean top soil shall be used. Do not backfill excavation with subsoil.

**Delete Article 253.11 and substitute the following:**

Within 48 hours after planting, mulch shall be placed around all plants in the entire mulched bed or at the base of each tree to its dripline specified to a depth of 4 inches (100 mm). No weed barrier fabric will be required for tree and shrub planting.

The mulch shall consist of wood chips or shredded tree bark free not to exceed two (2) inches in its largest dimension, free of foreign matter, sticks, stones, and clods. A sample and request for material inspection form must be supplied to the Engineer for approval prior to performing any work.

Care shall be taken not to bury leaves, stems, or vines under mulch material. The mulch shall be pulled away 6" from the tree trunk, allowing the root flair at the base of the tree to be exposed and free of mulch contact. All finished mulch areas shall be left smooth and level to maintain uniform surface and appearance. After the mulch placement, any debris or piles of material shall be immediately removed from the right of way, including raking excess mulch out of turf areas.

**Delete Article 253.12 Wrapping and substitute the following:**

Any paper or cardboard trunk wrap must be removed before placing the tree in the tree hole in order to inspect the condition of the trunks. Within 48 hours, "A layer of commercial screen wire mesh shall be wrapped around the trunk of all deciduous trees. The screen wire shall be secured to itself with staples or single wire strands tied to the mesh. Trees shall be wrapped at time of planting, before the installation of mulch. The lower edge of the screen wire shall be in continuous contact with the ground and shall extend up to the lowest major branch.

**Add the following to Article 253.13 Bracing:**

Trees required to be braced shall be braced within 24 hours of planting.

**Add the following to the first paragraph of Article 253.14 Period of Establishment:**

Prior to being accepted, the plants shall endure a period of establishment. This period shall begin as soon as the tree is installed and end in December of the same year.

**Delete the last sentence of the first paragraph of Article 253.15 Plant Care and substitute the following:**

This may require pruning, cultivating, tightening and repairing supports, repair of wrapping, and furnishing and applying sprays as necessary to keep the plants free of insects and disease. The Contractor shall provide plant care a minimum of every two weeks, or within 3 days following notification by the Engineer. All requirements for plant care shall be considered as included in the cost of the contract.

**Delete the first paragraph of Article 253.15 Plant Care (a) and substitute the following:**

During plant care additional watering shall be performed at least every two weeks during the months of May through December. The contractor shall apply a minimum of 35 gallons of water per tree, 25 gallons per large shrub, 15 gallons per small shrub, and 4 gallons per vine. The Engineer may direct the Contractor to adjust the watering rate and frequency depending upon weather conditions.

**Delete Article 253.17 Basis of Payment and substitute the following:**

This work will be paid for at the contract unit price per each for TREES, SHRUBS, or VINES, of the species, root type, and plant size specified; and per unit for SEEDLINGS. Payment will be made according to the following schedule.

- (a) Initial Payment. Upon completion of planting, mulch covering, wrapping, and bracing, 75 percent of the pay item(s) will be paid.
- (b) Final Payment. Upon inspection and acceptance of the plant material, or upon execution of a third party bond, the remaining 25 percent of the pay item(s) will be paid.”

## **AGGREGATE SURFACE COURSE FOR TEMPORARY ACCESS**

Effective: April 1, 2001

Revised: January 2, 2007

Revise Article 402.10 of the Standard Specifications to read:

**“402.10 For Temporary Access.** The contractor shall construct and maintain aggregate surface course for temporary access to private entrances, commercial entrances and roads according to Article 402.07 and as directed by the Engineer.

The aggregate surface course shall be constructed to the dimensions and grades specified below, except as modified by the plans or as directed by the Engineer.

- (a) Private Entrance. The minimum width shall be 12 ft (3.6 m). The minimum compacted thickness shall be 6 in. (150 mm). The maximum grade shall be eight percent, except as required to match the existing grade.
- (b) Commercial Entrance. The minimum width shall be 24 ft (7.2 m). The minimum compacted thickness shall be 9 in. (230 mm). The maximum grade shall be six percent, except as required to match the existing grade.
- (c) Road. The minimum width shall be 24 ft (7.2 m). The minimum compacted thickness shall be 9 in. (230 mm). The grade and elevation shall be the same as the removed pavement, except as required to meet the grade of any new pavement constructed.

Maintaining the temporary access shall include relocating and/or regrading the aggregate surface course for any operation that may disturb or remove the temporary access. The same type and gradation of material used to construct the temporary access shall be used to maintain it.

When use of the temporary access is discontinued, the aggregate shall be removed and utilized in the permanent construction or disposed of according to Article 202.03.”

Add the following to Article 402.12 of the Standard Specifications:

“Aggregate surface course for temporary access will be measured for payment as each for every private entrance, commercial entrance or road constructed for the purpose of temporary access. If a residential drive, commercial entrance, or road is to be constructed under multiple stages, the aggregate needed to construct the second or subsequent stages will not be measured for payment but shall be included in the cost per each of the type specified.”

Revise the second paragraph of Article 402.13 of the Standard Specifications to read:

“Aggregate surface course for temporary access will be paid for at the contract unit price per each for TEMPORARY ACCESS (PRIVATE ENTRANCE), TEMPORARY ACCESS (COMMERCIAL ENTRANCE) or TEMPORARY ACCESS (ROAD).

Partial payment of the each amount bid for temporary access, of the type specified, will be paid according to the following schedule:

- (a) Upon construction of the temporary access, sixty percent of the contract unit price per each, of the type constructed, will be paid.
- (b) Subject to the approval of the Engineer for the adequate maintenance and removal of the temporary access, the remaining forty percent of the pay item will be paid upon the permanent removal of the temporary access.”

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

Effective: June 26, 2006

Revised: April 1, 2016

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 5) .....1031”

Add the following note to 1030.02 of the Standard Specifications:

Note 5. 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.

**FLY ASH RESTRICTION**

Effective: May 8, 2012

Revised: December 10, 2013

The use of fly ash in any PCC mixtures will not be allowed. All references to fly ash in the Standard Specifications or contract special provisions shall not apply.

**HMA MIXTURE DESIGN REQUIREMENTS (D-1)**

Effective: January 1, 2013

Revised: January 1, 2018

**1) Design Composition and Volumetric Requirements**

Revise the table in Article 406.06(d) of the Standard Specifications to read:

"MINIMUM COMPACTED LIFT THICKNESS	
Mixture Composition	Thickness, in. (mm)
IL-4.75	3/4 (19)
SMA-9.5, IL-9.5, IL-9.5L	1 1/2 (38)
SMA-12.5	2 (50)
IL-19.0, IL-19.0L	2 1/4 (57)"

Revise the table in Article 1004.03(c) of the Standard Specifications to read:

"Use	Size/Application	Gradation No.
Class A-1, 2, & 3	3/8 in. (10 mm) Seal	CA 16
Class A-1	1/2 in. (13 mm) Seal	CA 15
Class A-2 & 3	Cover	CA 14
HMA High ESAL	IL-19.0 IL-9.5	CA 11 <sup>1/</sup> CA 16, CA 13 <sup>3/</sup>
HMA Low ESAL	IL-19.0L IL-9.5L Stabilized Subbase or Shoulders	CA 11 <sup>1/</sup> CA 16
SMA <sup>2/</sup>	1/2 in. (12.5mm) Binder & Surface IL 9.5 Surface	CA13 <sup>3/</sup> , CA14 or CA16  CA16, CA 13 <sup>3/</sup>

1/ CA 16 or CA 13 may be blended with the gradations listed.

2/ The coarse aggregates used shall be capable of being combined with stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation and mineral filler to meet the approved mix design and the mix requirements noted herein.

3/ CA 13 shall be 100 percent passing the 1/2 in. (12.5mm) sieve.

Revise Article 1004.03(e) of the Supplemental Specifications to read:

"(e) Absorption. For SMA the coarse aggregate shall also have water absorption ≤ 2.0 percent."

Revise the last paragraph of Article 1102.01 (a) (5) of the Standard Specifications to read:

“IL-4.75 and Stone Matrix Asphalt (SMA) mixtures which contain aggregate having absorptions greater than or equal to 2.0 percent, or which contain steel slag sand, shall have minimum surge bin storage plus haul time of 1.5 hours.”

Revise the nomenclature table in Article 1030.01 of the Standard Specifications to read:

“High ESAL	IL-19.0 binder; IL-9.5 surface; IL-4.75; SMA-12.5, SMA-9.5
Low ESAL	IL-19.0L binder; IL-9.5L surface; Stabilized Subbase (HMA) <sup>1/</sup> ; HMA Shoulders <sup>2/</sup>

1/ Uses 19.0L binder mix.

2/ Uses 19.0L for lower lifts and 9.5L for surface lift.”

Revise Article 1030.02 of the Standard Specifications and Supplemental Specifications to read:

“**1030.02 Materials.** Materials shall be according to the following.

Item .....	Article/Section
(a) Coarse Aggregate .....	1004.03
(b) Fine Aggregate .....	1003.03
(c) RAP Material .....	1031
(d) Mineral Filler .....	1011
(e) Hydrated Lime .....	1012.01
(f) Slaked Quicklime (Note 1)	
(g) Performance Graded Asphalt Binder (Note 2) .....	1032
(h) Fibers (Note 3)	
(i) Warm Mix Asphalt (WMA) Technologies (Note 4)	

Note 1. Slaked quicklime shall be according to ASTM C 5.

Note 2. The asphalt binder shall be an SBS PG 76-28 when the SMA is used on a full-depth asphalt pavement and SBS PG 76-22 when used as an overlay, except where modified herein. The asphalt binder shall be an Elvaloy or SBS PG 76-22 for IL-4.75, except where modified herein. The elastic recovery shall be a minimum of 80.



Note 3. A stabilizing additive such as cellulose or mineral fiber shall be added to the SMA mixture according to Illinois Modified AASHTO M 325. The stabilizing additive shall meet the Fiber Quality Requirements listed in Illinois Modified AASHTO M 325. Prior to approval and use of fibers, the Contractor shall submit a notarized certification by the producer of these materials stating they meet these requirements. Reclaimed Asphalt Shingles (RAS) may be used in Stone Matrix Asphalt (SMA) mixtures designed with an SBA polymer modifier as a fiber additive if the mix design with RAS included meets AASHTO T305 requirements. The RAS shall be from a certified source that produces either Type I or Type 2. Material shall meet requirements noted herein and the actual dosage rate will be determined by the Engineer.

Note 4. Warm mix additives or foaming processes shall be selected from the current Bureau of Materials and Physical Research Approved List, "Warm Mix Asphalt Technologies".

Revise Article 1030.04(a)(1) of the Standard Specifications and the Supplemental Specifications to read:

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

High ESAL, MIXTURE COMPOSITION (% PASSING) <sup>1/</sup>										
Sieve Size	IL-19.0 mm		SMA <sup>4/</sup> IL-12.5 mm		SMA <sup>4/</sup> IL-9.5 mm		IL-9.5 mm		IL-4.75 mm	
	min	max	min	max	min	max	min	max	min	max
1 1/2 in. (37.5 mm)										
1 in. (25 mm)		100								
3/4 in. (19 mm)	90	100		100						
1/2 in. (12.5 mm)	75	89	80	100		100		100		100
3/8 in. (9.5 mm)				65	90	100	90	100		100
#4 (4.75 mm)	40	60	20	30	36	50	34	69	90	100
#8 (2.36 mm)	20	42	16	24 <sup>5/</sup>	16	32 <sup>5/</sup>	34 <sup>6/</sup>	52 <sup>2/</sup>	70	90
#16 (1.18 mm)	15	30					10	32	50	65
#30 (600 μm)			12	16	12	18				
#50 (300 μm)	6	15					4	15	15	30
#100 (150 μm)	4	9					3	10	10	18
#200 (75 μm)	3	6	7.0	9.0 <sup>3/</sup>	7.5	9.5 <sup>3/</sup>	4	6	7	9 <sup>3/</sup>
Ratio Dust/Asphalt Binder		1.0		1.5		1.5		1.0		1.0

1/ Based on percent of total aggregate weight.

2/ The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with Ndesign = 90.

- 3/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer.
- 4/ The maximum percent passing the #635 (20 µm) sieve shall be ≤ 3 percent.
- 5/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted above the percentage stated on the table.
- 6/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted below 34 percent.

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				
	Voids in the Mineral Aggregate (VMA), % minimum			Voids Filled with Asphalt Binder (VFA), %
Ndesign	IL-19.0	IL-9.5	IL-4.75 <sup>1/</sup>	
50	13.5	15.0	18.5	65 – 78 <sup>2/</sup>
70				
90				

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

2/ VFA for IL-4.75 shall be 72-85 percent”

Replace Article 1030.04(b)(3) of the Standard Specifications with the following:

“(3) SMA Mixtures.

Volumetric Requirements SMA <sup>1/</sup>			
Ndesign	Design Air Voids Target %	Voids in the Mineral Aggregate (VMA), % min.	Voids Filled with Asphalt (VFA), %
80 <sup>4/</sup>	3.5	17.0 <sup>2/</sup>	75 - 83
		16.0 <sup>3/</sup>	

- 1/ Maximum draindown shall be 0.3 percent. The draindown shall be determined at the JMF asphalt binder content at the mixing temperature plus 30 °F.
- 2/ Applies when specific gravity of coarse aggregate is  $\geq 2.760$ .
- 3/ Applies when specific gravity of coarse aggregate is  $< 2.760$ .
- 4/ Blending of different types of aggregate will not be permitted. For surface course, 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.

Add to the end of Article 1030.05 (d) (2) a. of the Standard Specifications:

“During production, the Contractor shall test SMA mixtures for draindown according to AASHTO T305 at a frequency of 1 per day of production.”

Delete last sentence of the second paragraph of Article 1102.01(a) (4) b. 2.

Add to the end of Article 1102.01 (a) (4) b. 2.:

“As an option, collected dust (baghouse) may be used in lieu of manufactured mineral filler according to the following:

- (a.) Sufficient collected dust (baghouse) is available for production of the SMA mix for the entire project.
- (b.) A mix design was prepared based on collected dust (baghouse).

## 2) Design Verification and Production

Revise Article 1030.04 (d) of the Standard Specifications to read:

“(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 and shall meet the following requirements:

(1)Hamburg Wheel Test criteria. The maximum allowable rut depth shall be 0.5 in. (12.5 mm). The minimum number of wheel passes at the 0.5 in. (12.5 mm) rut depth criteria shall be based on the high temperature binder grade of the mix as specified in the mix requirements table of the plans.

Illinois Modified AASHTO T 324 Requirements <sup>1/</sup>

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

1/ When produced at temperatures of 275 ± 5 °F (135 ± 3 °C) or less, loose Warm Mix Asphalt shall be oven aged at 270 ± 5 °F (132 ± 3 °C) for two hours prior to gyratory compaction of Hamburg Wheel specimens.

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 60 psi (415 kPa) for non-polymer modified performance graded (PG) asphalt binder and 80 psi (550 kPa) for polymer modified PG asphalt binder. The maximum allowable unconditioned tensile strength shall be 200 psi (1380 kPa).”

Production Testing. Revise first paragraph of Article 1030.06(a) of the Standard Specifications to read:

“(a) High ESAL, IL-4.75, WMA, and SMA Mixtures. For each contract, a 300 ton (275 metric tons) test strip, except for SMA mixtures it will be 400 ton (363 metric ton), will be required at the beginning of HMA production for each mixture at the beginning of each construction year according to the Manual of Test Procedures for Materials “Hot Mix Asphalt Test Strip Procedures”. At the request of the Producer, the Engineer may waive the test strip if previous construction during the current construction year has demonstrated the constructability of the mix using Department test results.”

Add the following after the sixth paragraph in Article 1030.06 (a) of the Standard Specifications:

“The Hamburg Wheel test shall also be conducted on all HMA mixtures from a sample taken 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.

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”

Method of Measurement:

Add the following after the fourth paragraph of Article 406.13 (b):

“The plan quantities of SMA mixtures shall be adjusted using the actual approved binder and surface Mix Design’s  $G_{mb}$ .”

Basis of Payment.

Replace the fourth paragraph of Article 406.14 of the Standard Specifications with the following:

“Stone matrix asphalt will be paid for at the contract unit price per ton (metric ton) for POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, STONE MATRIX ASPHALT, of the mixture composition and  $N_{design}$  specified; and POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, STONE MATRIX ASPHALT, of the mixture composition and  $N_{design}$  specified.”

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

Effective: November 1, 2012

Revise: April 1, 2017

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 in. (75 mm) 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  $\leq 1000$  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 test 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), Gmm. 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 □m)	□ 5 %
No. 200 (75 □m)	□ 2.0 %
Asphalt Binder	□ 0.3 %
Gmm	□ 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 ITP, "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	
% Passing:1/ FRAP	RAS	
1/2 in.	5.0%	
No. 4	5.0%	
No. 8	3.0%	4.0%
No. 30	2.0%	4.0%
No. 200	2.2%	4.0%
Asphalt Binder Content	0.3%	3.0%
Gmm	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 homogeneous, 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 laboratory prequalified by the Department for the specified testing. The consultant laboratory 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 Bureau of Materials and Physical Research Aggregate Lab for MicroDeval Testing, according to ITP 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 the 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 percent 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				Maximum % ABR	
Ndesign	1/	2/	4/	Binder/Leveling Binder	Polymer Modified 3/
30L	50	40	30		
50	40	35	30		
70	40	30	30		
90	40	30	30		
4.75 mm N-50				40	
SMA N-80				30	

1/ For Low ESAL HMA shoulder and stabilized subbase, the percent asphalt binder replacement shall not exceed 50 % of the total asphalt binder in the mixture.

2/ When the binder replacement exceeds 15 % 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 % 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 %, the required virgin asphalt binder grade shall be PG64-28.

3/ When the ABR for SMA or IL-4.75 is 15 % 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/ When FRAP or RAS is used alone, the maximum percent asphalt binder replacement designated on the table shall be reduced by 10 %.

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  $\pm 0.5$  percent of the amount of RAS utilized. When using the weight depletion system, flow indicators or sensing devices shall be provided and interlocked with the plant controls such that the mixture production is halted when RAS flow is interrupted.

(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 (0.1 metric 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 Wedge Shoulders, Type B. 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 shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications".

(c) Gradation. The RAP material shall meet the gradation requirements for CA 6 according to Article 1004.01(c), except the requirements for the minus No. 200 (75  $\mu$ m) sieve shall not apply. The sample for the RAP material shall be air dried to constant weight prior to being tested for gradation."

### **AGGREGATE SUBGRADE IMPROVEMENT (D-1)**

Effective: February 22, 2012

Revised: April 1, 2016

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 .....	1004.07
(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 gradation CS 01 but shall not exceed 40 percent by weight 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 gradation CS 01 is used in lower lifts. When RAP is blended with any of the coarse aggregates, the blending shall be done with mechanically calibrated feeders. The final product shall not contain more than 40 percent by weight of RAP.

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. The calibration for the mechanical feeders shall have an accuracy of  $\pm 2.0$  percent of the actual quantity of material delivered.

**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 gradation CS 01 shall be 24 in. (600 mm).



**303.06 Capping Aggregate.** The top surface of the aggregate subgrade shall consist of a minimum 3 in. (75 mm) of aggregate gradations CA 06 or CA 10. When 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:

**“1004.07 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. The top 12 inches of the aggregate subgrade improvement shall be 3 inches of capping material and 9 inches of crushed gravel, crushed stone or crushed concrete. In applications where greater than 36 inches of subgrade material is required, rounded gravel, meeting the CS01 gradation, may be used beginning at a depth of 12 inches below the bottom of pavement.
- (b) Quality. The coarse aggregate shall consist of sound durable particles reasonably free of deleterious materials. Non-mechanically blended RAP may be allowed up to a maximum of 5.0 percent.

(c) Gradation.

- (1) The coarse aggregate gradation for total subgrade thicknesses of 12 in. (300 mm) or greater shall be CS 01.

COARSE AGGREGATE SUBGRADE GRADATIONS					
Grad No.	Sieve Size and Percent Passing				
	8"	6"	4"	2"	#4
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20

COARSE AGGREGATE SUBGRADE GRADATIONS (Metric)					
Grad No.	Sieve Size and Percent Passing				
	200 mm	150 mm	100 mm	50 mm	4.75 mm
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20

- (2) The 3 in. (75 mm) capping aggregate shall be gradation CA 6 or CA 10.

**WEEP HOLE DRAINS FOR ABUTMENTS, WINGWALLS, RETAINING WALLS AND CULVERTS**

Effective: April 19, 2012

Revised: October 22, 2013

Delete the last paragraphs of Articles 205.05 and 502.10 and replace with the following.

“If a geocomposite wall drain according to Section 591 is not specified, a prefabricated geocomposite strip drain according to Section 1040.07 shall be placed at the back of each drain hole. The strip drain shall be 24 inches (600 mm) wide and 48 inches (1.220 m) tall. The strip drain shall be centered over the drain hole with the bottom located 12 inches (300 mm) below the bottom of the drain hole. All form boards or other obstructions shall be removed from the drain holes before placing any geocomposite strip drain.”

Revise the last sentence of the first paragraph of Article 503.11 to read as follows.

“Drain holes shall be covered to prevent the leakage of backfill material according to Article 502.10.”

Revise the title of Article 1040.07 to Geocomposite Wall Drains and Strip Drains.

## REMOVE CONCRETE END SECTION

Description. This work shall consist of removing concrete end sections from concrete pipe culverts as shown in the plans or as directed by the Engineer.

General. All work shall be performed in accordance with Article 501.05 of the Standard Specifications.

Method of Measurement. Removal of existing concrete end sections will be measured for payment in units of each.

## ADJUSTMENTS AND RECONSTRUCTIONS

Effective: March 15, 2011

Revise the first paragraph of Article 602.04 to read:

**“602.04 Concrete.** Cast-in-place concrete for structures shall be constructed of Class SI concrete according to the applicable portions of Section 503. Cast-in-place concrete for pavement patching around adjustments and reconstructions shall be constructed of Class PP-1 concrete, unless otherwise noted in the plans, according to the applicable portions of Section 1020.”

Revise the third, fourth and fifth sentences of the second paragraph of Article 602.11(c) to read:

“Castings shall be set to the finished pavement elevation so that no subsequent adjustment will be necessary, and the space around the casting shall be filled with Class PP-1 concrete, unless otherwise noted in the plans, to the elevation of the surface of the base course or binder course. HMA surface or binder course material shall not be allowed. The pavement may be opened to traffic according to Article 701.17(e)(3)b.”

Revise Article 603.05 to read:

**“603.05 Replacement of Existing Flexible Pavement.** After the castings have been adjusted, the surrounding space shall be filled with Class PP-1 concrete, unless otherwise noted in the plans, to the elevation of the surface of the base course or binder course. HMA surface or binder course material shall not be allowed. The pavement may be opened to traffic according to Article 701.17(e)(3)b.”

Revise Article 603.06 to read:

**“603.06 Replacement of Existing Rigid Pavement.** After the castings have been adjusted, the pavement and HMA that was removed, shall be replaced with Class PP-1 concrete, unless otherwise noted in the plans, not less than 9 in. (225 mm) thick. The pavement may be opened to traffic according to Article 701.17(e)(3)b.”

The surface of the Class PP concrete shall be constructed flush with the adjacent surface.” Revise the first sentence of Article 603.07 to read:

**“603.07 Protection Under Traffic.** After the casting has been adjusted and the Class PP concrete has been placed, the work shall be protected by a barricade and two lights according to Article 701.17(e)(3)b.”

**DRAINAGE AND INLET PROTECTION UNDER TRAFFIC (DISTRICT 1)**

Effective: April 1, 2011

Revised: April 2, 2011

Add the following to Article 603.02 of the Standard Specifications:

- “(i) Temporary Hot-Mix Asphalt (HMA) Ramp (Note 1) ..... 1030
- “(j) Temporary Rubber Ramps (Note 2)

Note 1. The HMA shall have maximum aggregate size of 3/8 in. (95 mm).

Note 2. The rubber material shall be according to the following.

Property	Test Method	Requirement
Durometer Hardness, Shore A	ASTM D 2240	75 ±15
Tensile Strength, psi (kPa)	ASTM D 412	300 (2000) min
Elongation, percent	ASTM D 412	90 min
Specific Gravity	ASTM D 792	1.0 - 1.3
Brittleness, °F (°C)	ASTM D 746	-40 (-40)”

Revise Article 603.07 of the Standard Specifications to read:

**“603.07 Protection Under Traffic.** After the casting has been adjusted and the Class PP concrete has been placed, the work shall be protected by a barricade and two lights according to Article 701.17(e)(3)b.

When castings are under traffic before the final surfacing operation has been started, properly sized temporary ramps shall be placed around the drainage and/or utility castings according to the following methods.

- (a) Temporary Asphalt Ramps. Temporary hot-mix asphalt ramps shall be placed around the casting, flush with its surface and decreasing to a featheredge in a distance of 2 ft (600 mm) around the entire surface of the casting.

- (b) Temporary Rubber Ramps. Temporary rubber ramps shall only be used on roadways with permanent posted speeds of 40 mph or less and when the height of the casting to be protected meets the proper sizing requirements for the rubber ramps as shown below.

Dimension	Requirement
Inside Opening	Outside dimensions of casting + 1 in. (25 mm)
Thickness at inside edge	Height of casting $\pm$ 1/4 in. (6 mm)
Thickness at outside edge	1/4 in. (6 mm) max.
Width, measured from inside opening to outside edge	8 1/2 in. (215 mm) min

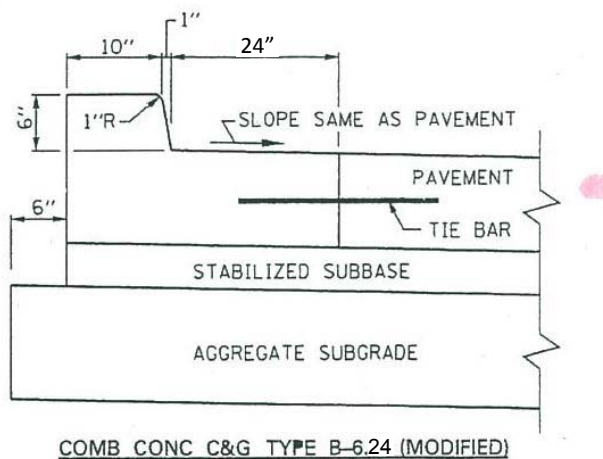
Placement shall be according to the manufacturer's specifications.

Temporary ramps for castings shall remain in place until surfacing operations are undertaken within the immediate area of the structure. Prior to placing the surface course, the temporary ramp shall be removed. Excess material shall be disposed of according to Article 202.03."

**COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24 (MODIFIED)**

Description: This work shall consist of the construction of combination concrete curb and gutter of the type shown and as modified per the details shown on the plans. The work shall conform to the applicable portions of Section 606 of the Standard Specifications.

Measurement and Payment: This work will be measured and paid for at the contract unit price per foot for COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24 (MODIFIED).



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## REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES

This work shall be according to Article 669 of the Standard Specifications and the following:

Qualifications. The term environmental firm shall mean an environmental firm with at least five (5) documented leaking underground storage tank (LUST) cleanups or that is pre-qualified in hazardous waste by the Department. Documentation includes but not limited to verifying remediation and special waste operations for sites contaminated with gasoline, diesel, or waste oil in accordance with all Federal, State, or local regulatory requirements and shall be provided to the Engineer for approval. The environmental firm selected shall not be a former or current consultant or have any ties with any of the properties contained within and/or adjacent to this construction project.

General. This Special Provision will likely require the Contractor to subcontract for the execution of certain activities.

All contaminated materials shall be managed as either “uncontaminated soil” or non-special waste. This work shall include monitoring and potential sampling, analytical testing, and management of a material contaminated by regulated substances. The Environmental Firm shall continuously monitor all soil excavation for worker protection and soil contamination. **Phase I Preliminary Engineering information is available through the District’s Environmental Studies Unit.** Soil samples or analysis without the approval of the Engineer will be at no additional cost to the Department. The lateral distance is measured from centerline and the farthest distance is the offset distance or construction limit whichever is less.

The Contractor shall manage any excavated soils and sediment within the following areas:

### Site 1888V-65 (Vacant Land)

- Station 106+80 to Station 114+70 (CL US Route 45), 0 to 90 feet LT (Vacant Land, PESA Site 1888V-65, 38000 block of US Route 45, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.

### Site -1888V-63 (McDonald Woods Forest Preserve)

- Station 124+10 to Station 129+50 (CL Realigned US Route 45), 0 to 150 feet RT, and 0 to 100 feet LT (McDonald Woods Forest Preserve, PESA Site 1888V-63, 19600 block of W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 287+40 to Station 290+45 (CL Grass Lake Road), 0 to 50 feet RT (McDonald Woods Forest Preserve, PESA Site 1888V-63, 19600 block of W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 290+45 to Station 292+75 (CL Grass Lake Road), 0 to 70 feet RT (McDonald Woods Forest Preserve, PESA Site 1888V-63, 19600 block of W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.

Site -1888V-62 (Residence)

- Station 121+50 to Station 122+70 (CL US Route 45), 0 to 20 feet RT, and 0 to 40 feet LT (Residence, PESA Site 1888V-62, 38350 US 45, Lindenhurst). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 122+70 to Station 123+90 (CL US Route 45), 0 to 20 feet RT, and 0 to 40 feet LT (Residence, PESA Site 1888V-62, 38350 US 45, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.

Site -1888V-60 (Agricultural land)

- Station 106+00 to Station 113+45 (CL US Route 45), 0 to 90 feet RT (Agricultural Land, PESA Site 1888V-60, 38500 block of US 45, Old Mill Creek). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Lead, and Manganese.
- Station 116+10 to Station 119+00 (CL US Route 45), 0 to 50 feet RT, and 0 to 70 feet LT (Agricultural Land, PESA Site 1888V-60, 38500 block of US 45, Old Mill Creek). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.

Site -1888V-54 (IDOT ROW)

- Station 318+50 to Station 319+50 (CL Realigned Grass Lake Road), 0 to 70 feet RT, and 0 to 90 feet LT (IDOT ROW, PESA Site 1888V-54, 35000 block of US 45, Old Mill Creek and Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.

Site -1888V-53 (Residences)

- Station 803+25 to Station 804+60 (CL Haven Lane), 0 to 70 feet RT, and 0 to 70 feet LT (Residences, PESA Site 1888V-53, 423 Preston Circle, 3036-3190 Haven Lane, and 38650 US 45, Lindenhurst). This material meets the criteria of Article 669.09(a)(3) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Arsenic, and Manganese.

Site -1888V-52 (Vacant Land)

- Station 141+40 to Station 147+80 (CL Realigned US Route 45), 0 to 80 feet RT, and 0 to 120 feet LT (Vacant Land, PESA Site 1888V-52, 19000 block of W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 308+40 to Station 309+00 (CL Realigned Grass Lake Road), 0 to 70 feet RT, and 0 to 50 feet LT (Vacant Land, PESA Site 1888V-52, 19000 block of W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 310+40 to Station 311+80 (CL Realigned Grass Lake Road), 0 to 90 feet RT, and 0 to 110 feet LT (Vacant Land, PESA Site 1888V-52, 19000 block of W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 311+80 to Station 313+80 (CL Realigned Grass Lake Road), 0 to 50 feet RT, and 0 to 70 feet LT (Vacant Land, PESA Site 1888V-52, 19000 block of W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 310+50 to Station 311+80 (CL Grass Lake Road), 0 to 70 feet RT, (Vacant Land, PESA Site 1888V-52, 19000 block of W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese

Site -1888V-39 (Residences)

- Station 309+00 to Station 311+80 (CL Grass Lake Road), 0 to 40 feet LT (Residences, PESA Site 1888V-39, 2988-3037 Liberty Lane, 19176 W. Grass Lake Road, and 38876-39006 US 45, Lindenhurst). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Benzo(a)pyrene, and Manganese.
- Station 148+20 to Station 149+20 (CL Realigned US 45), 0 to 80 feet RT, and 0 to 80 feet LT (Residences, PESA Site 1888V-39, 2988-3037 Liberty Lane, 19176 W. Grass Lake Road, and 38876-39006 US 45, Lindenhurst). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Benzo(a)pyrene, and Manganese.
- Station 151+50 to Station 161+10 (CL Realigned US Route 45), 0 to 110 feet RT, and 0 to 80 feet LT (Residences, PESA Site 1888V-39, 2988-3037 Liberty Lane, 19176 W. Grass Lake Road, and 38876-39006 US 45, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 646+25 to Station 649+40 (CL Independence Boulevard), 0 to 50 feet RT (Residences, PESA Site 1888V-39, 2988-3037 Liberty Lane, 19176 W. Grass Lake Road, and 38876-39006 US 45, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 650+65 to Station 653+50 (CL Independence Boulevard), 0 to 100 feet RT (Residences, PESA Site 1888V-39, 2988-3037 Liberty Lane, 19176 W. Grass Lake Road, and 38876-39006 US 45, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.



Site -1888V-38 (Retention Pond)

- Station 307+00 to Station 308+75 (CL Grass Lake Road), 0 to 40 feet RT, and 0 to 50 feet LT (Retention Pond, PESA Site 1888V-38, 2800 block of W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 303+20 to Station 307+00 (CL Realigned Grass Lake Road), 0 to 50 feet LT (Retention Pond, PESA Site 1888V-38, 2800 block of W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 304+25 to Station 307+00 (CL Realigned Grass Lake Road), 0 to 40 feet RT (Retention Pond, PESA Site 1888V-38, 2800 block of W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.

Site -1888V-49 (Milburn Tree Farm)

- Station 292+75 to Station 295+40 (CL Grass Lake Road), 0 to 75 feet RT (Milburn Tree Farm, PESA Site 1888V-49, 19381 W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 295+40 to Station 296+30 (CL Grass Lake Road), 0 to 75 feet RT (Milburn Tree Farm, PESA Site 1888V-49, 19381 W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(3) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Benzo(a)pyrene.
- Station 296+30 to Station 297+35 (CL Grass Lake Road), 0 to 60 feet RT (Milburn Tree Farm, PESA Site 1888V-49, 19381 W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 297+35 to Station 298+25 (CL Grass Lake Road), 0 to 70 feet RT (Milburn Tree Farm, PESA Site 1888V-49, 19381 W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 298+25 to Station 299+15 (CL Grass Lake Road), 0 to 70 feet RT (Milburn Tree Farm, PESA Site 1888V-49, 19381 W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(3) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Benzo(a)pyrene, and Manganese.
- Station 299+15 to Station 300+45 (CL Grass Lake Road), 0 to 70 feet RT (Milburn Tree Farm, PESA Site 1888V-49, 19381 W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Lead, and Manganese.

Site -1888V-50 (Residences)

- Station 300+45 to Station 302+35 (CL Realigned Grass Lake Road), 0 to 65 feet RT, and 0 to 25 feet LT (Residences, PESA Site 1888V-50, 19265-19323 W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 302+35 to Station 303+75 (CL Realigned Grass Lake Road), 0 to 65 feet RT, and 0 to 35 feet LT (Residences, PESA Site 1888V-50, 19265-19323 W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 303+75 to Station 305+20 (CL Realigned Grass Lake Road), 0 to 70 feet RT, and 0 to 55 feet LT (Residences, PESA Site 1888V-50, 19265-19323 W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.

Site -1888B-3 (Vacant Land)

- Station 287+40 to Station 292+30 (CL Grass Lake Road), 0 to 40 feet LT (Residences, PESA Site 1888B-3, 19000 block of W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.

Site -1888B-4 (Residence)

- Station 292+30 to Station 294+50 (CL Grass Lake Road), 0 to 55 feet LT (Residences, PESA Site 1888B-4, 2840 W. Grass Lake Road, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.

Site -1888V-37 (Residences)

- Station 294+50 to Station 301+00 (CL Grass Lake Road), 0 to 55 feet LT (Residences, PESA Site 1888V-37, 2840 W. Grass Lake Road and 2861-2917 Harrisburg Court, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 301+00 to Station 303+20 (CL Grass Lake Road), 0 to 75 feet LT (Residences, PESA Site 1888V-37, 2840 W. Grass Lake Road and 2861-2917 Harrisburg Court, Lindenhurst). This material meets the criteria of Article 669.09(a)(3) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Benzo(a)pyrene, and Manganese.

Site -1888V-35 (Residences)

- Station 650+65 to Station 653+50 (CL Independence Boulevard), 0 to 100 feet LT (Residences, PESA Site 1888V-35, 39045-39060 US 45, Lindenhurst and Old Mill Creek). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 161+10 to Station 165+90 (CL Independence Boulevard), 0 to 75 feet RT, and 0 to 100 feet LT (Residences, PESA Site 1888V-35, 39045-39060 US 45, Lindenhurst and Old Mill Creek). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.

Site -1888V-33 (Agricultural Land)

- Station 646+25 to Station 648+70 (CL Independence Boulevard), 0 to 50 feet LT (Agricultural Land, PESA Site 1888V-33, 39000 block of US 45, Lindenhurst and Old Mill Creek). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 165+55 to Station 169+90 (CL US Route 45), 0 to 30 feet RT, and 0 to 150 feet LT (Agricultural Land, PESA Site 1888V-33, 39000 block of US 45, Lindenhurst and Old Mill Creek). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 169+90 to Station 170+70 (CL US Route 45), 0 to 90 feet LT (Agricultural Land, PESA Site 1888V-33, 39000 block of US 45, Lindenhurst and Old Mill Creek). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.
- Station 170+70 to Station 174+60 (CL US Route 45), 0 to 70 feet RT (Agricultural Land, PESA Site 1888V-33, 39000 block of US 45, Lindenhurst and Old Mill Creek). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.

Site -1888V-32 (Residences)

- Station 171+70 to Station 177+50 (CL Realigned US Route 45), 0 to 150 feet LT (Residences, PESA Site 1888V-32, 39202A and 39202B US 45, Lindenhurst). This material meets the criteria of Article 669.09(a)(2) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Manganese.

Site -1888V-31 (Vacant Land)

- Station 174+60 to Station 177+50 (CL Realigned US Route 45), 0 to 60 feet RT (Vacant Land, PESA Site 1888V-31, 39000 block of US 45, Old Mill Creek). This material meets the criteria of Article 669.09(a)(1) and shall be managed in accordance to Article 669.09. Contaminants of concern sampling parameters: Lead, and Manganese.

**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).

**KEEPING ARTERIAL ROADWAYS OPEN TO TRAFFIC (LANE CLOSURES ONLY)**

Effective: January 22, 2003

Revised: February 20, 2015

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 Details.

Arterial lane closures shall be in accordance with the Standard Specifications, Highway Standards, District Details, 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. This advance notification is calculated based on a Monday through Friday workweek and shall not include weekends or state holidays.

Arterial lane closures not shown in the staging plans will not be permitted during **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**.

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 in accordance with Articles 701.08 and 701.11 of the Standard Specifications.

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 to the Department for the amount of:

One lane or ramp blocked = \$1,000

Two lanes blocked = \$2,500

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.

## **OPTIMIZE TRAFFIC SIGNAL SYSTEM**

Effective: May 22, 2002  
800.02TS

Revised: July 1, 2015

### Description.

This work shall consist of optimizing a closed loop traffic signal system.

OPTIMIZE TRAFFIC SIGNAL SYSTEM applies when a new or existing closed loop traffic signal system is to be optimized and a formal Signal Coordination and Timing (SCAT) Report is to be prepared. The purpose of this work is to improve system performance by optimizing traffic signal timings, developing a time of day program and a traffic responsive program.

After the signal improvements are completed, the signal system shall be optimized as specified by an approved Consultant who has previous experience in optimizing Closed Loop Traffic Signal Systems for District One of the Illinois Department of Transportation. The Contractor shall contact the Traffic Signal Engineer at (847) 705-4424 for a listing of approved Consultants. Traffic signal system optimization work, including fine-tuning adjustments of the optimized system, shall follow the requirements stated in the most recent IDOT District 1 SCAT Guidelines, except as noted herein.

A listing of existing signal equipment, interconnect information, phasing data, and timing patterns may be obtained from the Department, if available and as appropriate. The existing SCAT Report is available for review at the District One office and if the Consultant provides blank a CD, copies of computer simulation files for the existing optimized system and a timing database that includes intersection displays will be made for the Consultant. The Consultant shall confer with the Traffic Signal Engineer prior to optimizing the system to determine if any extraordinary conditions exist that would affect traffic flows in the vicinity of the system, in which case, the Consultant may be instructed to wait until the conditions return to normal or to follow specific instructions regarding the optimization.

(a) The following tasks are associated with OPTIMIZE TRAFFIC SIGNAL SYSTEM.

1. Appropriate signal timings and offsets shall be developed for each intersection and appropriate cycle lengths shall be developed for the closed loop signal system.
2. Traffic counts shall be taken at all intersections after the permanent traffic signals are approved for operation by the Area Traffic Signal Operations Engineer. Manual turning movement counts shall be conducted from 6:30 a.m. to 9:30 a.m., 11:00 a.m. to 1:00 p.m., and 3:30 p.m. to 6:30 p.m. on a typical weekday from midday Monday to midday Friday and on a Saturday or Sunday, as directed by the Engineer, to account for special traffic generators such as shopping centers, educational institutes and special event facilities. The turning movement counts shall identify cars, and single-unit and multi-unit heavy vehicles.
3. As necessary, the intersections shall be re-addressed and all system detectors reassigned in the master controller according to the current standard of District One.

4. A traffic responsive program shall be developed, which considers both volume and occupancy. A time-of-day program shall be developed for used as a back-up system.
  5. Proposed signal timing plan for the new or modified intersection shall be forwarded to IDOT for review prior to implementation.
  6. Consultant shall conduct on-site implementation of the timings and make fine-tuning adjustments to the timings in the field to alleviate observed adverse operating conditions and to enhance operations. The consultant shall respond to IDOT comments and public complaints for a minimum period of 90 days from date of timing plan implementation.
  7. Speed and delay studies shall be conducted during each of the count periods along the system corridor in the field before and after implementation of the proposed timing plans for comparative evaluations. These studies should utilize specialized electronic timing and measuring devices.
- (b) The following deliverables shall be provided for OPTIMIZE TRAFFIC SIGNAL SYSTEM.
1. Consultant shall furnish to IDOT one (1) copy of a SCAT Report for the optimized system. The SCAT Report shall include the following elements:

**MAST ARM SIGN PANELS**

Effective: May 22, 2002  
720.01TS

Revised: July 1, 2015

Add the following to Article 720.02 of the Standard Specifications:

Sign stiffening channel systems shall be aluminum and meet the requirements of ASTM 6261-T5. Sign mounting banding, buckles and buckle straps shall be manufactured from AISI 201 stainless steel.



## **SERVICE INSTALLATION (TRAFFIC SIGNALS)**

Effective: May 22, 2002  
805.01TS

Revised: January 27, 2016

Revise Section 805 of the Standard Specifications to read:

### Description.

This work shall consist of all materials and labor required to install, modify, or extend the electric service installation. All installations shall meet the requirements of the "District One Standard Traffic Signal Design Details".

### General.

The electric service installation shall be the electric service disconnecting means and it shall be identified as suitable for use as service equipment.

The electric utility contact information is noted on the plans and represents the current information at the time of contract preparation. The Contractor must request in writing for service and/or service modification within 10 days of contract award and must follow-up with the electric utility to assure all necessary documents and payment are received by the utility. The Contractor shall forward copies of all correspondence between the contractor and utility company to the Engineer and Area Traffic Signal Maintenance and Operations Engineer. The service agreement and sketch shall be submitted for signature to the IDOT's Traffic Operations Programs Engineer.

### Materials.

- a. General. The completed control panel shall be constructed in accordance with UL Std. 508A, Industrial Control Panel, and carry the UL label. Wire terminations shall be UL listed.
- b. Enclosures.
  1. Pole Mounted Cabinet. The cabinet shall be UL 50, NEMA Type 4X, unfinished single door design, fabricated from minimum 0.080-inch (2.03 mm) thick Type 5052 H-32 aluminum. Seams shall be continuous welded and ground smooth. Stainless steel screws and clamps shall secure the cover and assure a watertight seal. The cover shall be removable by pulling the continuous stainless steel hinge pin. The cabinet shall have an oil-resistant gasket and a lock kit shall be provided with an internal O-ring in the locking mechanism assuring a watertight and dust-tight seal. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 14-inches (350 mm) high, 9-inches (225 mm) wide and 8-inches (200 mm) in depth is required. The cabinet shall be channel mounted to a wooden utility pole using assemblies recommended by the vendor.

2. Ground Mounted Cabinet. The cabinet shall be UL 50, NEMA Type 3R unfinished single door design with back panel. The cabinet shall be fabricated from Type 5052 H-32 aluminum with the frame and door 0.125-inch (3.175 mm) thick, the top 0.250-inch (6.350 mm) thick and the bottom 0.500-inch (12.70 mm) thick. Seams shall be continuous welded and ground smooth. The door and door opening shall be double flanged. The door shall be approximately 80% of the front surface, with a full length tamperproof stainless steel .075-inch (1.91 mm) thick hinge bolted to the cabinet with stainless steel carriage bolts and nylocks nuts. The locking mechanism shall be slam-latch type with a keyhole cover. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 40-inches (1000 mm) high, 16-inches (400 mm) wide and 15-inches (375 mm) in depth is required. The cabinet shall be mounted upon a square Type A concrete foundation as indicated on the plans. The foundation is paid for separately.
  3. All enclosures shall include a green external power indicator LED light with circuitry as shown in the Electrical Service-Panel Diagram detail sheet. For pole mounted service enclosures, the power indicator light shall be mounted as shown in the detail. For ground mounted enclosures, the power indicator light shall be mounted on the side of the enclosure most visible from the major roadway.
- c. Electric Utility Meter Housing and Riser. The electric meter housing and meter socket shall be supplied and installed by the contractor. Electric utility required risers, weather/service head and any other materials necessary for connection shall also be included in the pay item. Materials shall be in accordance with the electric utility's requirements. For ground-mounted service, the electric utility meter housing shall be mounted to the enclosure. The meter shall be supplied by the utility company. Metered service shall not be used unless specified in the plans.
  - d. Surge Protector. Overvoltage protection, with LED indicator, shall be provided for the 120 volt load circuit by the means MOV and thermal fusing technology. The response time shall be <5n seconds and operate within a range of -40C to +85C. The surge protector shall be UL 1449 Listed.
  - e. Circuit Breakers. Circuit breakers shall be standard UL listed molded case, thermal-magnetic bolt-on type circuit breakers with trip free indicating handles. 120 volt circuit breakers shall have an interrupting rating of not less than 65,000 rms symmetrical amperes. Unless otherwise indicated, the main disconnect circuit breaker for the traffic signal controller shall be rated 60 amperes, 120 V and the auxiliary circuit breakers shall be rated 10 amperes, 120 V.
  - f. Fuses, Fuseholders and Power Indicating Light. Fuses shall be small-dimensional cylindrical fuses of the dual element time-delay type. The fuses shall be rated for 600 V AC and shall have a UL listed interrupting rating of not less than 10,000 rms symmetrical amperes at rated voltage. The power indicating light shall be LED type with a green colored lens and shall be energized when electric utility power is present.

- g. Ground and Neutral Bus Bars. A single copper ground and neutral bus bar, mounted on the equipment panel shall be provided. Ground and neutral conductors shall be separated on the bus bar. Compression lugs, plus 2 spare lugs, shall be sized to accommodate the cables with the heads of the connector screws painted green for ground connections and white for neutral connections.
- h. Utility Services Connection. The Contractor shall notify the Utility Company marketing representative a minimum of 30 working days prior to the anticipated date of hook-up. This 30 day advance notification will begin only after the Utility Company marketing representative has received service charge payments from the Contractor. Prior to contacting the Utility Company marketing representative for service connection, the service installation controller cabinet and cable must be installed for inspection by the Utility Company.
- i. Ground Rod. Ground rods shall be copper-clad steel, a minimum of 10 feet (3.0m) in length, and 3/4 inch (20mm) in diameter. Ground rod resistance measurements to ground shall be 25 ohms or less. If necessary additional rods shall be installed to meet resistance requirements at no additional cost to the contract.

#### Installation.

- a. General. The Contractor shall confirm the orientation of the traffic service installation and its door side with the engineer, prior to installation. All conduit entrances into the service installation shall be sealed with a pliable waterproof material.
- b. Pole Mounted. Brackets designed for pole mounting shall be used. All mounting hardware shall be stainless steel. Mounting height shall be as noted on the plans or as directed by the Engineer.
- c. Ground Mounted. The service installation shall be mounted plumb and level on the foundation and fastened to the anchor bolts with hot-dipped galvanized or stainless steel nuts and washers. The space between the bottom of the enclosure and the top of the foundation shall be caulked at the base with silicone.

#### Basis of Payment.

The service installation shall be paid for at the contract unit price each for SERVICE INSTALLATION of the type specified which shall be payment in full for furnishing and installing the service installation complete. The CONCRETE FOUNDATION, TYPE A, which includes the ground rod, shall be paid for separately. SERVICE INSTALLATION, POLE MOUNTED shall include the 3/4 inch (20mm) grounding conduit, ground rod, and pole mount assembly. Any charges by the utility companies shall be approved by the engineer and paid for as an addition to the contract according to Article 109.05 of the Standard Specifications.

## **GROUNDING OF TRAFFIC SIGNAL SYSTEMS**

Effective: May 22, 2002  
806.01TS

Revised: July 1, 2015

Revise Section 806 of the Standard Specifications to read:

### General.

All traffic signal systems, equipment and appurtenances shall be properly grounded in strict conformance with the NEC. This work shall be in accordance with IDOT's District One Traffic Signal Design Details.

The grounding electrode system shall include a ground rod installed with each traffic signal controller concrete foundation and all mast arm and post concrete foundations. An additional ground rod will be required at locations where measured resistance exceeds 25 ohms. Ground rods are included in the applicable concrete foundation or service installation pay item and will not be paid for separately.

Testing shall be according to Article 801.13 (a) (4) and (5).

- (a) The grounded conductor (neutral conductor) shall be white color coded. This conductor shall be bonded to the equipment grounding conductor only at the Electric Service Installation. All power cables shall include one neutral conductor of the same size.
- (b) The equipment grounding conductor shall be green color coded. The following is in addition to Article 801.04 of the Standard Specifications.
  1. Equipment grounding conductors shall be bonded to the grounded conductor (neutral conductor) only at the Electric Service Installation. The equipment grounding conductor is paid for separately and shall be continuous. The Earth shall not be used as the equipment grounding conductor.
  2. Equipment grounding conductors shall be bonded, using a UL Listed grounding connector, to all traffic signal mast arm poles, traffic signal posts, pedestrian posts, pull boxes, handhole frames and covers, conduits, and other metallic enclosures throughout the traffic signal wiring system, except where noted herein. Bonding shall be made with a splice and pigtail connection, using a sized compression type copper sleeve, sealant tape, and heat-shrinkable cap. A UL listed electrical joint compound shall be applied to all conductors' terminations, connector threads and contact points. Conduit grounding bushings shall be installed at all conduit terminations including spare or empty conduits.
  3. All metallic and non-metallic raceways shall have a continuous equipment grounding conductor, except raceways containing only detector loop lead-in circuits, circuits under 50 volts and/or fiber optic cable will not be required to include an equipment grounding conductor.

4. Individual conductor splices in handholes shall be soldered and sealed with heat shrink. When necessary to maintain effective equipment grounding, a full cable heat shrink shall be provided over individual conductor heat shrinks.

(c) The grounding electrode conductor shall be similar to the equipment grounding conductor in color coding (green) and size. The grounding electrode conductor is used to connect the ground rod to the equipment grounding conductor and is bonded to ground rods via exothermic welding, UL listed pressure connectors, and UL listed clamps .

#### **COILABLE NON-METALLIC CONDUIT**

Effective: May 22, 2002  
810.01TS

Revised: July 1, 2015

##### Description.

This work shall consist of furnishing and installing empty coilable non-metallic conduit (CNC).

##### General.

The CNC installation shall be in accordance with Sections 810 and 811 of the Standard Specifications except for the following:

Add the following to Article 810.03 of the Standard Specifications:

CNC meeting the requirements of NEC Article 353 shall be used for detector loop raceways to the handholes.

Add the following to Article 811.03 of the Standard Specifications:

On temporary traffic signal installations with detector loops, CNC meeting the requirements of NEC Article 353 shall be used for detector loop raceways from the saw-cut to 10 feet (3m) up the wood pole, unless otherwise shown on the plans

##### Basis of Payment.

All installations of CNC for loop detection shall be included in the contract and not paid for separately.

## **UNDERGROUND RACEWAYS**

Effective: May 22, 2002  
810.02TS

Revised: July 1, 2015

Revise Article 810.04 of the Standard Specifications to read:

“Installation. All underground conduits shall have a minimum depth of 30-inches (700 mm) below the finished grade.”

Add the following to Article 810.04 of the Standard Specifications:

“All metal conduit installed underground shall be Rigid Steel Conduit unless otherwise indicated on the plans.”

Add the following to Article 810.04 of the Standard Specifications:

“All raceways which extend outside of a structure or duct bank but are not terminated in a cabinet, junction box, pull box, handhole, post, pole, or pedestal shall extend a minimum of 300 mm (12”) or the length shown on the plans beyond the structure or duct bank. The end of this extension shall be capped and sealed with a cap designed for the conduit to be capped.

The ends of rigid metal conduit to be capped shall be threaded, the threads protected with full galvanizing, and capped with a threaded galvanized steel cap.

The ends of rigid nonmetallic conduit and coilable nonmetallic conduit shall be capped with a rigid PVC cap of not less than 3 mm (0.125”) thick. The cap shall be sealed to the conduit using a room-temperature-vulcanizing (RTV) sealant compatible with the material of both the cap and the conduit. A washer or similar metal ring shall be glued to the inside center of the cap with epoxy, and the pull cord shall be tied to this ring.”

## **HANDHOLES**

Effective: January 01, 2002  
814.01TS

Revised: July 1, 2015

### Description.

Add the following to Section 814 of the Standard Specifications:

All conduits shall enter the handhole at a depth of 30 inches (762 mm) except for the conduits for detector loops when the handhole is less than 5 feet (1.52 m) from the detector loop. All conduit ends should be sealed with a waterproof sealant to prevent the entrance of contaminants into the handhole.

Steel cable hooks shall be coated with hot-dipped galvanization in accordance with AASHTO Specification M111. Hooks shall be a minimum of 1/2 inch (13 mm) diameter with two 90 degree bends and extend into the handhole at least 6 inches (152 mm). Hooks shall be placed a minimum of 12 inches (305 mm) below the lid or lower if additional space is required.

Precast round handholes shall not be used unless called out on the plans.

The cover of the handhole frame shall be labeled "Traffic Signals" with legible raised letters.

Revise the third paragraph of Article 814.03 of the Standard Specifications to read:

"Handholes shall be constructed as shown on the plans and shall be cast-in-place, or precast concrete units. Heavy duty handholes shall be either cast-in-place or precast concrete units."

Add the following to Article 814.03 of the Standard Specifications:

"(c) Precast Concrete. Precast concrete handholes shall be fabricated according to Article 1042.17. Where a handhole is contiguous to a sidewalk, preformed joint filler of 1/2 inch (13 mm) thickness shall be placed between the handhole and the sidewalk."

### Cast-In-Place Handholes.

All cast-in-place handholes shall be concrete, with inside dimensions of 21-1/2 inches (546 mm) minimum. Frames and lid openings shall match this dimension.

For grounding purposes the handhole frame shall have provisions for a 7/16 inch (11 mm) diameter stainless steel bolt cast into the frame. The covers shall have a stainless steel threaded stint extended from the eye hook assembly for the purpose of attaching the grounding conductor to the handhole cover.

The minimum wall thickness for heavy duty hand holes shall be 12 inches (305mm).

Precast Round Handholes.

All precast handholes shall be concrete, with inside dimensions of 30 inches (762mm) diameter. Frames and covers shall have a minimum opening of 26 inches (660mm) and no larger than the inside diameter of the handhole.

For grounding purposes the handhole frame shall have provisions for a 7/16 inch (11 mm) diameter stainless steel bolt cast into the frame. For the purpose of attaching the grounding conductor to the handhole cover, the covers shall either have a 7/16 inch (11 mm) diameter stainless steel bolt cast into the cover or a stainless steel threaded stint extended from an eye hook assembly. A hole may be drilled for the bolt if one cannot be cast into the frame or cover. The head of the bolt shall be flush or lower than the top surface of the cover.

The minimum wall thickness for precast heavy duty hand holes shall be 6 inches (152 mm).

Precast round handholes shall be only produced by an approved precast vendor.

Materials.

Add the following to Section 1042 of the Standard Specifications:

“1042.17 Precast Concrete Handholes. Precast concrete handholes shall be according to Articles 1042.03(a)(c)(d)(e).”



**GROUNDING CABLE**

Effective: May 22, 2002  
817.01TS

Revised: July 1, 2015

The cable shall meet the requirements of Section 817 of the "Standard Specifications," except for the following:

Add the following to Article 817.02 (b) of the Standard Specifications:

Unless otherwise noted on the Plans, traffic signal grounding conductor shall be one conductor, #6 gauge copper, with a green color coded XLP jacket.

The traffic signal grounding conductor shall be bonded, using a UL Listed grounding connector to all proposed and existing traffic signal mast arm poles and traffic/pedestrian signal posts, including push button posts. The grounding conductor shall be bonded to all proposed and existing pull boxes, handhole frames and covers and other metallic enclosures throughout the traffic signal wiring system and noted herein and detailed on the plans. The grounding conductor shall be bonded to conduit terminations using rated grounding bushings. Bonding to existing handhole frames and covers shall be paid for separately.

Add the following to Article 817.05 of the Standard Specifications:

Basis of Payment.

Grounding cable shall be measured in place for payment in foot (meter). Payment shall be at the contract unit price for ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C, which price includes all associated labor and material including grounding clamps, splicing, exothermic welds, grounding connectors, conduit grounding bushings, and other hardware.

**MAINTENANCE OF EXISTING TRAFFIC SIGNAL AND FLASHING BEACON  
INSTALLATION**

Effective: May 22, 2002  
850.01TS

Revised: July 1, 2015

General.

1. Full maintenance responsibility shall start as soon as the Contractor begins any physical work on the Contract or any portion thereof. If Contract work is started prior to a traffic signal inspection, maintenance of the traffic signal installation(s) will be transferred to the Contractor without an inspection.
2. The Contractor shall have electricians with IMSA Level II certification on staff to provide signal maintenance. A copy of the certification shall be immediately available upon request of the Engineer.

3. This item shall include maintenance of all traffic signal equipment and other connected and related equipment such as flashing beacons, emergency vehicle pre-emption equipment, master controllers, uninterruptable power supply (UPS and batteries), PTZ cameras, vehicle detection, handholes, lighted signs, telephone service installations, communication cables, conduits to adjacent intersections, and other traffic signal equipment.
4. Regional transit, County and other agencies may also have equipment connected to existing traffic signal or peripheral equipment such as PTZ cameras, switches, transit signal priority (TSP and BRT) servers, radios and other devices that shall be included with traffic signal maintenance at no additional cost to the contract.
5. Maintenance shall not include Automatic Traffic Enforcement equipment, such as Red Light Enforcement cameras, detectors, or peripheral equipment. This equipment is operated and maintained by the local municipality and should be de-activated while on contractor maintenance.
6. The energy charges for the operation of the traffic signal installation shall be paid for by the Contractor.

Maintenance.

1. The Contractor shall check all controllers every two (2) weeks, which will include visually inspecting all timing intervals, relays, detectors, and pre-emption equipment to ensure that they are functioning properly. The Contractor shall check signal system communications and phone lines to assure proper operation. This item includes, as routine maintenance, all portions of emergency vehicle pre-emption equipment. The Contractor shall maintain in stock at all times a sufficient amount of materials and equipment to provide effective temporary and permanent repairs. Prior to the traffic signal maintenance transfer, the contractor shall supply a detailed maintenance schedule that includes dates, locations, names of electricians providing the required checks and inspections along with any other information requested by the Engineer.
2. The Contractor is advised that the existing and/or span wire traffic signal installation must remain in operation during all construction stages, except for the most essential down time. Any shutdown of the traffic signal installation, which exceeds fifteen (15) minutes, must have prior approval of the Engineer. Approval to shut down the traffic signal installation will only be granted during the period extending from 10:00 a.m. to 3:00 p.m. on weekdays. Shutdowns shall not be allowed during inclement weather or holiday periods.

3. The Contractor shall provide immediate corrective action when any part or parts of the system fail to function properly. Two far side heads facing each approach shall be considered the minimum acceptable signal operation pending permanent repairs. When repairs at a signalized intersection require that the controller be disconnected or otherwise removed from normal operation, and power is available, the Contractor shall place the traffic signal installation on flashing operation. The signals shall flash RED for all directions unless a different indication has been specified by the Engineer. The Contractor shall be required to place stop signs (R1-1-36) at each approach of the intersection as a temporary means of regulating traffic. When the signals operate in flash, the Contractor shall furnish and equip all their vehicles assigned to the maintenance of traffic signal installations with a sufficient number of stop signs as specified herein. The Contractor shall maintain a sufficient number of spare stop signs in stock at all times to replace stop signs which may be damaged or stolen.
4. The Contractor shall provide the Engineer with 2 (two) 24 hour telephone numbers for the maintenance of the traffic signal installation and for emergency calls by the Engineer.
5. Traffic signal equipment which is lost or not returned to the Department for any reason shall be replaced with new equipment meeting the requirements of the Standard Specifications and these special provisions.
6. The Contractor shall respond to all emergency calls from the Department or others within one (1) hour after notification and provide immediate corrective action. When equipment has been damaged or becomes faulty beyond repair, the Contractor shall replace it with new and identical equipment. The cost of furnishing and installing the replaced equipment shall be borne by the Contractor at no additional charge to the contract. The Contractor may institute action to recover damages from a responsible third party. If at any time the Contractor fails to perform all work as specified herein to keep the traffic signal installation in proper operating condition or if the Engineer cannot contact the Contractor's designated personnel, the Engineer shall have the State's Electrical Maintenance Contractor perform the maintenance work. The Contractor shall be responsible for all of the State's Electrical Maintenance Contractor's costs and liquidated damages of \$1000 per day per occurrence. The State's Electrical Maintenance Contractor shall bill the Contractor for the total cost of the work. The Contractor shall pay this bill within thirty (30) days of the date of receipt of the invoice or the cost of such work will be deducted from the amount due the Contractor. The Contractor shall allow the Electrical Maintenance Contractor to make reviews of the Existing Traffic Signal Installation that has been transferred to the Contractor for Maintenance.
7. Any proposed activity in the vicinity of a highway-rail grade crossing must adhere to the guidelines set forth in the current edition of the Manual on Uniform Traffic Control Devices (MUTCD) regarding work in temporary traffic control zones in the vicinity of highway-rail grade crossings which states that lane restrictions, flagging, or other operations shall not create conditions where vehicles can be queued across the railroad tracks. If the queuing of vehicles across the tracks cannot be avoided, a uniformed law enforcement officer or flagger shall be provided at the crossing to prevent vehicles from stopping on the tracks, even if automatic warning devices are in place.

8. Equipment included in this item that is damaged or not operating properly from any cause shall be replaced with new equipment meeting current District One traffic signal specifications and provided by the Contractor at no additional cost to the Contract and/or owner of the traffic signal system, all as approved by the Engineer. Final replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection otherwise the traffic signal installation will not be accepted. Cable splices outside the controller cabinet shall not be allowed.
9. Automatic Traffic Enforcement equipment, such as Red Light Enforcement cameras, detectors, and peripheral equipment, damaged or not operating properly from any cause, shall be the responsibility of the municipality or the Automatic Traffic Enforcement Company per Permit agreement.
10. The Contractor shall be responsible to clear snow, ice, dirt, debris or other condition that obstructs visibility of any traffic signal display or access to traffic signal equipment.
11. The Contractor shall maintain the traffic signal in normal operation during short or long term loss of utility or battery back-up power at critical locations designated by the Engineer. Critical locations may include traffic signals interconnected to railroad warning devices, expressway ramps, intersection with an SRA route, critical corridors or other locations identified by the Engineer. Temporary power to the traffic signal must meet applicable NEC and OSHA guidelines and may include portable generators and/or replacement batteries. Temporary power to critical locations shall not be paid for separately but shall be included in the contract.
12. Temporary replacement of damaged or knockdown of a mast arm pole assembly shall require construction of a full or partial span wire signal installation or other method approved by the Engineer to assure signal heads are located overhead and over traveled pavement. Temporary replacement of mast arm mount signals with post mount signals will not be permitted.

Basis of Payment.

This work will be paid for at the contract unit price per each for MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION. Each intersection will be paid for separately. Maintenance of a standalone and or not connected flashing beacon shall be paid for at the contract unit price for MAINTENANCE OF EXISITNG FLASHING BEACON INSTALLATION. Each flashing beacon will be paid for separately.

## **FULL-ACTUATED CONTROLLER AND CABINET**

Effective: January 1, 2002  
857.02TS

Revised: July 1, 2015

### Description.

This work shall consist of furnishing and installing a traffic actuated solid state digital controller in the controller cabinet of the type specified, meeting the requirements of Section 857 of the Standard Specifications, as modified herein, including malfunction management unit, load switches and flasher relays, with all necessary connections for proper operation.

If the intersection is part of an existing system and/or when specified in the plans, this work shall consist of furnishing and installing a(n) " \_\_\_\_\_ " brand traffic actuated solid state controller.

### Materials.

Add the following to Article 857.02 of the Standard Specifications:

For installation as a stand-alone traffic signal, connected to a closed loop system or integrated into an advance traffic management system (ATMS), controllers shall be Econolite ASC/3S-1000 or Eagle/Siemens M52 unless specified otherwise on the plans or elsewhere on these specifications. Only controllers supplied by one of the District One approved closed loop equipment suppliers will be allowed. Unless specified otherwise on the plans or these specifications, the controller shall be of the most recent model and software version supplied by the equipment supplier at the time of the traffic signal TURN-ON. A removable controller data key shall also be provided. Individual load switches shall be provided for each vehicle, pedestrian, and right turn over lap phase. The controller shall prevent phases from being skipped during program changes and after all preemption events and shall inhibit simultaneous display of circular yellow and yellow arrow indications.

For integration into an ATMS such as Centracs, Tactics, or TransSuite, the controller shall have the latest version of NTCIP software installed. For operation prior to integration into an ATMS, the controller shall maintain existing close loop management communications.

Add the following to Article 1074.03 of the Standard Specifications:

- (a) (6) Cabinets shall be designed for NEMA TS2 Type 1 operation. All cabinets shall be pre-wired for a minimum of eight (8) phases of vehicular, four (4) phases of pedestrian and four (4) phases of overlap operation.
- (b) (1) Revise "conflict monitor" to read "Malfunction Management Unit"
- (b) (5) Cabinets – Provide 1/8" (3.2 mm) thick unpainted aluminum alloy 5052-H32. The surface shall be smooth, free of marks and scratches. All external hardware shall be stainless steel.
- (b) (6) Controller Harness – Provide a TS2 Type 2 "A" wired harness in addition to the TS2 Type 1 harness.
- (b) (7) Surge Protection – Shall be a 120VAC Single phase Modular filter Plug-in type, supplied from an approved vendor.
- (b) (8) BIU – shall be secured by mechanical means.
- (b) (9) Transfer Relays – Solid state or mechanical flash relays are acceptable.
- (b) (10) Switch Guards – All switches shall be guarded.
- (b) (11) Heating – One (1) 200 watt, thermostatically-controlled, electric heater.
- (b) (12) Lighting – One (1) LED Panel shall be placed inside the cabinet top panel and one (1) LED Panel shall be placed on each side of the pull-out drawer/shelf assembly located beneath the controller support shelf. The LED Panels shall be controlled by a door switch. The LED Panels shall be provided from an approved vendor.
- (b) (13) The cabinet shall be equipped with a pull-out drawer/shelf assembly. A 1 ½ inch (38mm) deep drawer shall be provided in the cabinet, mounted directly beneath the controller support shelf. The drawer shall have a hinged top cover and shall be capable of accommodating one (1) complete set of cabinet prints and manuals. This drawer shall support 50 lbs. (23 kg) in weight when fully extended. The drawer shall open and close smoothly. Drawer dimensions shall make maximum use of available depth offered by the controller shelf and be a minimum of 18 inches (610mm) wide.
- (b) (14) Plan & Wiring Diagrams – 12" x 15" (305mm x 406mm) moisture sealed container attached to door.
- (b) (15) Detector Racks – Fully wired and labeled for four (4) channels of emergency vehicle pre-emption and sixteen channels (16) of vehicular operation.
- (b) (16) Field Wiring Labels – All field wiring shall be labeled.
- (b) (17) Field Wiring Termination – Approved channel lugs required.
- (b) (18) Power Panel – Provide a nonconductive shield.
- (b) (19) Circuit Breaker – The circuit breaker shall be sized for the proposed load but shall not be rated less than 30 amps.
- (b) (20) Police Door – Provide wiring and termination for plug in manual phase advance switch.

Basis of Payment.

This work will be paid for at the contract unit price each for FULL-ACTUATED CONTROLLER AND TYPE IV CABINET; FULL-ACTUATED CONTROLLER AND TYPE V CABINET; FULL-ACTUATED CONTROLLER AND TYPE SUPER P CABINET; FULL-ACTUATED CONTROLLER AND TYPE SUPER R CABINET; FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL; FULL-ACTUATED CONTROLLER AND TYPE V CABINET, SPECIAL; FULL-ACTUATED CONTROLLER AND TYPE SUPER P CABINET (SPECIAL); FULL-ACTUATED CONTROLLER AND TYPE SUPER R CABINET (SPECIAL)

**MASTER CONTROLLER**

Effective: May 22, 2002  
860.01TS

Revised: July 1, 2015

General.

This work shall consist of furnishing and installing a master controller, meeting the requirements of the current District One Traffic Signal Special Provisions 857.01TS FULL-ACTUATED CONTROLLER (SPECIAL), 857.02TS FULL-ACTUATED CONTROLLER AND CABINET, and 857.02TS RAILROAD, FULL-ACTUATED CONTROLLER AND CABINET, including all necessary connections for proper operation.

If the intersection is part of an existing system and/or when specified in the plans, this work shall consist of furnishing and installing a(n) " \_\_\_\_\_ " brand master controller.

Materials and Installation.

Revise Articles 860.02 and 860.03 of the Standard Specifications to read:

Only controllers supplied by one of the District approved closed loop equipment supplier will be allowed. Only NEMA TS 2 Type 1 Eagle/Siemens and Econolite closed loop systems shall be supplied. The latest model and software version of master controller shall be supplied.

Functional requirements in addition to those in Section 863 of the Standard Specifications include:

The system commands shall consist of, as a minimum, six (6) cycle lengths, five (5) offsets, three (3) splits, and four (4) special functions. The system commands shall also include commands for free or coordinated operation.

Traffic Responsive operation shall consist of the real time acquisition of system detector data, data validation, and the scaling of acquired volumes and occupancies in a deterministic fashion so as to cause the selection and implementation of the most suitable traffic plan.

Upon request by the Engineer, each master shall be delivered with up to three (3) complete sets of the latest edition of registered remote monitoring software with full manufacture's support. Each set shall consist of software on CD, DVD, or other suitable media approved by the Engineer, and a bound set of manuals containing loading and operating instruction. One copy of the software and support data shall be delivered to the Agency in charge of system operation, if other than IDOT. One of these two sets will be provided to the Agency Signal Maintenance Contractor for use in monitoring the system.

The approved manufacturer of equipment shall loan the District one master controller and two intersection controllers of the most recent models and the newest software version to be used for instructional purposes in addition to the equipment to be supplied for the Contract.

The Contractor shall arrange to install a standard voice-grade dial-up telephone line to the master controller. This shall be accomplished through the following process utilizing District One staff. This telephone line may be coupled with a DSL line and a phone filter to isolate the dial-up line. An E911 address is required.

The cabinet shall be provided with an Outdoor Network Interface for termination of the telephone service. It shall be mounted to the inside of the cabinet in a location suitable to provide access for termination of the telephone service at a later date.

Full duplex communication between the master and its local controllers is recommended, but at this time not required. The data rate shall be 1200 baud minimum and shall be capable of speeds to 38,400 or above as technology allows. The controller, when installed in an Ethernet topology, may operate non-serial communications.

The cabinet shall be equipped with a 9600 baud, auto dial/auto answer modem. It shall be a US robotics 33.6K baud rate or equal.

As soon as practical or within one week after the contract has been awarded, the Contractor shall contact Raymond Eaves, Administrative Support Manager in the District One Business Services Section at [Raymond.Eaves@illinois.gov](mailto:Raymond.Eaves@illinois.gov) or (847) 705-4011 to request a phone line installation. A follow-up contact shall include all required information pertaining to the phone installation and should be made as soon as possible or within one week after the initial request has been made. A copy of this contact must be emailed by the Contractor to the Traffic Signal Systems Engineer. The required information to be supplied shall include (but not limited to): An E911 address for the new traffic signal controller (or nearby address); a nearby existing telephone number; what type of telephone service is needed; the name and number of the Contractor's employee for the telephone company to contact regarding site work and questions.

The usual time frame for the activation of the phone line will vary after the Business Services Section has received the Contractor's information and will depend on location and existing available facilities. It is, therefore, imperative that the phone line conduit and pull-string be installed by the Contractor as soon as possible. The contractor shall provide the Administrative Support Manager with an expected installation date

The telephone line shall be installed and activated one month before the system final inspection.

All costs associated with the telephone line installation and activation (not including the Contract specified conduit installation between the point of telephone service and the traffic signal controller cabinet) shall be paid for by the District One Business Services Section (i.e., this will be an IDOT phone number not a Contractor phone number).

Basis of Payment.

This work will be paid for at the contract unit price each for MASTER CONTROLLER or MASTER CONTROLLER (SPECIAL).



**UNINTERRUPTABLE POWER SUPPLY, SPECIAL**

Effective: January 1, 2013  
862.01TS

Revised: May 19, 2016

This work shall be in accordance with section 862 of the Standard Specification except as modified herein

Add the following to Article 862.01 of the Standard Specifications:

The UPS shall have the power capacity to provide normal operation of a signalized intersection that utilizes all LED type signal head optics, for a minimum of 6 (six) hours.

Add the following to Article 862.02 of the Standard Specifications:

Materials shall be according to Article 1074.04 as modified in UNINTERRUPTABLE POWER SUPPLY, SPECIAL.

Add the following to Article 862.03 of the Standard Specifications:

The UPS shall additionally include, but not be limited to, a battery cabinet, where applicable. For Super-P (Type IV) and Super-R (Type V) cabinets, the battery cabinet is integrated to the traffic signal cabinet, and shall be included in the cost for the traffic signal cabinet of the size and type indicated on the plans.

The UPS shall provide reliable emergency power to the traffic signals in the event of a power failure or interruption.

Revise Article 862.04 of the Standard Specifications to read:

Installation.

When a UPS is installed at an existing traffic signal cabinet, the UPS cabinet shall partially rest on the lip of the existing controller cabinet foundation and be secured to the existing controller cabinet by means of at least four (4) stainless steel bolts. The UPS cabinet shall be completely enclosed with the bottom and back constructed of the same material as the cabinet.

When a UPS is installed at a new signal cabinet and foundation, it shall be mounted as shown on the plans.

At locations where UPS is installed and an Emergency Vehicle Priority System is in use, any existing incandescent confirmation beacons shall be replaced with LED lamps in accordance with the District One Emergency Vehicle Priority System specification at no additional cost to the contract. A concrete apron shall be provided and be in accordance with Articles 424 and 202 of the Standard Specifications. The concrete apron shall also, follow the District 1 Standard Traffic Signal Design Detail, Type D for Ground Mounted Controller Cabinet and UPS Battery Cabinet.

This item shall include any required modifications to an existing traffic signal controller as a result of the addition of the UPS including the addition of alarms.

Materials.

Revise Article 1074.04(a)(1) of the Standard Specifications to read:

The UPS shall be line interactive or double conversion and provide voltage regulation and power conditioning when utilizing utility power. The UPS shall be sized appropriately for the intersection(s) normal traffic signal operating load. The UPS must be able to maintain the intersection's normal operating load plus 20 percent (20%) of the intersection's normal operating load. When installed at a railroad-interconnected intersection the UPS must maintain the railroad pre-emption load, plus 20 percent (20%) of the railroad preemption-operating load. The total connected traffic signal load shall not exceed the published ratings for the UPS.

The UPS shall provide a minimum of 6 (six) hours of normal operation run-time for signalized intersections with LED type signal head optics at 77 °F (25 °C) (minimum 1000 W active output capacity, with 86 percent minimum inverter efficiency).

Revise the first paragraph of Article 1074.04(a)(3) of the Standard Specifications to read:

The UPS shall have a minimum of four (4) sets of normally open (NO) and normally closed (NC) single-pole double-throw (SPDT) relay contact closures, available on a panel mounted terminal block or locking circular connectors, rated at a minimum 120 V/1 A, and labeled so as to identify each contact according to the plans.

Revise Article 1074.04(a)(10) of the Standard Specifications to read:

The UPS shall be compatible with the District's approved traffic controller assemblies utilizing NEMA TS 1 or NEMA TS 2 controllers and cabinet components for full time operation.

Revise Article 1074.04(a)(17) of the Standard Specifications to read:

When the intersection is in battery backup mode, the UPS shall bypass all internal cabinet lights, ventilation fans, cabinet heaters, service receptacles, luminaires, any lighted street name signs, any automated enforcement equipment and any other devices directed by the Engineer.

Revise Article 1074.04(b)(2)b of the Standard Specifications to read:

Batteries, inverter/charger and power transfer relay shall be housed in a separate NEMA Type 3R cabinet. The cabinet shall be Aluminum alloy, 5052-H32, 0.125-inch thick and have a natural mill finish.

Revise Article 1074.04(b)(2)c of the Standard Specifications to read:

No more than three batteries shall be mounted on individual shelves for a cabinet housing six batteries and no more than four batteries per shelf for a cabinet housing eight batteries.

Revise Article 1074.04(b)(2)e of the Standard Specifications to read:

The battery cabinet housing shall have the following nominal outside dimensions: a width of 25 in. (785 mm), a depth of 16 in. (440 mm), and a height of 41 to 48 in. (1.1 to 1.3 m). Clearance between shelves shall be a minimum of 10 in. (250 mm).

End of paragraph 1074.04(b)(2)e

The door shall be equipped with a two position doorstop, one a 90° and one at 120°.

Revise Article 1074.04(b)(2)g of the Standard Specifications to read:

The door shall open to the entire cabinet, have a neoprene gasket, an Aluminum continuous piano hinge with stainless steel pin, and a three point locking system. The cabinet shall be provided with a main door lock which shall operate with a traffic industry conventional No. 2 key. Provisions for padlocking the door shall be provided.

Add the following to Article 1074.04(b)(2) of the Standard Specifications:

j. The battery cabinet shall have provisions for an external generator connection.

Add the following to Article 1074.04(c) of the Standard Specifications:

- (8) The UPS shall include a tip or kill switch installed in the battery cabinet, which shall completely disconnect power from the UPS when the switch is manually activated.
- (9) The UPS shall include standard RS-232 and internal Ethernet interface.
- (10) The UPS shall incorporate a flanged electric generator inlet for charging the batteries and operating the UPS. The generator connector shall be male type, twist-lock, rated as 15A, 125VAC with a NEMA L5-15P configuration and weatherproof lift cover plate. Access to the generator inlet shall be from a secured weatherproof lift cover plate or behind a locked battery cabinet police panel.
- (11) The bypass switch shall include an internal power transfer relay that allows removal of the battery back-up unit, while the traffic signal is connected to utility power, without impacting normal traffic signal operation.

Revise Article 1074.04(d)(3) of the Standard Specifications to read:

All batteries supplied in the UPS shall be either gel cell or AGM type, deep cycle, completely sealed, prismatic lead calcium based, silver alloy, valve regulated lead acid (VRLA) requiring no maintenance. All batteries in a UPS installation shall be the same type; mixing of gel cell and AGM types within a UPS installation is not permitted.

Revise Article 1074.04(d)(4) of the Standard Specifications to read:

Batteries shall be certified by the manufacturer to operate over a temperature range of -13 to 160 °F (-25 to + 71 °C) for gel cell batteries and -40 to 140 °F (-40 to + 60 °C) for AGM type batteries.

Add the following to Article 1074.04(d) of the Standard Specifications:

(9) The UPS shall consist of an even number of batteries that are capable of maintaining normal operation of the signalized intersection for a minimum of 6 (six) hours. Calculations shall be provided showing the number of batteries of the type supplied that are needed to satisfy this requirement. A minimum of four batteries shall be provided.

(10) Battery Heater mats shall be provided, when gel cell type batteries are supplied.

Add the following to the Article 1074.04 of the Standard Specifications:

(e) Warranty. The warranty for an uninterruptable power supply (UPS) and batteries (full replacement) shall cover a minimum of 5 years from date the equipment is placed in operation.

(f) Installation. Bypass switch shall completely disconnect the traffic signal cabinet from the utility provider.

(g) The UPS shall be set-up to run the traffic signal continuously, without going to a red flashing condition, when switched to battery power unless otherwise directed by the Engineer. The Contractor shall confirm set-up with the Engineer. The continuous operation mode when switched to battery may require modification to unit connections and these modifications are included in the unit price for this item.

Revise Article 862.05 of the Standard Specifications to read:

Basis of Payment.

This work will be paid for at the contract unit price per each for UNINTERRUPTABLE POWER SUPPLY, SPECIAL or UNINTERRUPTABLE POWER SUPPLY AND CABINET, SPECIAL. Replacement of Emergency Vehicle Priority System confirmation beacons and any required modifications to the traffic signal controller shall be included in the cost of the UNINTERRUPTABLE POWER SUPPLY, SPECIAL or UNINTERRUPTABLE POWER SUPPLY AND CABINET, SPECIAL item. The concrete apron and earth excavation required shall be included in the cost of the UNINTERRUPTABLE POWER SUPPLY AND CABINET, SPECIAL item.

**ELECTRIC CABLE**

Effective: May 22, 2002  
873.01TS

Revised: July 1, 2015

Delete “or stranded, and No. 12 or” from the last sentence of Article 1076.04 (a) of the Standard Specifications.

Add the following to the Article 1076.04(d) of the Standard Specifications:

Service cable may be single or multiple conductor cable.

**EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C**

Effective: January 1, 2013  
873.03TS

Revised: July 1, 2015

This work shall consist of furnishing and installing lead-in cable for light detectors installed at existing and/or proposed traffic signal installations as part of an emergency vehicle priority system. The work includes installation of the lead-in cables in existing and/or new conduit. The electric cable shall be shielded and have (3) stranded conductors, colored blue, orange, and yellow with a stranded tinned copper drain wire. The cable shall meet the requirements of the vendor of the Emergency Vehicle Priority System Equipment.

Basis of Payment.

This work will be paid for at the contract unit price per foot for EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C, which price shall be payment in full for furnishing, installing and making all electrical connections necessary for proper operations.

**TRAFFIC SIGNAL POST**

Effective: May 22, 2002  
875.01TS

Revised: July 01, 2015

Add the following to Article 1077.01 (c) of the Standard Specifications:

Washers for post bases shall be the same size or larger than the nut.

Revise the first sentence of Article 1077.01 (d) of the Standard Specifications to read:

All posts and bases shall be steel and hot dipped galvanized according to AASHTO M 111. If the Department approves painting, powder coating by the manufacturer will be required over the galvanization in accordance with 851.01TS TRAFFIC SIGNAL PAINTING Special Provisions.

**PEDESTRIAN PUSH-BUTTON POST**

Effective: May 22, 2002  
876.01TS

Revised: July 01, 2015

Revise the first sentence of Article 1077.02 (a) of the Standard Specifications to read:

The steel post shall be according to Article 1077.01. Washers for post bases shall be the same size or larger than the nut.

Revise the first sentence of Article 1077.02 (a) of the Standard Specifications to read:

All posts and bases shall be steel and hot dipped galvanized according to AASHTO M 111. If the Department approves painting, powder coating by the manufacturer will be required over the galvanization in accordance with 851.01TS TRAFFIC SIGNAL PAINTING Special Provisions.

**MAST ARM ASSEMBLY AND POLE**

Effective: May 22, 2002  
877.01TS

Revised: July 01, 2015

Revise the second sentence of Article 1077.03 (a)(3) of the Standard Specifications to read:

Traffic signal mast arms shall be one piece construction, unless otherwise approved by the Engineer.

Add the following to Article 1077.03 (a)(3) of the Standard Specifications:

If the Department approves painting, powder coating by the manufacturer will be required over the galvanization in accordance with 851.01TS TRAFFIC SIGNAL PAINTING Special Provisions.

**CONCRETE FOUNDATIONS**

Effective: May 22, 2002  
878.01TS

Revised: July 01, 2015

Add the following to Article 878.03 of the Standard Specifications:

All anchor bolts shall be according to Article 1006.09, with all anchor bolts hot dipped galvanized a minimum of 12 in. (300 mm) at the threaded end.

Foundations used for Combination Mast Arm Poles shall provide an extra 2-1/2 inch (65 mm) raceway.

No foundation is to be poured until the Resident Engineer gives his/her approval as to the depth of the foundation.

Add the following to the first paragraph of Article 878.05 of the Standard Specifications:

The price shall include a concrete apron in front of the cabinet and UPS as shown in the plans or as directed by the engineer.

**LIGHT EMITTING DIODE (LED) PEDESTRIAN SIGNAL HEAD**

Effective: May 22, 2002  
881.01TS

Revised: July 1, 2015

Add the following to the third paragraph of Article 881.03 of the Standard Specifications:

No mixing of different types of pedestrian traffic signals or displays will be permitted.

Add the following to Article 881.03 of the Standard Specifications:

(a) Pedestrian Countdown Signal Heads.

- (1) Pedestrian Countdown Signal Heads shall not be installed at signalized intersections where traffic signals and railroad warning devices are interconnected.
- (2) Pedestrian Countdown Signal Heads shall be 16 inch (406mm) x 18 inch (457mm), for single units with glossy yellow or black polycarbonate housings. All pedestrian head housings shall be the same color (yellow or black) at the intersection. For new signalized intersections and existing signalized intersections where all pedestrian heads are being replaced, the proposed head housings shall be black. Where only selected heads are being replaced, the proposed head housing color (yellow or black) shall match existing head housings. Connecting hardware and mounting brackets shall be polycarbonate (black). A corrosion resistant anti-seize lubricant shall be applied to all metallic mounting bracket joints, and shall be visible to the inspector at the signal turn-on.

- (3) Each pedestrian signal LED module shall be fully MUTCD compliant and shall consist of double overlay message combining full LED symbols of an Upraised Hand and a Walking Person. "Egg Crate" type sun shields are not permitted. Numerals shall measure 9 inches (229mm) in height and easily identified from a distance of 120 feet (36.6m).

Materials.

Add the following to Article 1078.02 of the Standard Specifications:

General.

1. The module shall operate in one mode: Clearance Cycle Countdown Mode Only. The countdown module shall display actual controller programmed clearance cycle and shall start counting when the flashing clearance signal turns on and shall countdown to "0" and turn off when the steady Upraised Hand (symbolizing Don't Walk) signal turns on. Module shall not have user accessible switches or controls for modification of cycle.
2. At power on, the module shall enter a single automatic learning cycle. During the automatic learning cycle, the countdown display shall remain dark.
3. The module shall re-program itself if it detects any increase or decrease of Pedestrian Timing. The counting unit will go blank once a change is detected and then take one complete pedestrian cycle (with no counter during this cycle) to adjust its buffer timer.
4. If the controller preempts during the Walking Person (symbolizing Walk), the countdown will follow the controller's directions and will adjust from Walking Person to flashing Upraised Hand. It will start to count down during the flashing Upraised Hand.
5. If the controller preempts during the flashing Upraised Hand, the countdown will continue to count down without interruption.
6. The next cycle, following the preemption event, shall use the correct, initially programmed values.
7. If the controller output displays Upraised Hand steady condition and the unit has not arrived to zero or if both the Upraised Hand and Walking Person are dark for some reason, the unit suspends any timing and the digits will go dark.
8. The digits will go dark for one pedestrian cycle after loss of power of more than 1.5 seconds.
9. The countdown numerals shall be two (2) "7 segment" digits forming the time display utilizing two rows of LEDs.
10. The LED module shall meet the requirements of the Institute of Transportation Engineers (ITE) LED purchase specification, "Pedestrian Traffic Control Signal Indications - Part 2: LED Pedestrian Traffic Signal Modules," or applicable successor ITE specifications, except as modified herein.



11. The LED modules shall provide constant light output under power. Modules with dimming capabilities shall have the option disabled or set on a non-dimming operation.

12. In the event of a power outage, light output from the LED modules shall cease instantaneously.

13. The LEDs utilized in the modules shall be AllnGaP technology for Portland Orange (Countdown Numerals and Upraised Hand) and GaN technology for Lunar White (Walking Person) indications.

14. The individual LEDs shall be wired such that a catastrophic loss or the failure of one or more LED will not result in the loss of the entire module.

Basis of Payment.

Add the following to the first paragraph of Article 881.04 of the Standard Specifications:

The price shall include furnishing the equipment described above, all mounting hardware and installing them in satisfactory operating condition.

Add the following to Article 881.04 of the Standard Specifications:

If the work consists of retrofitting an existing polycarbonate pedestrian signal head and pedestrian countdown signal head with light emitting diodes (LEDs), it will be paid for as a PEDESTRIAN SIGNAL HEAD, LED, RETROFIT, of the type specified, and of the particular kind of material, when specified. Price shall be payment in full for furnishing the equipment described above including LED modules, all mounting hardware, and installing them in satisfactory operating condition.

**TRAFFIC SIGNAL BACKPLATE**

Effective: May 22, 2002  
882.01TS

Revised: July 1, 2015

Delete 1<sup>st</sup> sentence of Article 1078.03 of the Standard Specifications and add "All backplates shall be louvered, formed ABS plastic".

Add the following to the third paragraph of Article 1078.03 of the Standard Specifications. The retroreflective backplate shall not contain louvers.

Delete second sentence of the fourth paragraph of Article 1078.03 the Standard Specifications.

Add the following to the fourth paragraph of Article 1078.03 of the Standard Specifications:

When retro reflective sheeting is specified, it shall be Type ZZ sheeting according to Article 1091.03 and applied in preferred orientation for the maximum angularity according to the vendor's recommendations. The retroreflective sheeting shall be installed under a controlled environment at the vendor/equipment supplier before shipment to the contractor. The formed plastic backplate shall be prepared and cleaned, following recommendations of the retroreflective sheeting manufacturer.

## **DETECTOR LOOP**

Effective: May 22, 2002  
886.01TS

Revised: January 5, 2016

### Procedure.

A minimum of seven (7) working days prior to the Contractor cutting loops, the Contractor shall mark the proposed loop locations and contact the Area Traffic Signal Maintenance and Operations Engineer (847) 705-4424 to inspect and approve the layout. When preformed detector loops are installed, the Contractor shall have them inspected and approved prior to the pouring of the Portland cement concrete surface, using the same notification process as above.

### Installation.

Revise Article 886.04 of the Standard Specifications to read:

Loop detectors shall be installed according to the requirements of the "District One Standard Traffic Signal Design Details." Saw-cuts (homeruns on preformed detector loops) from the loop to the edge of pavement shall be made perpendicular to the edge of pavement when possible in order to minimize the length of the saw-cut (homerun on preformed detector loops) unless directed otherwise by the Engineer or as shown on the plan.

The detector loop cable insulation shall be labeled with the cable specifications.

Each loop detector lead-in wire shall be labeled in the handhole using a water proof tag, from an approved vendor, secured to each wire with nylon ties.

Resistance to ground shall be a minimum of 100 mega-ohms under any conditions of weather or moisture. Inductance shall be more than 50 and less than 700 microhenries. Quality readings shall be more than 5.

- (a) Type I. All loops installed in new asphalt pavement shall be installed in the binder course and not in the surface course. The edge of pavement, curb and handhole shall be cut with a 1/4 inch (6.3 mm) deep x 4 inches (100 mm) saw cut to mark location of each loop cable.
- (b) Loop sealant shall be two-component thixotropic chemically cured polyurethane from an approved vendor. The sealant shall be installed 1/8 inch (3 mm) below the pavement surface. If installed above the surface the excess shall be removed immediately.
- (c) Preformed. This work shall consist of furnishing and installing a rubberized or cross linked polyethylene heat resistant preformed traffic signal loop in accordance with the Standard Specifications, except for the following:
- (d) Preformed detector loops shall be installed in new pavement constructed of Portland cement concrete using mounting chairs or tied to re-bar or the preformed detector loops may be placed in the sub-base. Loop lead-ins shall be extended to a temporary protective enclosure near the proposed handhole location. The protective enclosure shall provide sufficient protection from other construction activities and may be buried for additional protection.

- (e) Handholes shall be placed next to the shoulder or back of curb when preformed detector loops enter the handhole. CNC, included in this pay item, shall be used to protect the preformed lead-ins from back of curb to the handhole.
- (f) Preformed detector loops shall be factory assembled with ends capped and sealed against moisture and other contaminants. The loop configurations and homerun lengths shall be assembled for the specific application. The loop and homerun shall be constructed using 11/16 inch (17.2 mm) outside diameter (minimum), 3/8 inch (9.5 mm) inside diameter (minimum) Class A oil resistant synthetic cord reinforced hydraulic hose with 250 psi (1,720 kPa) internal pressure rating or a similarly sized XLPE cable jacket. Hose for the loop and homerun assembly shall be one continuous piece. No joints or splices shall be allowed in the hose except where necessary to connect homeruns to the loops. This will provide maximum wire protection and loop system strength. Hose tee connections shall be heavy duty high temperature synthetic rubber. The tee shall be of proper size to attach directly to the hose, minimizing glue joints. The tee shall have the same flexible properties as the hose to insure that the whole assembly can conform to pavement movement and shifting without cracking or breaking. For XLPE jacketed preformed loops, all splice connections shall be soldered, sealed, and tested before being sealed in a high impact glass impregnated plastic splice enclosure. The wire used shall be #16 THWN stranded copper. The number of turns in the loop shall be application specific. Homerun wire pairs shall be twisted a minimum of four turns per foot. No wire splices will be allowed in the preformed loop assembly. The loop and homeruns shall be filled and sealed with a flexible sealant to insure complete moisture blockage and further protect the wire. The preformed loops shall be constructed to allow a minimum of 6.5 feet of extra cable in the handhole.

Method of Measurement.

Add the following to Article 886.05 of the Standard Specifications:

Preformed detector loops will be measured along the detector loop embedded in the pavement, rather than the actual length of the wire. Detector loop measurements shall include the saw cut and the length of the detector loop wire to the edge of pavement. The detector loop wire, including all necessary connections for proper operations, from the edge of pavement to the handhole, shall be included in the price of the detector loop. CNC, trench and backfill, and drilling of pavement or handholes shall be included in detector loop quantities.

Basis of Payment.

This work shall be paid for at the contract unit price per foot (meter) for DETECTOR LOOP, TYPE I or PREFORMED DETECTOR LOOP as specified in the plans, which price shall be payment in full for furnishing and installing the detector loop and all related connections for proper operation.

**DETECTOR LOOP REPLACEMENT AND/OR INSTALLATION (ROADWAY GRINDING,  
RESURFACING, & PATCHING OPERATIONS)**

Effective: January 1, 1985  
886.02TS

Revised: January 5, 2016

The following Traffic Signal Special Provisions and the “District 1 Standard Traffic Signal Design Details” supplement the requirements of the State of Illinois “Standard Specifications for Road and Bridge Construction” Sections 810, 886, 1079 and 1088.

The intent of this Special Provision is to prescribe the materials and construction methods commonly used to replace traffic signal detector loops and replace magnetic signal detectors with detector loops during roadway resurfacing, grinding and patching operations. Loop detector replacement will not require the transfer of traffic signal maintenance from the District Electrical Maintenance Contractor to this contract’s electrical contractor. Replacement of magnetic detector will require wiring revisions inside the control cabinet and therefore the transfer of maintenance will be required. All material furnished shall be new. The locations and the details of all installations shall be as indicated on the Plans or as directed by the Engineer.

The work to be provided under this contract consists of furnishing and installing all traffic signal work as specified on the Plans and as specified herein in a manner acceptable and approved by the Engineer.

Notification of Intent to Work.

Contracts such as pavement grinding or patching which result in the destruction of traffic signal detection require a notification of intent to work and an inspection. A minimum of seven (7) working days prior to the detection removal, the Contractor shall notify the:

- Traffic Signal Maintenance and Operations Engineer at (847)705-4424
- IDOT Electrical Maintenance Contractor at (773) 287-7600

at which time arrangements will be made to adjust the traffic controller timing to compensate for the absence of detection.

Failure to provide proper notification may require the District’s Electrical Maintenance Contractor to be called to investigate complaints of inadequate traffic signal timing. All costs associated with these expenses will be paid for by the Contractor at no additional expense to the Department according to Section 109 of the “Standard Specifications.”

Acceptance of Material.

The Contractor shall provide:

1. All material approval requests shall be submitted a minimum of seven (7) days prior to the delivery of equipment to the job site, or within 30 consecutive calendar days after the contract is awarded, or within 15 consecutive calendar days after the preconstruction meeting, whichever is first.
2. Four (4) copies of a letter listing the vendor's name and model numbers of the proposed equipment shall be supplied. The letter will be reviewed by the Traffic Design Engineer to determine whether the equipment to be used is approved. The letters will be stamped as approved or not approved accordingly and returned to the Contractor.
3. One (1) copy of material catalog cuts.
4. The contract number, permit number or intersection location must be on each sheet of the letter and material catalog cuts as required in items 2 and 3.

Inspection of Construction.

When the road is open to traffic, except as otherwise provided in Section 801 and 850 of the Standard Specifications, the Contractor must request a turn-on and inspection of the completed detector loop installation at each separate location. This request must be made to the Traffic Signal Maintenance and Operations Engineer at (847)705-4424 a minimum of seven (7) working days prior to the time of the requested inspection.

Acceptance of the traffic signal equipment by the Department shall be based upon inspection results at the traffic signal "turn on." If approved, traffic signal acceptance shall be verbal at the "turn on" inspection followed by written correspondence from the Engineer. If this work is not completed in time, the Department reserves the right to have the work completed by others at the Contractor's expense.

All cost of work and materials required to comply with the above requirements shall be included in the pay item bid price, under which the subject materials and signal equipment are paid, and no additional compensation will be allowed. Materials and signal equipment not complying with the above requirements will be subject to removal and disposal at the Contractor's expense.

Restoration of Work Area.

Restoration of the traffic signal work area due to the detector loop installation and/or replacement shall be included in the cost of this item. All roadway surfaces such as shoulders, medians, sidewalks, pavement shall be replaced as shown in the plans or in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded.

Removal, Disposal and Salvage of Existing Traffic Signal Equipment.

The removal, disposal, and salvage of existing traffic signal equipment shall be included in the cost of this item. All material and equipment removed shall become the property of the Contractor and disposed of by the Contractor outside the State's right-of-way. No additional compensation shall be provided to the Contractor for removal, disposal or salvage expense for the work in this contract.

DETECTOR LOOP REPLACEMENT.

This work shall consist of replacing existing detector loops which are destroyed during grinding, resurfacing, or patching operations.

If damage to the detector loop is unavoidable, replacement of the existing detection system will be necessary. This work shall be completed by an approved Electrical Contractor as directed by the Engineer.

Replacement of the loops shall be accomplished in the following manner: The Engineer shall mark the location of the replacement loops. The Traffic Signal Maintenance and Operations Engineer shall be called to approve loop locations prior to the cutting of the pavement. The Contractor may reuse the existing coilable non-metallic conduit (CNC) located between the existing handhole and the pavement if it hasn't been damaged. CNC meeting the requirements of NEC Article 353 shall be used for detector loop raceways to the handholes. All burrs shall be removed from the edges of the existing conduit which could cause damage to the new detector loop during installation. If the existing conduit is damaged beyond repair, if it cannot be located, or if additional conduits are required for each proposed loop; the Contractor shall be required to drill through the existing pavement into the appropriate handhole, and install 1" (25 mm) CNC. This work and the required materials shall not be paid for separately but shall be included in the pay item Detector Loop Replacement. Once suitable CNC raceways is established, the loop may be cut, installed, sealed and spliced to the twisted-shielded lead-in cable in the handhole.

All loops installed in new asphalt pavement shall be installed in the binder course and not in the surface course. The edge of pavement or the curb shall be cut with a 1/4" (6.3 mm) deep x 4" (100 mm) saw-cut to mark location of each loop lead-in.

A minimum of seven (7) working days prior to the Contractor cutting loops, the Contractor shall have the proposed loop locations marked and contact the Traffic Signal Maintenance and Operations Engineer (847)705-4424 to inspect and approve the layout.

Loop detectors shall be installed according to the requirements of the "District 1 Standard Traffic Signal Design Details." Saw-cuts from the loop to the edge of pavement shall be made perpendicular to the edge of pavement when possible in order to minimize the length of the saw-cut unless directed otherwise by the Engineer or as shown on the plan.

The detector loop cable insulation shall be labeled with the cable specifications.

Each loop detector lead-in wire shall be labeled in the handhole using a water proof tag, from an approved vendor, secured to each wire with nylon ties. The lead-in wire, including all necessary connections for proper operation, from the edge of pavement to the handhole, shall be included in the detector loop pay item.

Loop sealant shall be a two-component thixotropic chemically cured polyurethane. The sealant shall be installed 1/8" (3 mm) below the pavement surface. If installed above the surface the excess shall be removed immediately.

Round loop(s) 6 ft (1.8 m) diameter may be substituted for 6 ft (1.8 m) by 6 ft (1.8 m) square loop(s) and shall be paid for as 24 feet (7.2 m) of detector loop.

Resistance to ground shall be a minimum of 100 mega-ohms under any conditions of weather or moisture. Inductance shall be more than 50 and less than 700 microhenries. Quality readings shall be more than 5.

Heat shrink splices shall be used according to the "District 1 Standard Traffic Signal Design Details."

Detector loop replacement shall be measured along the sawed slot in the pavement containing the loop cable up to the edge of pavement, rather than the actual length of the wire in the slot. Drilling handholes, sawing the pavement, furnishing and installing CNC to the appropriate handhole, cable splicing to provide a fully operable detector loop, testing and all trench and backfill shall be included in this item.

Basis of Payment.

Detector Loop Replacement shall be paid for at the contract unit price per foot (meter) of DETECTOR LOOP REPLACEMENT.

MAGNETIC DETECTOR REMOVAL AND DETECTOR LOOP INSTALLATION.

This work shall consist of the removal of existing magnetic detectors, magnetic detector lead-in cable and magnetic detection amplifiers and related control equipment wiring, installation of detector lead-in cable, detector loops, detector amplifiers and related equipment wiring. The detector loop, cable, and amplifier shall be installed according to the applicable portions of the "Standard Specifications" and the applicable portions of the Special Provision for "Detector Loop Replacement." All drilling of handholes, furnishing and installing CNC, cable splicing, trench and backfill, removal of equipment, and removing cable from conduit shall be included in this item.

Basis of Payment.

Magnetic Detector Removal and Detector Loop Installation shall be paid for at the contract unit price per foot (meter) for DETECTOR LOOP, TYPE I, per each for INDUCTIVE LOOP DETECTOR, and foot (meter) for ELECTRIC CABLE IN CONDUIT,

**EMERGENCY VEHICLE PRIORITY SYSTEM**

Effective: May 22, 2002  
887.01TS

Revised: July 1, 2015

Revise Section 887 of the Standard Specifications to read:

It shall be the Contractor's responsibility to contact the municipality or fire district to verify the brand of emergency vehicle pre-emption equipment to be installed prior to the contract bidding. The equipment must be completely compatible with all components of the equipment currently in use by the Agency.

All new installations shall be equipped with Confirmation Beacons as shown on the "District One Standard Traffic Signal Design Details." The Confirmation Beacon shall consist of a 6 watt Par 38 LED flood lamp with a 30 degree light spread, or a 7 watt Par 30 LED flood lamp with a 15 degree or greater spread, maximum 7 watt energy consumption at 120V, and a 2,000 hour warranty for each direction of pre-emption. The lamp shall have an adjustable mount with a weatherproof enclosure for cable splicing. All hardware shall be cast aluminum or stainless steel. Holes drilled into signal poles, mast arms, or posts shall require rubber grommets. In order to maintain uniformity between communities, the confirmation beacons shall indicate when the control equipment receives the pre-emption signal. The pre-emption movement shall be signalized by a flashing indication at the rate specified by Section 4L.01 of the "Manual on Uniform Traffic Control Devices," and other applicable sections of future editions. The stopped pre-empted movements shall be signalized by a continuous indication.

All light operated systems shall include security and transit preemption software and operate at a uniform rate of 14.035 Hz  $\pm$ 0.002, or as otherwise required by the Engineer, and provide compatible operation with other light systems currently being operated in the District.

This item shall include any required modifications to an existing traffic signal controller as a result of the addition of the EMERGENCY VEHICLE PRIORITY SYSTEM.

Basis of Payment.

The work shall be paid for at the contract unit price each for furnishing and installing LIGHT DETECTOR and LIGHT DETECTOR AMPLIFIER. Furnishing and installing the confirmation beacon shall be included in the cost of the Light Detector. Any required modifications to the traffic signal controller shall be included in the cost of the LIGHT DETECTOR AMPLIFIER. The preemption detector amplifier shall be paid for on a basis of (1) one each per intersection controller and shall provide operation for all movements required in the pre-emption phase sequence.



## **PEDESTRIAN PUSH-BUTTON**

Effective: May 22, 2002  
888.01TS

Revised: July 1, 2015

### Description.

Revise Article 888.01 of the Standard Specifications to read:

This work shall consist of furnishing and installing a latching (single call) or non-latching (dual call) pedestrian push-button and a regulatory pedestrian instruction sign according to MUTCD, sign series R10-3e 9" x 15" sign with arrow(s) for a count-down pedestrian signal. The pedestrian station sign size without count-down pedestrian signals shall accommodate a MUTCD sign series R10-3b or R10-3d 9" x 12" sign with arrow(s).

### Installation.

Add the following to Article 888.03 of the Standard Specifications:

A mounting bracket and/or extension shall be used to assure proper orientation when two pedestrian push buttons are required for one post. The price of the bracket and/or extension shall be included in the cost of the pedestrian push button. The contractor is not allowed to install a push-button assembly with the sign below the push-button in order to meet mounting requirements.

### Materials.

Revise Article 1074.02(a) of the Standard Specifications to read:

The pedestrian push-button housing shall be constructed of aluminum alloy according to ASTM B 308 6061-T6 and powder coated yellow, unless otherwise noted on the plans. The housing shall be furnished with suitable mounting hardware.

Revise Article 1074.02(e) of the Standard Specifications to read:

Stations shall be designed to be mounted to a post, mast arm pole or wood pole. The station shall be aluminum and shall accept a 3 inch (75mm) round push-button assembly and a regulatory pedestrian instruction sign according to MUTCD, sign series R10-3e 9" x 15" sign with arrow(s) for a count-down pedestrian signal. The pedestrian station size without count-down pedestrian signals shall accommodate a MUTCD sign series R10-3b or R10-3d 9" x 12" sign with arrow(s).

Add the following to Article 1074.02 of the Standard Specifications:

- (f) Location. Pedestrian push-buttons and stations shall be mounted to a post, mast arm pole or wood pole as shown on the plans and shall be fully ADA accessible from a paved or concrete surface. See the District's Detail sheets for orientation and mounting details.

### Basis of Payment.

Revise Article 888.04 of the Standard Specifications to read:

This work will be paid for at the contract unit price per each for PEDESTRIAN PUSH-BUTTON or PEDESTRIAN PUSH-BUTTON, NON-LATCHING.

## TEMPORARY TRAFFIC SIGNAL INSTALLATION

Effective: May 22, 2002  
890.01TS

Revised: July 1, 2015

Revise Section 890 of the Standard Specifications to read:

### Description.

This work shall consist of furnishing, installing, maintaining, and removing a temporary traffic signal installation as shown on the plans, including but not limited to temporary signal heads, emergency vehicle priority systems, interconnect, vehicle detectors, uninterruptable power supply, and signing. Temporary traffic signal controllers and cabinets interconnected to railroad traffic control devices shall be new. When temporary traffic signals will be operating within a county or local agency Traffic Management System, the equipment must be NTCIP compliant and compatible with the current operating requirements of the Traffic Management System.

### General.

Only an approved controller equipment supplier will be allowed to assemble temporary traffic signal and railroad traffic signal cabinet. Traffic signal inspection and TURN-ON shall be according to 800.01TS TRAFFIC SIGNAL GENERAL REQUIREMENTS special provision.

### Construction Requirements.

#### (a) Controllers.

1. Only controllers supplied by one of the District approved closed loop equipment supplier will be approved for use at temporary signal locations. All controllers used for temporary traffic signals shall be fully actuated NEMA microprocessor based with RS232 data entry ports compatible with existing monitoring software approved by IDOT District 1, installed in NEMA TS2 cabinets with 8 phase back panels, capable of supplying 255 seconds of cycle length and individual phase length settings up to 99 seconds. On projects with one lane open and two way traffic flow, such as bridge deck repairs, the temporary signal controller shall be capable of providing an adjustable all red clearance setting of up to 30 seconds in length. All controllers used for temporary traffic signals shall meet or exceed the requirements of Section 857 of the Standard Specifications with regards to internal time base coordination and preemption. All railroad interconnected temporary controllers and cabinets shall be new and shall satisfy the requirements of Article 857.02 of the Standard Specifications and as modified herein.
2. Only control equipment, including controller cabinet and peripheral equipment, supplied by one of the District approved closed loop equipment suppliers will be approved for use at temporary traffic signal locations. All control equipment for the temporary traffic signal(s) shall be furnished by the Contractor unless otherwise stated in the plans. On projects with multiple temporary traffic signal installations, all controllers shall be the same manufacturer brand and model number with the latest version software installed at the time of the signal TURN-ON.

- (b) Cabinets. All temporary traffic signal cabinets shall have a closed bottom made of aluminum alloy. The bottom shall be sealed along the entire perimeter of the cabinet base to ensure a water, dust and insect-proof seal. The bottom shall provide a minimum of two (2) 4 inch (100 mm) diameter holes to run the electric cables through. The 4 inch (100 mm) diameter holes shall have a bushing installed to protect the electric cables and shall be sealed after the electric cables are installed.
- (c) Grounding. Grounding shall be provided for the temporary traffic signal cabinet meeting or exceeding the applicable portions of the National Electrical Code, Section 806 of the Standard Specifications and shall meet the requirements of the 806.01TS GROUNDING OF TRAFFIC SIGNAL SYSTEMS special provision.
- (d) Traffic Signal Heads. All traffic signal sections shall be 12 inches (300 mm). Pedestrian signal sections shall be 16 inch (406mm) x 18 inch (457mm). Traffic signal sections shall be LED with expandable view, unless otherwise approved by the Engineer. Pedestrian signal heads shall be Light Emitting Diode (LED) Pedestrian Countdown Signal Heads except when a temporary traffic signal is installed at an intersection interconnected with a railroad grade crossing. When a temporary traffic signal is installed at an intersection interconnected with a railroad grade crossing, Light Emitting Diode (LED) Pedestrian Signal Heads shall be furnished. The temporary traffic signal heads shall be placed as indicated on the temporary traffic signal plan or as directed by the Engineer. If no traffic staging is in place or will not be staged on the day of the turn on, the temporary traffic signal shall have the signal head displays, signal head placements and controller phasing match the existing traffic signal or shall be as directed by the engineer. The Contractor shall furnish enough extra cable length to relocate heads to any position on the span wire or at locations illustrated on the plans for construction staging. The temporary traffic signal shall remain in operation during all signal head relocations. Each temporary traffic signal head shall have its own cable from the controller cabinet to the signal head.
- (e) Interconnect.
1. Temporary traffic signal interconnect shall be provided using fiber optic cable or wireless interconnect technology as specified in the plans. The Contractor may request, in writing, to substitute the fiber optic temporary interconnect indicated in the contract documents with a wireless interconnect. The Contractor must provide assurances that the radio device will operate properly at all times and during all construction staging. If approved for use by the Engineer, the Contractor shall submit marked-up traffic signal plans indicating locations of radios and antennas and installation details. If wireless interconnect is used, and in the opinion of the engineer, it is not viable, or if it fails during testing or operations, the Contractor shall be responsible for installing all necessary poles, fiber optic cable, and other infrastructure for providing temporary fiber optic interconnect at no cost to the contract.

2. The existing system interconnect and phone lines are to be maintained as part of the Temporary Traffic Signal Installation specified for on the plan. The interconnect, including any required fiber splices and terminations, shall be installed into the temporary controller cabinet as per the notes or details on the plans. All labor and equipment required to install and maintain the existing interconnect as part of the Temporary Traffic Signal Installation shall be included in the cost of TEMPORARY TRAFFIC SIGNAL INSTALLATION. When shown in the plans, temporary traffic signal interconnect equipment shall be furnished and installed. The temporary traffic signal interconnect shall maintain interconnect communications throughout the entire signal system for the duration of the project. Any temporary signal within an existing closed loop traffic signal system shall be interconnected to that system using similar brand control equipment at no additional cost to the contract.
3. Temporary wireless interconnect. The radio interconnect system shall be compatible with Eagle or Econolite controller closed loop systems. This work shall include all temporary wireless interconnect components, at the adjacent existing traffic signal(s) to provide a completely operational closed loop system. This work shall include all materials, labor and testing to provide the completely operational closed loop system as shown on the plans. The radio interconnect system shall include the following components:
  - a. Rack or Shelf Mounted RS-232 Frequency Hopping Spread Spectrum (FHSS) Radio
  - b. Software for Radio Configuration (Configure Frequency and Hopping Patterns)
  - c. Antennas (Omni Directional or Yagi Directional)
  - d. Antenna Cables, LMR400, Low Loss. Max. 100-ft from controller cabinet to antenna
  - e. Brackets, Mounting Hardware, and Accessories Required for Installation
  - f. RS232 Data Cable for Connection from the radio to the local or master controller
  - g. All other components required for a fully functional radio interconnect system

All controller cabinet modifications and other modifications to existing equipment that are required for the installation of the radio interconnect system components shall be included in the cost of TEMPORARY TRAFFIC SIGNAL INSTALLATION.

The radio interconnect system may operate at 900Mhz (902-928) or 2.4 Ghz depending on the results of a site survey. The telemetry shall have an acceptable rate of transmission errors, time outs, etc. comparable to that of a hardwire system.

The proposed or existing master controller and telemetry module shall be configured for use with the radio interconnect at a minimum rate of 9600 baud.

The radio interconnect system shall include all other components required for a complete and fully functional telemetry system and shall be installed in accordance to the vendors recommendations.

- (f) Emergency Vehicle Pre-Emption. All emergency vehicle preemption equipment (light detectors, light detector amplifiers, confirmation beacons, etc.) as shown on the temporary traffic signal plans shall be provided by the Contractor. It shall be the Contractor's responsibility to contact the municipality or fire district to verify the brand of emergency vehicle preemption equipment to be installed prior to the contract bidding. The equipment must be completely compatible with all components of the equipment currently in use by the Agency. All light operated systems shall operate at a uniform rate of 14.035 hz  $\pm$ 0.002, or as otherwise required by the Engineer, and provide compatible operation with other light systems currently being operated in the District. All labor and material required to install and maintain the Emergency Vehicle Preemption installation shall be included in the item Temporary Traffic Signal Installation.
- (g) Vehicle Detection. All temporary traffic signal installations shall have vehicular detection installed at all approaches of the intersection and as directed by the Engineer. Pedestrian push buttons shall be provided for all pedestrian signal heads/phases as directed by the Engineer. Microwave vehicle sensors or video vehicle detection system shall be approved by IDOT prior to Contractor furnishing and installing. The Contractor shall install, wire, and adjust the alignment of the microwave vehicle sensor or video vehicle detection system in accordance to the manufacturer's recommendations and requirements. The Contractor shall be responsible for adjusting the alignment of the microwave vehicle sensor or video vehicle detection system for all construction staging changes and for maintaining proper alignment throughout the project. An equipment supplier shall be present and assist the contractor in setting up and maintaining the microwave vehicle sensor or video vehicle detection system. An in-cabinet video monitor shall be provided with all video vehicle detection systems and shall be included in the item Temporary Traffic Signal Installation.
- (h) Uninterruptable Power Supply. All temporary traffic signal installations shall have Uninterruptable Power Supply (UPS). The UPS cabinet shall be mounted to the temporary traffic signal cabinet and shall be according to the applicable portions of Section 862 of the Standard Specifications and as modified in 862.01TS UNINTERRUPTABLE POWER SUPPLY, SPECIAL Special Provision.

- (i) Signs. All existing street name and intersection regulatory signs shall be removed from existing poles and relocated to the temporary signal span wire. If new mast arm assembly and pole(s) and posts are specified for the permanent signals, the signs shall be relocated to the new equipment at no extra cost. Any intersection regulatory signs that are required for the temporary traffic signal shall be provided as shown on the plans or as directed by the Engineer. Relocation, removing, bagging and installing the regulatory signs for the various construction stages shall be provided as shown on the plans or as directed by the Engineer. If Illuminated Street Name Signs exist they shall be taken down and stored by the contractor and reflecting street name signs shall be installed on the temporary traffic signal installation.
- (j) Energy Charges. The electrical utility energy charges for the operation of the temporary traffic signal installation shall be paid for by others if the installation replaces an existing signal. Otherwise charges shall be paid for under 109.05 of the Standard Specifications.
- (k) Maintenance. Maintenance shall meet the requirements of the Standard Specifications and 850.01TS MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION Special Provisions. Maintenance of temporary signals and of the existing signals shall be included in the cost of the TEMPORARY TRAFFIC SIGNAL INSTALLATION pay item. When temporary traffic signals are to be installed at locations where existing signals are presently operating, the Contractor shall be fully responsible for the maintenance of the existing signal installation as soon as he begins any physical work on the Contract or any portion thereof. In addition, a minimum of seven (7) days prior to assuming maintenance of the existing traffic signal installation(s) under this Contract, the Contractor shall request that the Resident Engineer contact the Bureau of Traffic Operations (847) 705-4424 for an inspection of the installation(s).
- (l) Temporary Traffic Signals for Bridge Projects. Temporary Traffic Signals for bridge projects shall follow the State Standards, Standard Specifications, Special Provisions and any plans for Bridge Temporary Traffic Signals included in the plans. The installation shall meet the Standard Specifications and all other requirements in this TEMPORARY TRAFFIC SIGNAL INSTALLATION specification. In addition all electric cable shall be aurally suspended, at a minimum height of 18 feet (5.5m) on temporary wood poles (Class 5 or better) of 45 feet (13.7 m) minimum height. The signal heads shall be span wire mounted or bracket mounted to the wood pole or as directed by the Engineer. The Controller cabinet shall be mounted to the wood pole as shown in the plans, or as directed by the Engineer. Microwave vehicle sensors or video vehicle detection system may be used in place of detector loops as approved by the Engineer.

(m) Temporary Portable Traffic Signal for Bridge Projects.

1. Unless otherwise directed by the Engineer, temporary portable traffic signals shall be restricted to use on roadways of less than 8000 ADT that have limited access to electric utility service, shall not be installed on projects where the estimated need exceeds ten (10) weeks, and shall not be in operation during the period of November through March. The Contractor shall replace the temporary portable traffic signals with temporary span wire traffic signals noted herein at no cost to the contract if the bridge project or Engineer requires temporary traffic signals to remain in operation into any part of period of November through March. If, in the opinion of the Engineer, the reliability and safety of the temporary portable traffic signal is not similar to that of a temporary span wire traffic signal installation, the Contractor shall replace the temporary portable traffic signals with temporary span wire traffic signals at no cost to the contract.
2. The controller and LED signal displays shall meet the applicable Standard Specifications and all other requirements in this TEMPORARY TRAFFIC SIGNAL INSTALLATION special provision.
3. Work shall be according to Article 701.18(b) of the Standard Specifications except as noted herein.
4. General.
  - a. The temporary portable bridge traffic signals shall be trailer-mounted units. The trailer-mounted units shall be set up securely and level. Each unit shall be self-contained and consist of two signal heads. The left signal head shall be mounted on a mast arm capable of extending over the travel lane. Each unit shall contain a solar cell system to facilitate battery charging. There shall be a minimum of 12 days backup reserve battery supply and the units shall be capable of operating with a 120 V power supply from a generator or electrical service.
  - b. All signal heads located over the travel lane shall be mounted at a minimum height of 17 feet (5m) from the bottom of the signal back plate to the top of the road surface. All far right signal heads located outside the travel lane shall be mounted at a minimum height of 8 feet (2.5m) from the bottom of the signal back plate to the top of the adjacent travel lane surface.
  - c. The long all red intervals for the traffic signal controller shall be adjustable up to 250 seconds in one-second increments.
  - d. As an alternative to detector loops, temporary portable bridge traffic signals may be equipped with microwave sensors or other approved methods of vehicle detection and traffic actuation.

- e. All portable traffic signal units shall be interconnected using hardwire communication cable. Radio communication equipment may be used only with the approval of the Engineer. If radio communication is used, a site analysis shall be completed to ensure that there is no interference present that would affect the traffic signal operation. The radio equipment shall meet all applicable FCC requirements.
- f. The temporary portable bridge traffic signal system shall meet the physical display and operational requirements of conventional traffic signals as specified in Part IV and other applicable portions of the currently adopted version of the Manual on Uniform Traffic Control Devices (MUTCD) and the Illinois MUTCD. The signal system shall be designed to continuously operate over an ambient temperature range between -30 °F (-34 °C) and 120 °F (48 °C). When not being utilized to inform and direct traffic, portable signals shall be treated as nonoperating equipment according to Article 701.11.
- g. Basis of Payment. This work will be paid for according to Article 701.20(c).

Basis of Payment.

This work shall be paid for at the contract unit price each for TEMPORARY TRAFFIC SIGNAL INSTALLATION, TEMPORARY BRIDGE TRAFFIC SIGNAL INSTALLATION, or TEMPORARY PORTABLE BRIDGE TRAFFIC SIGNAL INSTALLATION, the price of which shall include all costs for the modifications required for traffic staging, changes in signal phasing as required in the Contract plans, microwave vehicle sensors, video vehicle detection system, any maintenance or adjustment to the microwave vehicle sensors/video vehicle detection system, the temporary wireless interconnect system, temporary fiber optic interconnect system, all material required, the installation and complete removal of the temporary traffic signal, and any changes required by the Engineer. Each intersection will be paid for separately.



## **TEMPORARY TRAFFIC SIGNAL TIMING**

Effective: May 22, 2002  
890.02TS

Revised: July 1, 2015

### Description.

This work shall consist of developing and maintaining appropriate traffic signal timings for the specified intersection for the duration of the temporary signalized condition, as well as impact to existing traffic signal timings caused by detours or other temporary conditions.

All timings and adjustments necessary for this work shall be performed by an approved Consultant who has previous experience in optimizing Closed Loop Traffic signal Systems for District One of the Illinois Department of Transportation. The Contractor shall contact the Traffic Signal Engineer at (847) 705-4424 for a listing of approved Consultants.

The following tasks are associated with TEMPORARY TRAFFIC SIGNAL TIMING.

- (a) Consultant shall attend temporary traffic signal inspection (turn-on) and/or detour meeting and conduct on-site implementation of the traffic signal timings.
- (b) Consultant shall be responsible for making fine-tuning adjustments to the timings in the field to alleviate observed adverse operating conditions and to enhance operations.
- (c) Consultant shall provide monthly observation of traffic signal operations in the field.
- (d) Consultant shall provide on-site consultation and adjust timings as necessary for construction stage changes, temporary traffic signal phase changes, and any other conditions affecting timing and phasing, including lane closures, detours, and other construction activities.
- (e) Consultant shall make timing adjustments and prepare comment responses as directed by the Area Traffic Signal Operations Engineer.
- (f) Return original timing plan once construction is complete.

### Basis of Payment.

The work shall be paid for at the contract unit price each for TEMPORARY TRAFFIC SIGNAL TIMING, which price shall be payment in full for performing all work described herein per intersection. When the temporary traffic signal installation is turned on and/or detour implemented, 50 percent of the bid price will be paid. The remaining 50 percent of the bid price will be paid following the removal of the temporary traffic signal installation and/or detour.

**REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT**

Effective: May 22, 2002  
895.02TS

Revised: July 1, 2015

Add the following to Article 895.05 of the Standard Specifications:

The traffic signal equipment which is to be removed and is to become the property of the Contractor shall be disposed of outside the right-of-way at the Contractor's expense.

All equipment to be returned to the State shall be delivered by the Contractor to the State's Traffic Signal Maintenance Contractor's main facility. The Contractor shall contact the State's Electrical Maintenance Contractor to schedule an appointment to deliver the equipment. No equipment will be accepted without a prior appointment. All equipment shall be delivered within 30 days of removing it from the traffic signal installation. The Contractor shall provide one hard copy and one electronic file of a list of equipment that is to remain the property of the State, including model and serial numbers, where applicable. The Contractor shall also provide a copy of the Contract plan or special provision showing the quantities and type of equipment. Controllers and peripheral equipment from the same location shall be boxed together (equipment from different locations may not be mixed) and all boxes and controller cabinets shall be clearly marked or labeled with the location from which they were removed. If equipment is not returned according to these requirements, it will be rejected by the State's Electrical Maintenance Contractor. The Contractor shall be responsible for the condition of the traffic signal equipment from the time Contractor takes maintenance of the signal installation until the acceptance of a receipt drawn by the State's Electrical Maintenance Contractor indicating the items have been returned in good condition.

The Contractor shall safely store and arrange for pick up or delivery of all equipment to be returned to agencies other than the State. The Contractor shall package the equipment and provide all necessary documentation as stated above.

Traffic signal equipment which is lost or not returned to the Department for any reason shall be replaced with new equipment meeting the requirements of these Specifications at no cost to the contract.

## **CONNECTION TO EXISTING SEWER**

Description. This item shall consist of connection of existing sewers to proposed drainage structures with the installation of watertight flexible rubber connectors.

The connector shall conform to ASTM C-443 & C-923 and include a stainless steel band. The connector shall provide a watertight connection with the drainage structure. The use of mortar, brick, or rock shall not be permitted to fill in voids.

This item shall be in accordance with the Standard Specifications.

Basis of Payment. This item shall be paid for at the contract unit price, per each, for CONNECTION TO EXISTING SEWER and shall include all work, equipment, labor and materials to complete the item.

## **VIDEO INSPECTION OF STORM SEWER**

Description. This work shall consist of the inspection and cleaning of existing US 45 storm sewers from the proposed storm sewer connection to existing manhole at Sta 140+24.40, 15.8' LT to the outlet of the storm sewer network which drains into the side of the existing box culvert crossing underneath existing US 45 at Sta 132+46 and as directed by the Engineer. Work consists of furnishing all labor, equipment, and materials necessary to video various sized storm sewers and providing a DVD formatted copy of the video, including an inspection narrative and written (typed) report.

This work shall be completed in accordance with the applicable portions of Section 550 of the Standard Specifications for Road and Bridge Construction, as directed by the Engineer, and as specified herein.

Scope of Work. The Contractor shall furnish the Department a DVD color copy of all inspected storm sewers, at inspection rates of 3 to 5 feet per minute, unless otherwise designated. The color video shall include a narrative stating the location and explanation of deficiencies. The deficiencies to be noted include cracked pipe, collapsed pipe, joint leaks, failed patches, subsidence, or intrusions to the pipe. All suspect areas shall be viewed by the camera in such a way as to make a clear analysis of the system. The quality of said DVD shall be such that all deficiencies are clear and visible. A written (typed) report shall be prepared to list all deficiencies of the various sized storm sewers inspected. The report shall include the location of each deficiency, an explanation of the deficiency found, and a recommendation for repairs.

Equipment. The TV camera required in this contract shall have a lens capable of viewing or rotating 360 degrees. The number of units of equipment on hand shall be adequate to insure the completion of the work. All equipment to be used in the execution of this contract shall be in a safe working condition and shall be subject to approval or disapproval by the Engineer. Equipment that is disapproved shall be repaired or removed from the job as required by the Engineer.

General. The Engineer or designated representative will monitor the video inspection operations to assure compliance with the specifications outlined.

Storm sewers shall be cleaned of any accumulation of silt, debris, or foreign matter of any kind, and shall be free from such accumulations at the time of final inspection. All material removed shall be disposed of in accordance with Article 202.03 of the Standard Specifications.

Measurement. The storm sewer that is to be videoed and cleaned shall be measured in feet, regardless of pipe size, from inside edge to inside edge between inlets, manholes, or catch basins.

Any cleaning necessary to perform the video inspection will not be measured for payment.

Basis of Payment. This work will be paid for at the contract unit price per Foot for VIDEO INSPECTION OF STORM SEWER. Such payment shall be full compensation for all work and materials required to complete the video inspection, furnish a narrated DVD color copy of the inspection, provide a typed report as required, clean the sewers, and dispose of any debris removed.

#### **PROPOSED STORM SEWER CONNECTION TO EXISTING MANHOLE**

Description. This item shall consist of core-drilling existing structures and the installation of watertight flexible rubber connectors. This item shall be used where proposed sewer is to be installed and connected to an existing structure.

All pipe connections to existing structures shall be made by core-drilling the wall of the existing structure and inserting an expandable, flexible rubber connector into the wall of the existing structure.

The connector shall conform to ASTM C-443 & C-923 and include a stainless steel band. The existing structure shall be core-drilled with a mechanical powered rotary core drill. The hole shall be watertight with the connector. The use of mortar, brick, or rock shall not be permitted to fill in voids.

This item shall be in accordance with the Standard Specifications.

Basis of Payment. This item shall be paid for at the contract unit price, per each, for PROPOSED STORM SEWER CONNECTION TO EXISTING MANHOLE and shall include all work, equipment, labor and materials to complete the item.

## **EXISTING FIELD TILE REMOVAL**

**Description.** This work shall consist of the removal and disposal or salvaging of existing field tiles of the various sizes and types, excavation, backfilling (if required) as indicated in locations on the plans or as directed by the Engineer.

This work shall be in accordance with the applicable portions of Section 501 of the Standard Specifications which apply to Pipe Culvert Removal. Trenches resulting from the removal of existing field tile which will be allowed below the final grade shall be backfilled to the applicable requirements of Article 550.07. Any damage made by construction activities to portions of the existing field tile which is to remain shall be repaired with materials matching "in like kind" to the satisfaction of the Engineer at no additional cost to the contract.

With the Engineer's approval, any drain tile deemed not to be in conflict with the proposed improvements can be crushed or broken at 10-foot intervals and may remain in place without removal.

**Method of Measurement.** This work will be measured for payment in place in feet (meters) measured along the length of pipe from end to end.

**Basis of Payment.** This work shall be paid for at the contract unit price per FOOT for EXISTING FIELD TILE REMOVAL regardless of size or type. Backfilling (if required) for the removal of the existing field tile will not be paid for separately but will be considered included in the unit price bid for EXISTING FIELD TILE REMOVAL.

## **STORM SEWER REMOVAL** Effective: September 6, 2002

**Description.** The existing storm sewer marked for removal shall be removed according to Section 551 of the Standard Specifications for Road and Bridge Construction adopted January 1, 2016.

**Method of Measurement.** Storm sewer removal of the various diameter will be measured for payment in feet, measured as removed.

**Basis of Payment.** Storm sewer removal will be paid for at the contract unit price per Foot for STORM SEWER REMOVAL, which includes the trench backfill.

**MANHOLES, TYPE A, 6'-DIAMETER, WITH 2 TYPE 1 FRAME, CLOSED LID, RESTRICTOR PLATE**

Description. This work shall consist of constructing manholes with two frames and closed lids and restrictor plates in accordance with Section 602 of the Standard Specifications, the details in the plans and as directed by the Engineer.

Materials. Materials shall be in accordance with Section 602.02 of the Standard Specifications. Metal materials shall be in accordance with all applicable portion of Section 1006 of the Standard Specifications.

Basis of Payment. This work shall be paid for at the contract unit price each for MANHOLES, TYPE A, 6'-DIAMETER, WITH 2 TYPE 1 FRAME, CLOSED LID, RESTRICTOR PLATE.

**CLEANING DRAINAGE SYSTEM**

Description. This work shall consist of cleaning existing storm sewers at locations shown on the plans or as directed by the Engineer.

The sewers shall be cleaned according to Article 602.15 of the Standard Specifications with a method to be approved by the Engineer.

Method of Measurement. This work shall be measured for payment in place in feet.

Basis of Payment. This work will be paid for at the contract unit price per foot for CLEANING DRAINAGE SYSTEM.

### **THREE SIDED PRECAST CONCRETE STRUCTURE (SPECIAL)**

Effective: December 21, 2016

**General.** This work shall consist of designing, furnishing and installing the three-sided precast concrete structure according to applicable portions of Sections 502, 503, 504, 512, and 540 of the Standard Specifications. The three-sided structure shall be sized to provide the minimum clear span, waterway opening, and design fill specified on the plans. In addition, the out to out length of the structure shall be as specified on the plans.

**Prequalification.** The Department maintains a pre-qualified list of proprietary structural systems permitted for three sided structures. This list can be found on the Department's 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 and their presence on this list shall in no case relieve the Contractor of the site specific design or QC/QA requirements stated herein.

The Contractor shall utilize the services of a pre-qualified design engineering firm to coordinate the development of all construction documents and provide any design engineering services not provided by the supplier of the precast structure. The engineering firm shall be pre-qualified according to the Department, in the category of "Highway Bridges: Typical". Firms involved in any part of the project (plan development or management for the Department) will not be eligible to provide these services. Evidence of pre-qualification shall be included with the design submittal.

**Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Cast-In-Place Concrete	1020
(b) Fine Aggregate (Note 1)	1003.04
(c) Coarse Aggregate (Note 1)	1004.05
(d) Metal Shell Piling	1006.05(a)
(e) Steel Piling	1006.05(b)
(f) Reinforcement Bars	1006.10
(g) Geocomposite Wall Drains	1040.07
(g) Precast Concrete (Note 2)	1042.03

Note 1: Backfill for the structure shall be compacted Granular Backfill except for the areas directly behind drainage openings which shall be Porous Granular Backfill unless a geocomposite wall drain is utilized.

Note 2: All three-sided precast concrete structures, precast headwalls, precast wingwalls and precast footings shall be produced according to ASTM C 1504 and according to the Department's latest Policy Memorandum "Quality Control/ Quality Assurance Program for Precast Concrete Products".

**Design.** The design of a three-sided precast concrete structure including headwalls, wingwalls, foundations, ground improvement if needed, and railing connections to the structure if applicable, shall be according to the Contract Plans and latest edition of the AASHTO LRFD Bridge Design Specifications, referenced on the structure plans, and shall include the effects of the foundation deflection during the sequence of construction anticipated. Railings shall be of the type specified on the Contract Plans and the connections shall at a minimum be designed to meet a TL 3 designation unless noted otherwise on the Contract Plans.

The Contractor shall be responsible for all work necessary to design and construct the foundations, including any stub walls, footings, piling, shafts, over excavation and aggregate backfill, geopiers, scour protection, and water diversion necessary to deal with the site conditions encountered. Their design shall be according to the current Departments policies for foundations found in Section 3.10 of the IDOT Bridge Manual. The top of footing depth shown on the plans is assumed based on the foundation scour protection method shown on the plans. Unless otherwise specified, the contractor/supplier may elect to provide an alternate method of scour protection according to the All Bridge Designer Memorandum 16.1. The actual scour depth(s) shall be calculated based on the foundation and protection method chosen.

Three sided precast concrete structures located within a Seismic Zone greater than 1, as defined in the AASHTO LRFD Bridge Design Specifications Table 3.10.6-1, shall satisfy the following requirements:

- 1) The structure shall be connected to the footing/pedestal 2 ft. (600 mm) from the outermost exterior edge of the structure at all four corners with a galvanized rigid mechanical connection subject to the approval of the Engineer. This connection shall be located on the interior face of the segment to allow for future inspection.
- 2) All top joints of exterior segments within a length of 12 ft. (3.65 m) at each end of the structure, regardless of the fill cover, shall be mechanically connected as previously described. The mechanical connection is subject to the approval of the Engineer.

The system chosen by the Contractor shall provide a hydraulically equivalent waterway opening to that specified on the plans. Evidence of equivalency shall also be provided in writing to the Engineer for review and approval prior to ordering any materials.

**Submittals.** The Contractor shall submit complete design and construction documents to the Department for review and approval prior to starting construction. The submittals shall include all calculations, shop drawings, working drawings, etc. necessary to successfully construct the structure. In addition an initial Structure Load Rating Summary (see form BBS 2795), shall be submitted. All documents shall be prepared and sealed by Illinois Licensed Structural Engineer(s). The calculations and drawings shall be submitted a minimum of 45 days prior to construction. Shop drawings for three sided precast concrete structures shall be submitted according to Article 1042.03(b) and Article 105.04 of the Standard Specifications.



The construction plans shall also include a revised waterway information table with the actual opening provided for all events, and any revisions to the scour table (if necessary) to account for the actual structure installed. The remaining information in the waterway information table shall match the waterway information table shown in the contract plans. Upon completion of the project the Contractor shall provide "As-Built" record drawings in CADD format, for the Departments use.

**Construction.** No construction of the foundations shall be started until written approval of the shop drawings is provided by the Engineer. The Contractor shall be responsible for diverting the water from the construction area as needed using a method meeting the approval of the Engineer. The cost of diverting the water shall be considered as included in the contract unit price bid for the three sided structure being constructed and no additional compensation will be allowed.

The Contractor shall obtain technical assistance from the supplier of the precast units in the form of onsite instruction and monitoring of construction staff to ensure proper installation of all units. In addition, if any issues related to fabrication and/or assembly arise during installation, the Contractor in conjunction with the supplier of the system shall be responsible for any remedial action required to remedy the situation subject to the approval of the Engineer and at no additional cost to the Department.

Unless otherwise specified, structures with a minimum design fill height of 3 ft (900 mm) or less shall be waterproofed with a system as specified elsewhere in the contract.

For structures spanning over water, 3 in. (75mm) diameter drain openings, spaced at a maximum of 8 ft (2.4 m) centers, 2 ft (600 mm) above the flow line shall be provided according to Article 503.11. For structures spanning over traffic, a geocomposite wall drain and pipe underdrain outlet system shall be installed and no drainage openings through the sidewalls will be allowed.

Whenever possible, segments shall be set from the center of the structure outward to minimize growth, caused by variation in the as-cast segment width, to ensure the headwall section and wings can be set where specified. Any joints between segments greater than ½ inch (13 mm) shall be grouted according to Article 504.06(e) prior to waterproofing.

All joints between segments shall be sealed according to Article 540.06. When the minimum fill over the structure, between the edges of the shoulders, is less than or equal to 3 ft. (1 m), the top joints between segments shall also be secured with a previously approved mechanical connection. The mechanical connection shall be used to connect a minimum length of 12 ft.(3.65 m) of exterior segments at each end of the structure. There shall be a minimum of 4 mechanical connections per joint with a maximum spacing of 10 ft. (3 m). All plates, shapes, and hardware shall be galvanized or stainless steel. If the design of the structure also requires grouted shear keys, the keyway shall be cast in the top slab of the segments and grouted according to Article 504.06(e).

The excavation and backfill for three sided precast concrete structures shall be according to Section 502 of the Standard Specifications and any additional backfilling requirements based on the precast supplier's design. All construction inspection and material certification necessary to verify these additional backfilling requirements in the field shall be the responsibility of the supplier. The three-sided precast concrete structure shall be placed according to applicable requirements of Article 542.04(d) of the Standard Specifications. When multi-spans are used a 3 in. (75 mm) minimum space shall be left between adjacent sections. After the precast units are in place and the backfill has been placed to midheight on each exterior side of the sidewalls, the space between adjacent interior legs shall be filled with Class SI concrete. The Class SI concrete shall be according to Section 1020, except the maximum size of the aggregate shall be 3/8 in. (9.5 mm).

**Method of Measurement.** Three sided precast concrete structures will be measured in feet (meters). The overall length shall be measured from out to out of headwalls along the centerline of each span of the structure. Class SI concrete placed between adjacent spans, grouted keyways or mechanical connections between precast units, and mechanical connections between the precast units and the substructure will not be measured for payment. All items necessary to construct the wingwalls, headwalls, foundation scour protection options and foundation shall not be measured for payment separately, but shall be included in this work.

**Basis of Payment.** This work will be paid for at the contract unit price per foot (meter) for THREE SIDED PRECAST CONCRETE STRUCTURES (SPECIAL) of the clear span specified. Rock excavation will be paid for separately according to Article 502.13 of the Standard Specifications.

When foundation scour protection is specified, the cost to design and construct it shall be included in this item. Metal railing shall be measured and paid for according to Section 509 of the Standard Specification.

The cost of waterproofing when specified will not be included in this item but will be paid for separately.

**STORM SEWER ADJACENT TO OR CROSSING WATER MAIN (D-1)**

Effective: February 1, 1996

Revised: January 1, 2007

This work consists of constructing storm sewer adjacent to or crossing a water main, at the locations shown on the plans. The material and installation requirements shall be according to the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", and the applicable portions of Section 550 of the Standard Specifications; which may include concrete collars and encasing pipe with seals if required.

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

Encasing of standard type storm sewer, according to the details for "Water and Sewer Separation Requirements (Vertical Separation)" in the "STANDARD DRAWINGS" Division of the "Standard Specifications for Water and Sewer Main Construction in Illinois", may be used for storm sewers crossing water mains.

Basis of Payment. This work will be paid according to Article 550.10 of the Standard Specifications, except the pay item shall be STORM SEWER (WATER MAIN REQUIREMENTS), of the diameter specified.

**SANITARY SEWER 8"**

Description. This work shall consist of constructing sanitary sewer pipe complete in place in accordance with the Standard Specifications for Water & Sewer Construction in Illinois, latest Edition as shown in the drawings, and as directed by the Engineer.

This work shall also include saw cutting, and removal and disposal of existing pavements; excavation; removal and disposal of waste excavated materials; connection to existing manholes; location, protection, repair or replacement of utilities; trench dewatering; erosion and siltation control methods and devices to provide protection to environment from all pumping operations; temporary pumping of sewage around work area if necessary to complete work; bracing; bedding and covering of pipe; and trench backfilling with excavated materials.

Delivery, Storage and Handling. Protect flexible thermoplastic pipes from direct sunlight.

Pipes and Fittings.

PVC plastic sewer pipe:

1. Comply with ASTM D3034 for Type PSM polyvinyl chloride (PVC) sewer pipe and fittings of minimum wall thickness SDR 26.
2. Joints: Use either the solvent-weld type complying with ASTM D2564 and ASTM D2855, or the elastomeric gasket type complying with ASTM F477 and ASTM D3212.

3. Fittings:  
Sizes 8-inches or less: Molded in one piece with elastomeric joints and minimum socket depths as specified in section 6.2 and 7.3.2 of ASTM D3034.
4. Gaskets for fittings and joints: Minimum cross-sectional area of 0.20 square inches complying with ASTM F477.

Branch fittings:

1. Use either factory fabricated type with attached main line coupling, or solvent welded saddle type attached to the pipe with cement and held in place with stainless steel bands, minimum SDR-26.
2. Acceptable manufacturers:
  - a. Harco
  - b. Or approved equal

Risers:

1. Use SDR 26 solid wall type complying with ASTM D3034 for PVC pipe.

Couplings:

1. Provide flexible rubber couplings with adjustable stainless steel bands complying with ASTM C425 for connecting new pipe to existing sewer pipe and for repairing sewer pipe.
2. Acceptable products: Band-Seal Couplings by Mission Clay Products Corp., or equal.

Pipe Installation:

1. Install sanitary sewer pipe in strict accordance with the latest revision of "Standard Specifications for Water & Sewer Construction in Illinois".
2. Install pipe in accordance with pipe manufacturer's recommendations.
3. Lay pipe by proceeding upgrade with the spigot ends of bell-and-spigot pipe pointing in direction of flow.
4. Lay each pipe accurately to the indicated line and grade, aligning so the sewer has a uniform invert.
5. Continually clear interior of the pipe free from foreign material.
6. Before making pipe joints, clean and dry all surfaces of the pipe to be joined.
7. Use lubricants, primers, and adhesives recommended for the purpose by the pipe manufacturer.
8. Comply with ASTM D2321 for flexible thermoplastic sewer pipe installation.
9. Comply with ASTM C-12 Bedding Class B for rigid pipe installation.

Testing and Inspecting:

- A. Test sewers and service connections for water tightness by the low pressure air testing, or exfiltration, or infiltration method as selected by the Engineer.
- B. Leakage tests:
  - 1. Low pressure air test:
    - a. Prior to testing for leakage, flush and clean the sewers by passing a snug-fitting inflated rubber ball through the sewer by upstream water pressure.
    - b. Seal pipe openings with airtight plugs and braces.
    - c. Whenever the sewer to be tested is submerged under groundwater, insert a pipe probe by boring or jetting into the backfill material adjacent to the center of the sewer to determine the groundwater hydrostatic pressure by forcing air to flow slowly through the probe pipe.
    - d. Add air to the plugged sewer sections under test until internal air pressure reaches 4.0 psig greater than any groundwater hydrostatic pressure.
    - e. Allow at least two minutes for air temperature to stabilize and adding air to maintain the initial test pressure.
    - f. Shut off the air supply after stabilizing the air temperature and record the time in seconds using an approved stopwatch for the internal sewer pressure to drop from 3.5 psig to 2.5 psig greater than any groundwater hydrostatic pressure.
    - g. Air testing techniques shall be in accordance with the latest ASTM standard practice for testing sewer lines by low-pressure air test method for the appropriate pipe material, except that the minimum required time for the one pound per square inch pressure drop described in paragraph (f) shall not be less than that shown in Table 1.
    - h. The required times will be adjusted by the Engineer for main line sewers larger than 24 inches and for lateral pipes connected and tested with the main line sewer.
    - i. If the air test fails to meet these requirements, locate and repair, or remove and replace the faulty sections of sewer in a manner approved by the Engineer, as necessary to meet the allowable limits upon retesting.
    - j. Do not use acrylamide gel sealant to correct leakage.

Table 1

MINIMUM ALLOWABLE TIME (min:sec) FOR PRESSURE DROP FROM 3-1/2 TO 2-1/2 PSIG

Pipe Dia. In.	Minimum Time, min:s	Length for minimum Time, ft	Time for longer Length, s	Specification time for length (L) Shown, min:s							
				100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft
8	7:34	298	1.520 L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24

2. Allowable limits for water infiltration or exfiltration test: Not to exceed 200 gallons per inch of pipe diameter per 24 hours per mile of sewer, including building service connections, if installed under this Work.
3. Individual joint air pressure test:
  - a. Utilize individual joint tests only where large sewer pipes make standard air, infiltration, or exfiltration tests impossible, and only with approval of Engineer.
  - b. Comply with requirements of ASTM C1103-90.
  - c. Test will be conducted on approximately 15 percent of the sewer joints, with locations of sections to be selected by Engineer.
  - d. Utilize commercially available test apparatus utilizing two separate inflatable sealing rings at least 2.50 inches, but not more than 2 feet apart.
  - e. Acceptable maximum air loss is 1 psi in 5 seconds.
  - f. Test pressure is 3.5 psi higher than groundwater pressure, but do not use the individual joint air pressure test if the required test pressure is greater than 6 psi.
  - g. Provide test apparatus that allows remote monitoring of test by Engineer.
  - h. Conduct all tests in the presence of the Engineer.
4. Provide and use measuring devices approved by the Engineer.
5. Provide water, materials, and labor for making required tests.
6. Make tests in the presence of the Engineer, giving the Engineer at least three days advanced notice of being ready for test observation.

C. Deflection test for flexible thermoplastic pipe:

1. Test the deflection in the initial 1,200 feet of installed ABS, PVC, and other flexible thermoplastic pipe and not less than 10 percent of the remainder of the sewer project at random locations selected by the Engineer.
2. Perform the test no sooner than 30 days after backfilling has been completed.
3. Perform the test by pulling a mandrel or rigid ball having a diameter equal to 95 percent of the inside diameter of the pipe through the pipe from manhole to manhole without using mechanical pulling devices.
4. Allowable deflection limits: 5.0 percent of the base inside diameter of the PVC pipe or the average inside diameter of the ABS pipe.
5. Wherever the deflection limitation is exceeded, uncover the pipe, carefully replace compacted embedment and backfill material, and retest for deflection.
6. In the event 10 percent or more of the sewer tested exceeds the allowable deflection limits, test the entire sewer system.

Trench backfill shall be used where the sanitary sewer trench is within 2-feet of existing or proposed sidewalks, driveways, or pavements, and shall be paid for separately.

Method of Measurement. Sanitary sewer will be measured for payment in place in feet. When a sanitary sewer enters a manhole, the measurement will end at the inside wall of the manhole.

Basis of Payment. This work shall be paid for at the Contract Unit Price per lineal foot for SANITARY SEWER, of the size indicated regardless of depth.

### **SANITARY MANHOLES TO BE ADJUSTED**

Description. This work shall consist of adjusting existing sanitary manholes at locations indicated on the plans. This work shall be performed in accordance with Section 602 of the Standard Specifications with the following addition:

A new watertight external chimney seal which fully encompasses the rings and castings shall be installed after the frame has been adjusted to the final elevation. The Contractor shall obtain the Engineer's approval of the chimney seal prior to its installation.

Basis of Payment. This work will be measured and paid for at the contract unit price per each for SANITARY MANHOLES TO BE ADJUSTED which price shall include all labor, equipment, and materials necessary to perform said work.

### **SANITARY MANHOLES TO BE RECONSTRUCTED**

Description. This work shall consist of reconstructing existing sanitary manholes at locations indicated on the plans. This work shall be performed in accordance with Section 602 of the Standard Specifications with the following addition:

A new watertight external chimney seal which fully encompasses the rings and castings shall be installed after the frame has been adjusted to the final elevation. The Contractor shall obtain the Engineer's approval of the chimney seal prior to its installation.

Basis of Payment. This work will be measured and paid for at the contract unit price per each for SANITARY MANHOLES TO BE RECONSTRUCTED which price shall include all labor, equipment, and materials necessary to perform said work.

## **SANITARY MANHOLES**

Description. This work shall consist of furnishing and installing sanitary manholes of the size indicated on the plans with the required frame and grate in accordance with Sections 550 and 602 of the IDOT Standard Specifications for Road & Bridge Construction, and Section 32 of the Standard Specifications for Water & Sewer Construction in Illinois, except as modified herein.

General Requirements. Sanitary manholes shall be constructed using precast reinforced concrete sections in accordance with Article 602.07, except that joints between precast sections and pipe to manhole connections shall include watertight flexible gaskets or rubber gaskets. Preformed flexible gaskets shall conform to the requirements of ASTM C 990. Rubber gaskets shall conform to the requirements of ASTM C 443. All pipe to manhole connections shall be provided with cast-in-place connectors, (such as A-LOK Premium connectors or approved equivalent) and conform to the requirements of ASTM C 923. Dimensions of manholes and precast sections shall conform to the latest revision of Highway Standard 602401.

Trenches resulting from the installation of sanitary manholes shall be backfilled according to the applicable requirements of Article 550.07 and Article 602.12.

Manholes will be pressure tested in conformance with the requirements of ASTM C-1244.

Method of Measurement. Construction of sanitary manholes shall be measured for payment as an each item.

Basis of Payment. This work will be paid for at the contract unit price per each for MANHOLES, SANITARY of the specified size, with the specified frame(s) and grate(s), which price includes all labor, material, and equipment necessary to complete the work specified herein.

Preformed flexible gaskets or rubber gaskets used at the joints between precast sections will also be included in the unit cost of this item.

Trench backfill, if required, with granular materials shall be paid for separately as TRENCH BACKFILL.



**CASING PIPE, OPEN CUT, 24" STEEL**

Description. This work consists of installing steel casing pipe in place by open cut method, including sawcutting, and removal and disposal of existing pavements; excavation; removal and disposal of waste excavated materials; protection, repair or replacement of utilities; trench dewatering, including erosion and sedimentation control methods and devices to provide protection to environment from all pumping operations; installation of casing; installation of pipe within casing; sandfilling of void between casing and carrier pipes; end seals; testing; backfilling with compacted excavated materials; but not including backfilling with granular backfill materials.

This Pay Item does not include the pipe within the casing, which is paid for under separate Pay Items.

Trench backfill shall be used where the casing pipe is within 2-feet of existing or proposed sidewalks, driveways, or pavements, and shall be paid for separately.

Measurement. The work will be measured in lineal feet for the length of the casing pipe.

Basis of Payment. The work will be paid for at the Contract Unit Price of feet for CASING PIPE, OPEN CUT, 24" STEEL.

Trench backfill with granular materials shall be paid for separately as TRENCH BACKFILL.

## **TEMPORARY PAVEMENT**

Effective: March 1, 2003

Revised: April 10, 2008

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 either Portland cement concrete according to Sections 353 and 354 of the Standard Specifications or 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. The contractor shall have the option of constructing either material type if both Portland cement concrete and HMA are shown 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 (square meters).

Basis of Payment. This work will be paid for at the contract unit price per square yard (square meter) for TEMPORARY PAVEMENT and TEMPORARY PAVEMENT (INTERSTATE).

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

## **WATER DISTRIBUTION SYSTEM**

SUMMARY. Provide the water distribution system as shown on the Plans, specified herein, and needed for a complete and proper installation, and in accordance with the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", except as revised herein.

Provide labor, materials, tools, chemicals and equipment necessary to perform the pressure and leakage tests and disinfection.

SUBMITTALS. Furnish two (2) copies of bacteriological test reports.

IRON AND STEEL MATERIALS. All iron and steel materials used on this project shall be domestically manufactured or produced and fabricated in accordance with Article 106.01 of the Standard Specifications.

PIPE AND FITTINGS. Provide ductile iron pipe materials in size 4-inch through 24-inch unless otherwise indicated on the Plans.

1. Pipe: Provide ductile iron pipe complying with ANSI A21.51, special thickness Class 52, with joints complying with ANSI A21.11. Use cement lining complying with ANSI/AWWA, C104/A21.4 standard thickness. Provide restrained joint pipe system, where indicated on the Plans, that utilizes one of the following methods:
  - a. Lock rings welded into place around pipe barrel.
  - b. Bolted rings installed around pipe barrels that fit inside pipe bells.
  - c. Gaskets which include stainless steel locking segments vulcanized into the gasket.
  - d. Mechanical joint retainer gland systems that provide locking segments shaped to pipe barrel that do not create stress points on pipe barrel.
    - (1) Do not use set-point type retainer glands.
  - e. Acceptable products:
    - (1) American Fastite, Flex-ring, Lok-ring, and MJ coupled joint.
    - (2) Clow Tyton Joint – Type A or Type B, and Super-Lock.
    - (3) U.S. Pipe TR-Flex Gripper.
    - (4) Griffin Bolt Lok or Snap Lok.
    - (5) Field Lok or Fast Grip Gasket Systems.
    - (6) Meg-A-Lug System.
      - i. Series 1100 Megalug for MJ to pipe
      - ii. Series 1700 Megalug Harness for push on joint
      - iii. As recommended by manufacturer for connection to existing pipes.

2. Fittings:
  - a. Use ductile iron fittings with mechanical joint complying with ANSI A21.10 or A21.53.
  - b. Use cement lining complying with ANSI A-21.4, standard thickness.
  - c. Bolts and nuts:
    - (1) Use A-304 stainless steel bolts with nuts and washers of series 300 stainless steel per ASTM A194.
  - d. Provide restrained joint type fittings compatible with pipe system utilized, as specified by the pipe manufacturer.
    - (1) Provide restrained type joints for all fittings.
3. Polyethylene sheet: Comply with ANSI/AWWA C105/A 21.5-99:
  - a. Thickness: linear low-density polyethylene film (minimum 8 mils) or high-density cross laminated polyethylene film (minimum 4 mils).
  - b. Markings: The following information will be clearly marked on the sheet at minimum increments of 2-feet along its length(4) Applicable range of nominal pipe diameter size(s).
    - (5) Warning – Corrosion Protection – Repair any damage.
4. Conductivity appurtenances:
  - a. Provide wedges of serrated silicon bronze: or #10-copper cable and tapping devices specifically designed for this purpose.
  - b. Use devices provided by the pipe manufacturer.
  - c. Standard mechanical joints, field lok, or meg-a-lug do not provide conductivity.

VALVES. Provide valves with clockwise closing direction.

1. Valves 4-inch to 24-inch size:
  - a. Design in accordance with AWWA C509 (cast iron body), or AWWA C515 (ductile iron body) bronze fitted, resilient wedge and seat type with non-rising stem and O-ring packing.
  - b. Provide gear operator for valves 14-inch and larger.
2. Provide ANSI Class 125 flange ends or mechanical joint ends for valves installed in vaults as indicated on the Plans.
  - a. Provide restrained type joints for all mechanical joint end valves.
3. Acceptable valve manufacturers:
  - a. Mueller No. A-2360-20;
  - b. Or approved equal.

VALVE VAULTS.

Precast:

1. Provide precast reinforced concrete manhole sections, bottoms, and flat top slabs complying with ASTM C478 unless otherwise indicated on the Plans.
2. Provide eccentric cone section unless otherwise indicated on the Plans.
3. Provide precast reinforced concrete monolithic or separate base.
4. Design flat slab tops for AASHTO HS20-44 wheel loading.

Concrete: Provide 4,000 psi concrete using Type I Portland Cement complying with ASTM C150.

Mortar: Non-shrink grout.

Adjusting Rings: Provide precast concrete adjustment risers. Provide at least one but no more than two adjusting rings to a maximum height adjustment of 12 inches.

Joints for precast sections:

1. Provide joints of either flexible watertight rubber gaskets or preformed bituminous plastic gaskets consisting of a homogeneous blend of refined hydrocarbon resins and plasticizing compound reinforced with inert mineral filler.
  - a. Acceptable preformed gasket products:
    - (1) K.T. Snyder Co., RAM-NEK.
    - (2) Concrete Sealants, Type CS-208.
    - (3) Or approved equal.

Steps.

1. Provide steps with a minimum width of 12 inches and a minimum projection of 5 inches.
2. Use steps consisting of copolymer polypropylene plastic with a continuous one-half inch steel reinforcement as manufactured by M.A. Industries, Inc. cast iron steps, Neenah R-1980-I, or approved equal.

Frames and covers. Provide cast iron frames and covers with heavy duty, indented top with solid self-sealing lids and machined bearing surfaces, stamped with the word "WATER". Frames and covers shall be set:

1. In paved areas: So that the top of the solid cover will be flush with the finished pavement; or
2. In unpaved areas: To drain away from the valve vault.
  - a. With flexible watertight gaskets.
  - b. With grade rings not to exceed 8 inches.
  - c. Acceptable products:
    - (1) Neenah R-1713;
    - (2) East Jordan 1050 EXHD;
    - (3) Or approved equal.

Flexible pipe connectors: Provide flexible rubber gasket collar for connecting pipe to the manhole.

1. Comply with ASTM C-923
2. For pipe 24 inches and smaller, use PSX gasket system by Press-Seal Gasket Corporation, or approved equal.

FIRE HYDRANTS.

1. Comply with AWWA C502.
2. Paint hydrants in red as approved by the Village.
3. Match the hydrants generally installed in the Village's water system.
  - a. Acceptable manufacturers:
    - (1) Clow Medallion F2545.
    - (2) A423 Centurion.
    - (3) Or approved equal.

Materials:

1. Provide compression type with a 5-1/4-inch and minimum size main valve assembly, O-ring seals, two 2-1/2-inch hose nozzles, and a 4-1/2-inch pumper nozzle with National Standard threads, a National Standard operating nut, and an above-ground break flange.
2. Provide a 6-inch auxiliary resilient seat type gate valve with restrained type joints or bituminous coated metal tie rods between the valves and the tee fittings.
3. Provide valve boxes with cover marked with the word "WATER".
  - a. Bituminous coated carbon steel valve extension stems and 2-inch square operating nuts 2 inches below cover.
4. Provide valve box stabilizers on all hydrant auxiliary valves.
  - a. Acceptable manufacturers:
    - (1) Alberico
    - (2) American Flo-Control
    - (3) Or approved equal.**

WATER SERVICES.

1. Provide service saddles, corporation stops, curb stops, service boxes, and water service tubing.
2. Materials:
  - a. Service lines: Type K soft temper seamless copper water tubing complying with ASTM B-88.
  - b. Service saddles:
    - (1) Stainless steel saddle with O-ring and grade 30 rubber grid map; cascade styles CSC1, CSC2, CS22;
    - (2) Or approved equal.
  - c. Corporation stops: A.Y. McDonald No. 4701, Mueller No. H15000, or approved equal.
  - d. Curb stops: A.Y. McDonald No. 6104, Mueller No. H15154, or approved equal.
  - e. Service boxes: Extension type with stationary rods, A.Y. McDonald No. 5610, Mueller No. H10302, or approved equal.

### TAPPING SLEEVES AND VALVES.

#### Tapping sleeves:

1. Use two-piece bolted sleeve ductile iron or stainless steel type with mechanical joints.
2. Provide joint accessories.
3. Measure existing water main outside diameter to determine proper tapping sleeve size
4. Acceptable manufacturers:
  - a. Ductile iron: Clow F-5205, or approved equal.
  - b. Stainless steel: Smith Blair 665.
  - c. Or approved equal.

#### Tapping valves:

1. Use fully ported gate valves complying with AWWA C500.
2. Use mechanical joints type, Clow F-5093, or approved equal.

### RESTRAINED FLANGE ADAPTOR.

1. Provide a ductile iron flange adaptor dual ring system with bolt circles compatible with 125#/Class 150 bolt pattern.
  - a. Provide adaptor with individual actuated gripping wedges that utilize torque limiting screws to insure proper initial set.
  - b. Set screw "only" restraining adaptors are not acceptable.
  - c. Provide system that allows joint deflection of up to 5°.
  - d. Provide a fluoropolymer coating to the wedge and wedge assembly and powder coating to the restraint body.
2. Acceptable Manufacturers:
  - a. Series 2100 Megaflange by Ebaa Iron;
  - b. Or approved equal.

### CONSTRUCTION REQUIREMENTS

#### PIPE INSPECTION, HANDLING, STORAGE, AND INSTALLATION. Install in accordance with pipe manufacturer's recommendations.

##### Ductile iron water mains and appurtenances:

1. Comply with AWWA C-600.
2. Protect pipe and fittings by loose wrapping or tubing with polyethylene sheet.
  - a. Place polyethylene sheet around the entire circumference of the pipe, tie or tape sheet securely to prevent displacement during backfilling.
  - b. Comply with ANSI/AWWA A21.5-99/C105 regarding installation of polyethylene protection.
3. Install conductivity through joints by use of conductivity wedges or copper cable and taps.
  - a. Use two (2) wedges per joint for pipes 12 inches or smaller, and four (4) wedges per joint for pipe sizes larger than 12 inches.
  - b. Use number of copper cable connectors per joint as recommended by the pipe manufacturer.

OPERATION OF APPURTENANCES. Village of Lindenhurst Public Works Department employees only shall operate any existing water distribution appurtenances (i.e. water valves, hydrants, etc.).

WATER DISRUPTIONS. A minimum forty-eight (48) hours advance notice to the Owner's Public Works Department is required for any water disruptions.

DEPTH OF PIPE COVER. Lay water mains and water service lines with a minimum depth of cover of five feet six inches below finished grade ground level unless otherwise indicated on the Plans.

1. Where new mains cross existing mains, install new main below existing main unless otherwise indicated on the Plans.

CONNECTIONS TO EXISTING WATER MAINS.

1. Make connections to existing mains.
2. Use non-pressure connections, except where pressure connections are shown on the Plans or required by conditions at the time of construction.
3. Make one connection at a time except as approved by the Engineer.

PIPE RESTRAINING SYSTEMS.

General:

1. Provide protection from movement of water main piping, plugs, caps, tees, valves, hydrants, and bends of 11-1/4 degrees or greater.
2. Provide concrete thrust blocks at locations of all fittings, valves as necessary, and fire hydrants.

Concrete thrust blocks:

1. Provide precast or cast-in-place concrete thrust blocking with a compressive strength of 3,000 psi in 28 days.
2. Locate thrust blocking between solid ground and the fitting to be anchored.
3. Unless otherwise shown or directed by the Engineer, place the base and thrust bearing sides of thrust blocking directly against undisturbed earth.
4. Sides of thrust blocking not subject to thrust may be placed against forms.
5. Place thrust blocking so the fitting joints will be accessible for repair.

Restrained type pipe and fittings:

1. Provide restrained joint pipe to distance indicated on the Plans, or not less than a minimum of two pipe lengths on each side of the bend or fitting to be restrained.
  - a. Only restrained joint pipe indicated on the Plans will be paid for as a separate Pay Item.
  - b. Restraining gaskets or locking systems utilized on straight runs of push pipe are not considered as fittings, and are paid for as part of the Pay Item for restrained joint type pipe.



SEWER CROSSING. Separate water mains and water service lines from sanitary sewer, storm sewers, combined sewers, house sewer service connections, and drains in accordance with the "Standard Specifications for Water and Sewer Main Construction in Illinois".

Water mains:

1. Wherever water mains cross storm sewers, sanitary sewers, or sewer service connections:
  - a. Lay the water main so that its invert is at least 18 inches above the top of the sewer.
  - b. Maintain this vertical separation for that portion of the water main located within 10 feet horizontally of any sewer or drain crossed.
  - c. Center a length of water main pipe over the sewer to be crossed with joints equidistant from the sewer or drain.
2. When it is impossible to obtain the minimum 18 inches vertical separation, or when it is necessary for the water main to pass under a sewer or drain:
  - a. Construct the sewer or drain of pressure pipe, conforming to the specification for water main materials.
  - b. Extend the sewer construction on each side of the crossing until the normal distance from the water main to the sewer or drain is at least 10 feet.
  - c. As an alternate, install either the water main or sewer inside a casing or carrier pipe for a distance of 10 feet measured perpendicular to the sewer on each side of the crossing.
3. Where a water main must cross under a sewer:
  - a. Maintain a vertical separation of 18 inches between the invert of the sewer and the crown of the water main.
  - b. Support the sewer or drain line to prevent settling and breaking the water main.

Water service lines: Comply with the requirement of water main separation.

Sewer manholes: Do not install water line through sewer manhole.

#### VALVE VAULTS.

General:

1. Install pipe through valve vault as shown on the Detail.
2. Make vault watertight with use of flexible manhole connectors as per the Detail.

Steps:

1. Provide each manhole over 3 feet deep with individual wall-mounted steps as shown on the manhole detail.
2. Comply with the requirements of governmental agencies having jurisdiction.

Jointing:

1. Use flexible watertight gaskets for each joint.
2. Trim smooth and free from surplus gaskets.

Frames and covers: Unless otherwise shown on the Plans or as determined by the Engineer, set frames and covers:

1. In paved areas: So that the top of the solid cover will be flush with the finished pavement; or
2. In unpaved areas: To drain away from the valve vault.
3. With flexible watertight gaskets.
4. With grade rings not to exceed 8 inches.

#### HYDRANT INSTALLATION.

1. Install hydrants plumb with the lowest hose connection at least 18 inches but not more than 26 inches above the finished grade ground level. Set hydrant bases and auxiliary valve on a precast concrete block to provide firm support for the base.
2. Brace the bases with solid concrete blocking between the base and undisturbed trench wall to counteract the reaction thrust of water pressure at the base. Provide mechanical joint anchoring fittings or approved restrained joints.
3. Brace the hydrant barrels during backfilling. Do not block the drain hole in hydrant.
4. Place a minimum of 1/2 cubic yards of washed coarse stone at and around the base for proper drainage. Cover stone with plastic before backfilling.
5. Place and compact backfill materials in 6-inch layers around the hydrant and auxiliary gate valve.
6. Cover new hydrant with plastic bag until new system is in service.

#### WATER SERVICE CONNECTION.

1. Make service connections at locations shown on the Plans or determined by the Engineer at the time of construction.
2. Install water service pipe, corporation stop, curb stop, and service box as shown on the water service installation detail and by the method indicated on the Plans.
3. Set curb stop on a precast concrete block.
4. Do not splice the water service pipe.
5. Connect new water service to existing service pipe adjacent to and on residence side of water meter or service box.

Service boxes:

1. Install service box over curb stop in a truly vertical position.
2. Set the top of box flush with the surrounding finished grade.

Direct tapping of polyethylene-encased D.I.P.:

1. Wrap two or three layers of polyethylene adhesive tape completely around the pipe to cover the tapping machine and chain mounting area.
2. Make the tap and install the corporation stop directly through the tap and polyethylene.
3. After making the direct service connection, inspect the entire circumferential area for damage and make any necessary repairs.
4. Wrap the corporation stop and a minimum distance of 3 feet of the copper service pipe with polyethylene.

PRESSURE CONNECTION.

1. Support the exposed existing water main on concrete pedestals at sufficient intervals to properly carry its own weight, plus the weight of the tapping machinery and fitting. Provide thrust blocking.
2. Minimum tap hole diameter for pipe 12-inch or smaller will be 1/2-inch less than the nominal pipe diameter. For pipe 14-inch through 20-inch will be 1-1/2inch less than the pipe diameter.
3. Open valve to flush any foreign material after completion of the pressure tapping.

TUNNELING.

1. Use boring auger with a diameter at least 6 inches larger than the outside diameter of the bell of the pipe to be installed.
  - a. Place a 3-inch sand cushion in the bored hole before installing the pipe.
  - b. Push the pipe carefully into place so as not to disturb the bore hole.
  - c. Fill the void space around the pipe with sand.
2. Water main may be tunneled by hydro-boring or other directional boring method in lieu of method outlined above.
  - a. Method must be approved by Engineer at pre-construction meeting.
  - b. No additional compensation will be allowed. If alternate method proves to be unsuccessful, and Contractor will complete installation as outlined above at no addition to Contract.

POLYETHYLENE WRAPPING OF DUCTILE IRON PIPE AND APPURTENANCES.

1. Comply with requirements of ANSI/AWWA C105/A21.5-99.
  - a. Place polyethylene sheet around the entire circumference of the pipe, tie or tape sheet securely to prevent displacement during backfilling.
  - b. Wrap all water mains, fittings, valves, fire hydrant leaders, fire hydrants, and service lines.
    - (1) Wrap copper service lines to a point 3 feet from center of water main.
    - (2) Do not block fire hydrant weep hole.

TESTING AND INSPECTING.

Hydrostatic tests:

1. Devise a method for disposal of waste water from hydrostatic tests, and for disinfection, as approved in advance by the Engineer.
2. Where any section of water main is provided with concrete thrust blocking for fittings, do not make hydrostatic tests until at least 5 days after installation of concrete thrust blocking, unless otherwise approved by the Engineer.

Pressure tests:

1. Subject the new water mains and service lines, including valves and hydrants, to a hydrostatic pressure of 125 psi.
2. Hold the test pressure for duration of one hour without pressure loss or further pressure application.
3. Carefully examine exposed pipe, joints, fittings, and valves.
4. Replace or remake joints showing visible leakage.
5. Remove cracked pipe, defective pipe, and cracked or defective joints, fittings and valves. Replace with sound material and repeat the test until results are satisfactory.
6. Make repair and replacement without additional cost to the Village.
7. Use only solid stainless full-body repair clamps as approved by the Engineer.

Leakage test:

1. Conduct a metered leakage test after the pressure test has been satisfactorily completed.
2. Duration of each leakage test: At least 24 hours.
3. During the test, subject water lines to a normal water pressure of the Village's water system.
4. Install water meter approved by the Engineer. Provide double check valve assembly between water meter and existing water main.
5. Maximum allowable leakage: As recorded by a meter approved by the Engineer, with leakage to not exceed the number of gallons per hour (gph) as determined by the following formula: 
$$\text{gph} = LD (P^{1/2})/133,200$$
 in which:
  - L = Length of pipe tested, in feet
  - D = Diameter of water main, in inches
  - P = Average pressure, in pounds per square inch (gage)
6. Should any test of pipe disclose leakage greater than the maximum allowable amount, locate and repair the defective joint or joints and then repeat the 24-hour metered leakage test until the leakage is within the specified allowance, and at no additional cost to the Owner.

Time for making test:

1. Except for joint material setting, pipelines jointed with rubber gaskets, mechanical, or push-on joints, or couplings may be subjected to hydrostatic pressure, inspected, and tested for leakage any time after partial completion of backfill.
2. Perform the pressure and leakage tests satisfactorily prior to requesting the Engineer to witness the official tests.
3. Notify the Engineer at least 48 hours prior to the time of the requested official tests.
4. Depending on traffic conditions, public hazard, or other reasons, the Engineer may direct when to conduct the tests, and may order the tests to be made in relatively short sections of water mains.

PRELIMINARY FLUSHING.

1. Prior to disinfection, flush main as thoroughly as possible.
  - a. Flush main until water runs clear.
  - b. Provide a minimum flushing velocity of 2.5 fps in the water main.
  - c. Where no fire hydrant exists on the end of the main, the plug (or cap) on the end of the main must be tapped with opening in the end for flushing purposes.  
After acceptance, install threaded plug into tap.
    - (1) 8"-12" mains: 2 ½-inch tap.
    - (2) 16" mains: 3-inch tap.
    - (3) Larger than 16" use temporary fire hydrants.
  - d. Contractor has the option to use temporary fire hydrants in lieu of taps.  
Temporary fire hydrants must be removed after testing is complete.
2. Coordinate time of flushing with Owner and Engineer, at least 72 hours in advance of flushing.
  - a. Do not initiate flush without Owner's permission.

DISINFECTION. After the water main work has been satisfactorily completed and tested, disinfect the work in accordance with AWWA C651, and "Standard Specifications for Water and Sewer Main Construction in Illinois".

Forms of applied chlorine:

1. Apply chlorine by gas feed or solution feed chlorinator, as approved by the Owner.
  - a. Provide effective diffusion of the gas or solution into the water within the water main.
  - b. Provide means for preventing the backflow of water into the feeder.
2. Chlorine solution.
  - a. Apply solution of sodium hypochlorite into one end of the section of main to be disinfected while filling the main with water.

Requirement of chlorine:

1. Initial chlorine solution in pipe: At least 50 mg/l, but not more than 100 mg/l.
2. Retain the disinfecting solutions in the work for at least 24 hours
3. Chlorine residual after the retention period: At least 25 mg/l.

Flushing and testing:

1. Following chlorination, flush treated water thoroughly from the water mains until the chlorine concentration in the water flowing from the main is no higher than generally prevailing in the Village's system, or less than 1 mg/l.
2. After flushing, collect two water samples on successive days at least 24 hours apart in sterile bottles treated with sodium thiosulfate. Notify the Engineer and the Village to witness sample collection.
3. Deliver the samples to a State approved laboratory for bacteriological analysis.
4. Should the initial disinfection result in an unsatisfactory bacterial test, repeat the chlorination procedure until satisfactory results are obtained.
5. The Village will provide the water for initial flushing and testing only. Compensate the Village for water used in subsequent flushing and testing.

Swabbing:

1. Flush and swab the piping, valves, and fittings that must be placed in service immediately and cannot be disinfected by the above specified methods, with 5 percent solution of calcium hypochlorite prior to assembly.
  - a. Secure the Engineer's approval before applying this method of disinfection.

**ABANDONMENT OF EXISTING WATER MAINS AND APPURTENANCES.**

1. Abandon water mains indicated on the Drawings as "to be abandoned" only after all requirements for testing and disinfection have been satisfied and all existing services have been connected to new water mains.
2. Fill abandoned water main pipe with controlled low strength material (CLSM) Mix 1.
3. Provide concrete plugs in all water main pipes to be abandoned at the limits of the trench excavations, or at other locations if so indicated by the Plans.
4. Provide ductile iron plugs, caps, or other necessary fittings, and thrust blocking, on ends of portions of existing water mains that are to remain in service.
5. Close existing water valves only with the permission of the Engineer.
6. Remove valves, and valve boxes at the top of the existing valve, and fill excavation with compacted special granular material.
7. Remove fire hydrants in total, including auxiliary box, and backfill excavation with compacted special granular backfill material.
8. Deliver valves, valve boxes, fire hydrants, and frames and grates to the Village's Public Works Department.
9. Removal of existing water mains that are being replaced by new water mains in the same location is considered incidental to the installation of the new water main and no additional compensation will be allowed.

**LINE STOP**

Description. The work of this Pay Item consists of the installation of a line stop in an existing water main complete, including locating of existing main; sawcutting, and removal and disposal of existing pavements; excavation; removal and disposal of waste excavated materials; protection, repair, or replacement of existing utilities; dewatering, including erosion and sedimentation control methods and devices to provide protection to the environment from all pumping operations; sheeting; shoring; tapping of pipe to install temporary line stop bladder; installation of line stop; and temporary fencing, barricades, and other items needed to provide traffic control and protection and to protect excavation while new valve is being installed.

The work of this Pay Item includes removal of the line stop bladder, and capping of the tapping valve once new main valve is in place; backfilling of the excavation with compacted granular trench backfill material; but not including surface restoration.

Basis of Payment. The work will be paid for at the Contract Unit Price for each LINE STOP, of the size indicated.

### **DUCTILE IRON WATER MAIN FITTINGS**

Description. This work shall be done in accordance with the Special Provision for the “WATER DISTRIBUTION SYSTEM” and shall consist of furnishing and installing restrained water main fittings complete in place to the new water main, at locations indicated on the plans.

Method of Measurement. The work will be measured in pounds.

Basis of Payment. This work will be paid for at the Contract Unit Price of pound for DUCTILE IRON WATER MAIN FITTINGS.

### **WATER MAIN TO BE ABANDONED**

Description. The work of this Pay Item shall be in accordance with the Special Provision for “WATER DISTRIBUTION SYSTEM”, and shall consist of the abandonment of existing water mains, including the abandonment and partial removal of existing water mains; abandonment and removal of existing valve vaults, valve boxes, and existing fire hydrants, including leader piping and valve assembly; and removal of gate valves. This work shall include pavement removal and disposal; excavation; removing valve vaults, valve boxes, water valves and fire hydrants; and backfilling with and compacting of trench backfill material.

Basis of Payment. This work will be paid for at the Contract Unit Price per foot for WATER MAIN TO BE ABANDONED of the size specified or per each for REMOVE FIRE HYDRANT AND VALVE ASSEMBLY, or VALVE VAULTS TO BE ABANDONED, or REMOVE EXISTING WATER VALVE, or REMOVE AND ABANDON VALVE BOX.

## **WATER MAIN REMOVAL**

Description. This work consists of removing water main as shown on the Plans or as directed by the Engineer. Work shall conform to the applicable portions of Section 551 and Section 605 of the Standard Specifications. The ends of any water main that is to be abandoned or remain in service shall be plugged by cutting and removing a section of the pipe and placing a restrained joint cap/plug fitting on the end of the fitting or cut pipe section and place any necessary thrust restraint to keep the plug or end sections of existing piping from separating from the main under pressure. Water main removal shall end either at a joint or at a location where the existing pipe has been saw cut to provide a smooth, even surface to allow a watertight joint. After removal of the existing pipe, the integrity of that portion which is to remain in place shall be checked to insure the pipe end has not been damaged. Additional removal required by non-compliance with this Special Provision will be performed at the Contractor's expense and no additional compensation will be allowed.

Excavation and backfill for water main removal shall conform to the typical sections shown in the plans and shall conform to the provisions of Sections 20, 21, and 22 of the Standard Specifications for Water & Sewer Main Construction in Illinois.

Method of Measurement. This work will be measured for payment for removal in feet.

Basis of Payment. This work will be paid for at the contract unit price per foot for WATER MAIN REMOVAL. This work shall include all labor, equipment, materials, excavation, removal and disposal of the pipe, backfill with suitable excavated materials and aggregate as needed and disposal of all surplus material.

## **CUT AND CAP EXISTING WATER MAIN**

Description. This work shall be done in accordance with the Special Provision for "WATER DISTRIBUTION SYSTEM" and shall consist of cutting the existing water mains and installing a ductile iron cap complete in place, including sawcutting, and removal and disposal of existing pavements; excavation; removal and disposal of waste excavated materials; trench dewatering, including erosion and siltation control for discharge resulting from all pumping operations; protection, replacement, or repair of utilities; cutting and removal of the pipe if necessary; bracing; polyethylene wrapping of pipe and valves; bedding and covering of pipe; finish grading; including backfilling and compacting excavated material or trench backfill material.

Basis of Payment. This work will be paid for at the contract unit price each for CUT AND CAP EXISTING WATER MAIN, for the size noted.



## **CONNECTION TO EXISTING WATER MAIN**

Description. This work shall be done in accordance with the Special Provision for “WATER DISTRIBUTION SYSTEM” and shall consist of non-pressure connections to existing water mains complete in place, including sawcutting, and removal and disposal of existing pavements; excavation; removal and disposal of waste excavated materials; trench dewatering, including erosion and siltation control for discharge resulting from all pumping operations; protection, replacement, or repair of utilities; removal of existing plugs or caps; cutting and removal of the pipe if necessary; bracing; polyethylene wrapping of pipe and valves; bedding and covering of pipe; testing; disinfection; finish grading; including backfilling and compacting excavated material or trench backfill material, but not including the valve vault or fittings.

Basis of Payment. This work will be paid for at the Contract Unit Price each for CONNECTION TO EXISTING WATER MAIN, of the pipe or valve size shown.

## **VALVE VAULTS TO BE REMOVED**

Description. This work shall include the removal of existing valve and valve vaults where shown on the plans. The contractor shall remove the frame and cover and deliver to City Yards. The existing valve vault shall be excavated and removed for the full depth of the structure. The contractor shall sawcut the existing water main and remove the valve and associated appurtenances. The existing pipes shall be plugged.

At locations where the plans indicate “Valve to Remain,” the contractor shall carefully preserve the valve so that it can receive a Valve Box, or be abandoned in place live under pressure at no additional expense. All remaining requirements under this provision for removing the vault shall still apply.

This item shall include removal and proper disposal of all material. The excavated hole shall be properly backfilled and shall include trench backfill where required.

Basis of Payment. This work will be paid for at the contract unit price per Each for VALVE VAULTS TO BE REMOVED which price shall include any labor, materials, and trench backfill necessary for a complete installation.

## **PRESSURE CONNECTION**

Description. This work shall be done in accordance with the Special Provision for “WATER DISTRIBUTION SYSTEM” and shall consist of pressure connections to existing water mains complete in place, including sawcutting, and removal and disposal of existing pavements; excavation; removal and disposal of waste excavated materials; trench dewatering, including erosion and siltation control for discharge resulting from all pumping operations; protection, replacement, or repair of utilities; tapping of pipe; tapping valves and tapping sleeves; thrust blocking; bracing; polyethylene wrapping of pipe and valves; bedding and covering of pipe; testing; disinfection; finish grading; including backfilling with and compacting of trench backfill material, but not including the valve vault or fittings.

Basis of Payment. This work will be paid for at the Contract Unit Price each for PRESSURE CONNECTION, of the pipe and valve size shown.

### **LC800856     RECTANGULAR RAPID FLASHING BEACON ASSEMBLY (COMPLETE) (LCDOT)**

Effective: January 2, 2013

Revised: July 15, 2017

**Description:** This work shall consist of furnishing and installing the Rectangular Rapid Flashing Beacon (RRFB) Assembly complete with RRFB; power supply; traffic signal post; foundation; pedestrian push button; warning signs and plaques; controller and cabinet; and wireless communication equipment as shown on the plans and/or as specified by the Engineer. All equipment and hardware required to mount the RRFB and associated equipment to the assembly shall be included in the unit cost of this item.

**Materials:** All components shall be manufactured and assembled as a complete system and consist of the following:

**Rectangular Rapid Flashing Beacon:** Each RRFB assembly shall satisfy the FHWA *Interim Approval for Optional Use of Rectangular Rapid Flashing Beacons* (IA-11), dated July 16, 2008, and all subsequent FHWA Official Interpretation Letters and the 2009 edition of the Manual of Uniform Traffic Control Devices (MUTCD), including the unit size, mounting location, flash rate, and operational parameters unless modified herein by this special provision. The RRFB assembly shall be programmable to allow the County Traffic Engineer to set the duration of the flashing beacon display based on the crossing time requirements established in the MUTCD. The Contractor shall furnish and install two direction RRFB units with far side indicator light mounted to the sign structure as indicated on the plans. The RRFB shall be rated for Class I light intensity output according to the Society of Automotive Engineers (SAE) Standard J595 with a 15 year life expectancy. The minimum size of the LED beacon shall be 7 inches x 3 inches. The RRFB shall be able to be seen at least 1,000 feet in advance of the crossing during the day. During the night time hours, the RRFB shall be equipped with an automatic dimming feature. The RRFB shall have an operating temperature meeting NEMA specifications.

**Power Supply:** The installation may be either of an external power supply or solar powered power supply.

- A. External Power Supply: If used, the external power supply shall meet the following sections of the “Standard Specifications” and the LCDOT Traffic Signal Special Provisions except as modified herein:

Section 805, Electrical Service Installation-Traffic Signals Section 806, Grounding  
Section 810, Underground Raceways Section 870, Multi-Conductor Power Cable  
Section 873, Electric Cable

- B. Solar Power Supply: If used the solar power supply shall be easy to install, fully self-contained weather, corrosion, and vandal-resistant, with a UV-resistant solar panel. The solar power supply shall be power autonomous without need of an external power supply. The batteries shall be sealed, maintenance free, and field-replaceable independently of other components. The battery pack shall have a minimum rated lifespan of three years. The power supply system shall have the capacity to operate the RRFB for 30 days at a normal use of 400 activations of 30 seconds per day without solar charging. The RRFB shall have an automatic light control to provide useful light during extreme conditions that prevent charging over an extended period of time. The manufacturer shall provide documentation for each installation consisting of solar power calculations to verify load, duty cycle and battery capacity based on location.

The solar panel shall be installed at the highest point on the assembly structure, or as directed by the Engineer, and away from the travelled way. The solar panel shall be installed at an angle specified by the manufacturer facing the equator (due south) with a full unobstructed solar exposure for optimum performance of the system, or as recommended by the manufacturer and directed by the Engineer. If batteries are to be installed in a separate cabinet, the cabinet shall be a minimum of seven feet above the ground and located on the post as to be not over the sidewalk, bike path or trail.

**Controller:** The RRFB controller shall meet the requirements of Section 858 of the “Standard Specifications” and the LCDOT Traffic Signal Special Provisions except where modified herein:

- A. Power Options: The controller unit shall be available in both solar- powered and AC powered options.
- B. Controller to Controller Communication: At each location all installed RRFB assemblies shall communicate wirelessly using an unlicensed radio band so as to simultaneously commence operation of their alternating rapid flashing indications and cease operation simultaneously. The communication equipment shall comply with FCC requirements and the vendor representative shall field test the equipment prior to placing the units in operation to demonstrate the RRFBs ability to achieve proper operation under the requirements of FHWA Memorandum IA-11 and all subsequent interpretation letters. Up to 10 optional RF channels shall be available to allow multiple RRFB Systems to operate within close proximity of each other.

- C. Timing: The controller shall provide the full programmed timing upon all push button activations.

**Traffic Signal Post:** The traffic signal post shall meet the requirements of Section 875 of the "Standard Specifications" and the LCDOT Traffic Signal Special Provisions for traffic signal post or traffic signal post, special, as shown on the plans.

**Foundation:** The traffic signal post foundation may be either concrete or metal.

- A. Concrete Foundation: If used the concrete foundation shall meet the requirements of Section 878 of the "Standard Specifications" and the LCDOT Traffic Signal Special Provisions.
- B. Light Pole Foundation Metal: If used the metal foundation shall meet the requirements of Section 836 of the "Standard Specifications".

**Pedestrian Push Button:** The pedestrian push button shall meet the requirements of Section 888 of the "Standard Specifications" and the LCDOT Traffic Signal Special Provisions.

**Signs:** Each RRFB assembly shall include two crossing signs (W11-1, W11-2, W11-15 or S1-1) 36 inch x 36 inch dimension, two diagonal downward pointing arrow (W16-7P) plaques 24 inch x 12 inch dimension, mounted back-to-back and a R10-25 9 inch x 12 inch dimension, mounted as part of or above the pedestrian push button. The W-series sign panels shall be manufactured with fluorescent yellow green type ZZ sheeting meeting the requirements of Section 1091 of the "Standard Specifications". The R-series signs shall be manufactured with type AP sheeting meeting the requirements of Section 1091 of the "Standard Specifications" and shall be vandal resistant. All signs shall meet the latest requirements of the MUTCD. The signs shall have brackets and sign channels which are equal to and completely interchangeable with those used by the LCDOT Sign Shop. The Signfix Aluminum Channel Framing System is currently recommended, but other brands of mounting hardware are acceptable based upon the County's approval.

**Warranty:** All materials shall be warranted for three years from date of acceptance or turn on by the LCDOT Traffic Department.

**Installation:** The RRFB Assembly (Complete) shall be installed strictly according to the manufacturer's recommendations, the applicable portions of the "Standard Specifications" and the LCDOT Traffic Signal Special Provision as modified herein, as shown on the Plans, and/or as directed by the Engineer.

The final elevation and location of the beacons shall be approved by the Engineer prior to the Contractor beginning work.

**Basis of Payment:** This work will be paid at the contract unit price for each RECTANGULAR RAPID FLASHING BEACON ASSEMBLY (COMPLETE). The unit price shall include all labor, equipment, materials and documentation required to furnish and install the RRFB assembly complete with power supply; traffic signal post; foundation; pedestrian push button; warning signs and plaques; controller and cabinet; wireless communication equipment; and mounting hardware.

**BUILDING REMOVAL - CASE I (NON-FRIABLE AND FRIABLE ASBESTOS ABATEMENT)  
(BDE)**

Effective: September 1, 1990

Revised: April 1, 2010

**BUILDING REMOVAL:** This work shall consist of the removal and disposal of 3 building(s), together with all foundations, retaining walls, and piers, down to a plane 1 ft (300 mm) below the ultimate or existing grade in the area and also all incidental and collateral work necessary to complete the removal of the building(s) in a manner approved by the Engineer. Any holes, such as basements, shall be filled with a suitable granular material. The building(s) are identified as follows:

<u>Bldg. No.</u>	<u>Parcel No.</u>	<u>Location</u>	<u>Description</u>
4,5	ILC0022	19176 Grass Lake Rd Old Mill Creek Lake Villa Township Lake County, Illinois 60046	Single Family Residence
8	ILC0016	38650 N. U.S. Highway 45 Old Mill Creek Lake Villa Township Lake County, Illinois 60083	Single Family Residence

**Discontinuance of Utilities:** The Contractor shall arrange for the discontinuance of all utility services and the removal of the metering devices that serve the building(s) according to the respective requirements and regulations of the City, County, or utility companies involved. The Contractor shall disconnect and seal, in an approved manner, all service outlets that serve any building(s) he/she is to remove.

**Signs:** Immediately upon execution of the contract and prior to the wrecking of any structures, the Contractor shall be required to paint or stencil, in contrasting colors of an oil base paint, on all four sides of each residence and two opposite sides of other structures, the following sign:

PROPERTY ACQUIRED FOR  
HIGHWAY CONSTRUCTION  
TO BE DEMOLISHED BY THE

VANDALS WILL BE PROSECUTED

The signs shall be positioned in a prominent location on the structure so that they can be easily seen and read and at a sufficient height to prevent defacing. The Contractor shall not paint signs nor start demolition of any building(s) prior to the time that the State becomes the owner of the respective building(s).

All friable asbestos shall be removed from the building(s) prior to demolition. The Contractor has the option of removing the non-friable asbestos prior to demolition or demolishing the building(s) with the non-friable asbestos in place. Refer to the Special Provisions titled "Asbestos Abatement (General Conditions)", and "Removal and Disposal of Non-Friable Asbestos Building No. 8,4,5" contained herein.

Basis of Payment: This work will be paid for at the contract lump sum unit price for BUILDING REMOVAL, numbers as listed above, which price shall be payment in full for complete removal of the buildings and structures, including any necessary backfilling material as specified herein. The lump sum unit price(s) for this work shall represent the cost of demolition and disposal assuming all asbestos, friable and non-friable, is removed prior to demolition. Any salvage value shall be reflected in the contract unit price for this item.

EXPLANATION OF BIDDING TERMS: Three separate contract unit price items have been established for the removal of each building. They are:

1. BUILDING REMOVAL NO. 4
2. BUILDING REMOVAL NO. 5
3. BUILDING REMOVAL NO. 8

The Contractor shall have two options available for the removal and disposal of the non-friable asbestos.

The pay item for removal and disposal of non-friable asbestos will not be deleted regardless of the option chosen by the Contractor.

ASBESTOS ABATEMENT (GENERAL CONDITIONS): This work consists of the removal and disposal of friable and non-friable asbestos from the building(s) to be demolished. All work shall be done according to the requirements of the U.S. Environmental Protection Agency (USEPA), the Illinois Environmental Protection Agency (IEPA), the Occupational Safety and Health Administration (OSHA), and the Special Provisions for "Removal and Disposal of Non-Friable Asbestos, Building No. 4,5,8", and as outlined herein.

Sketches indicating the location of Asbestos Containing Material (ACM) are included in the proposal on pages 180 thru 194. Also refer to the Materials Description Table on page 194 for a brief description and location of the various materials. Also included is a Materials Quantities Table on page 195. This table states whether the ACM is friable or non-friable and gives the approximate quantity. The quantities are given only for information and it shall be the Contractor's responsibility to determine the exact quantities prior to submitting his/her bid.

The work involved in the removal and disposal of friable asbestos, and non-friable asbestos if done prior to demolition, shall be performed by a Contractor or Sub-Contractor prequalified with the Illinois Capital Development Board.

The Contractor shall provide a shipping manifest, similar to the one shown on page 196, to the Engineer for the disposal of all ACM wastes.

Permits: The Contractor shall apply for permit(s) in compliance with applicable regulations of the Illinois Environmental Protection Agency. Any and all other permits required by other federal, state, or local agencies for carrying on the work shall be the responsibility of the Contractor. Copies of these permits shall be sent to the district office and the Engineer.

Notifications: The "Demolition/Renovation Notice" form, which can be obtained from the IEPA office, shall be completed and submitted to the address listed below at least ten days prior to commencement of any asbestos removal or demolition activity. Separate notices shall be sent for the asbestos removal work and the building demolition if they are done as separate operations.

Asbestos Demolition/Renovation Coordinator  
Illinois Environmental Protection Agency  
Division of Air Pollution Control  
P. O. Box 19276  
Springfield, Illinois 62794-9276  
(217)785-1743

Notices shall be updated if there is a change in the starting date or the amount of asbestos changes by more than 20 percent.

Submittals:

- A. All submittals and notices shall be made to the Engineer, except where otherwise specified herein.
- B. Submittals that shall be made prior to start of work:
  1. Submittals required under Asbestos Abatement Experience.
  2. Submit documentation indicating that all employees have had medical examinations and instruction on the hazards of asbestos exposure, on use and fitting of respirators, on protective dress, on use of showers, on entry and exit from work areas, and on all aspects of work procedures and protective measures as specified in Worker Protection Procedures.
  3. Submit manufacturer's certification stating that vacuums, ventilation equipment, and other equipment required to contain airborne fibers conform to ANSI 29.2.
  4. Submit to the Engineer the brand name, manufacturer, and specification of all sealants or surfactants to be used. Testing under existing conditions will be required at the direction of the Engineer.
  5. Submit proof that all required permits, site locations, and arrangements for transport and disposal of asbestos-containing or asbestos-contaminated materials, supplies, and the like have been obtained (i.e., a letter of authorization to utilize designated landfill).

6. Submit a list of penalties, including liquidated damages, incurred through non-compliance with asbestos abatement project specifications.
  7. Submit a detailed plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location and layout of decontamination units, the sequencing of work, the respiratory protection plan to be used during this work, a site safety plan, a disposal plan including the location of an approved disposal site, and a detailed description of the methods to be used to control pollution. The plan shall be submitted to the Engineer prior to the start of work.
  8. Submit proof of written notification and compliance with Paragraph "Notifications".
- C. Submittals that shall be made upon completion of abatement work:
1. Submit copies of all waste chain-of-custodies, trip tickets, and disposal receipts for all asbestos waste materials removed from the work area;
  2. Submit daily copies of work site entry logbooks with information on worker and visitor access;
  3. Submit logs documenting filter changes on respirators, HEPA vacuums, negative pressure ventilation units, and other engineering controls; and
  4. Submit results of any bulk material analysis and air sampling data collected during the course of the abatement including results of any on-site testing by any federal, state, or local agency.

Certificate of Insurance:

- A. The Contractor shall document general liability insurance for personal injury, occupational disease and sickness or death, and property damage.
- B. The Contractor shall document current Workmen's Compensation Insurance coverage.
- C. The Contractor shall supply insurance certificates as specified by the Department.

Asbestos Abatement Experience:

- A. Company Experience: Prior to starting work, the Contractor shall supply evidence that he/she has been prequalified with the Illinois Capital Development Board and that he/she has been included on the Illinois Department of Public Health's list of approved Contractors.



B. Personnel Experience:

1. For Superintendent, the Contractor shall supply:
  - a. Evidence of knowledge of applicable regulations in safety and environmental protection is required as well as training in asbestos abatement as evidenced by the successful completion of a training course in supervision of asbestos abatement as specified in 40 CFR 763, Subpart E, Appendix C, EPA Model Contractor Accreditation Plan. A copy of the certificate of successful completion shall be provided to the Engineer prior to the start of work.
  - b. Documentation of experience with abatement work in a supervisory position as evidenced through supervising at least two asbestos abatement projects; provide names, contact, phone number, and locations of two projects in which the individual(s) has worked in a supervisory capacity.
2. For workers involved in the removal of friable and non-friable asbestos, the Contractor shall provide training as evidenced by the participation and successful completion of an accredited training course for asbestos abatement workers as specified in 40 CFR 763, Subpart E, Appendix C, EPA Model Contractor Accreditation Plan. A copy of the certificate of successful completion shall be provided to all employees who will be working on this project.

ABATEMENT AIR MONITORING: The Contractor shall comply with the following:

- A. Personal Monitoring: All personal monitoring shall be conducted per specifications listed in OSHA regulation, Title 29, Code of Federal Regulation 1926.58. All area sampling shall be conducted according to 40 CFR Part 763.90. All air monitoring equipment shall be calibrated and maintained in proper operating condition. Excursion limits shall be monitored daily. Personal monitoring is the responsibility of the Contractor. Additional personal samples may be required by the Engineer at any time during the project.
- B. Contained Work Areas for Removal of Friable Asbestos: Area samples shall be collected for the department within the work area daily. A minimum of one sample shall be taken outside of the abatement area removal operations. The Engineer will also have the option to require additional personal samples and/or clearance samples during this type of work.
- C. Interior Non-Friable Asbestos-Containing Materials: The Contractor shall perform personal air monitoring during removal of all nonfriable Transite and floor tile removal operations. The Engineer will also have the option to require additional personal samples and/or clearance samples during this type of work.
- D. Exterior Non-Friable Asbestos-Containing Materials: The Contractor shall perform personal air monitoring during removal of all nonfriable cementitious panels, piping, roofing felts, and built up roofing materials that contain asbestos.

The Contractor shall conduct down wind area sampling to monitor airborne fiber levels at a frequency of no less than three per day.

E. Air Monitoring Professional

1. All air sampling shall be conducted by a qualified Air Sampling Professional supplied by the Contractor. The Air Sampling Professional shall submit documentation of successful completion of the National Institute for Occupational Safety and Health (NIOSH) course #582 - "Sampling and Evaluating Airborne Asbestos Dust".
2. Air sampling shall be conducted according to NIOSH Method 7400. The results of these tests shall be provided to the Engineer within 24 hours of the collection of air samples.

REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 4,5,8: The Contractor has the option of removing and disposing of the non-friable asbestos prior to demolition of the building(s) or demolishing the building(s) with the non-friable asbestos in place.

Option #1 - If the Contractor chooses to remove all non-friable asbestos prior to demolition, the work shall be done according to the Special Provision titled "Asbestos Abatement (General Conditions)".

Option #2 - If the Contractor chooses to demolish the building(s) with the non-friable asbestos in place, the following provisions shall apply:

1. Continuously wet all non-friable ACM and other building debris with water during demolition.
2. Dispose of all demolition debris as asbestos containing material by placing it in lined, covered transport haulers and placing it in an approved landfill.

This work will be paid for at the contract unit price per lump sum for REMOVAL AND DISPOSAL OF NON-FRIABLE ASBESTOS, BUILDING NO. 4,5,8, as shown.

The cost for this work shall be determined as follows:

Option #1 - Actual cost of removal and disposal of non-friable asbestos.

Option #2 - The difference in cost between removing and disposing of the building if all non-friable asbestos is left in place and removing and disposing of the building assuming all non-friable asbestos is removed prior to demolition.

The cost of removing and disposing of the building(s), assuming all asbestos, friable and non-friable is removed first, shall be represented by the pay item "BUILDING REMOVAL NO. 4,5,8".

Regardless of the option chosen by the Contractor, this pay item will not be deleted, nor will the pay item BUILDING REMOVAL NO. 4,5,8 be deleted.

APPENDIX

Appendix A are the sketches of the building(s) noted on page 1 of the Special Provision. These sketches show the location of asbestos on each floor of the building(s).

Appendix B provides a "Material Description Table" also referred to on page 3 of the Special Provision.

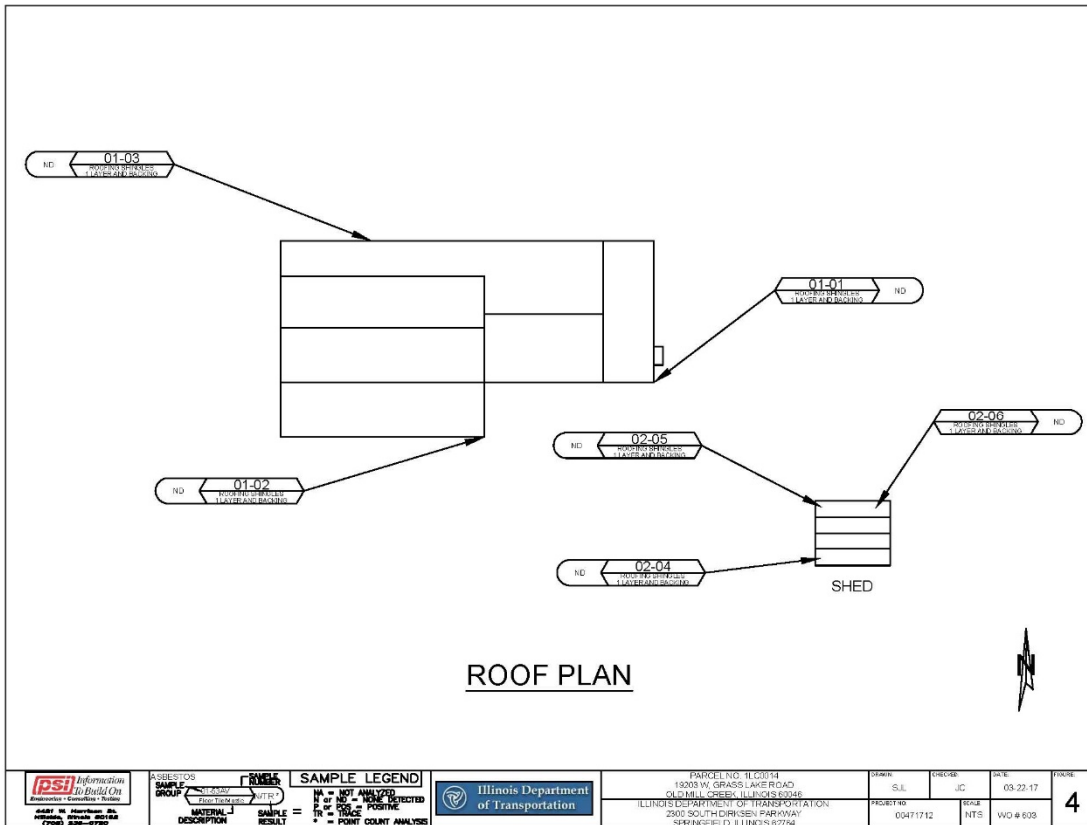
Appendix C is a "Material Quantities Table" and is referred to on page 3 of the Special Provision.

Appendix D is a sample of a Shipping Manifest form referred to on page 3.

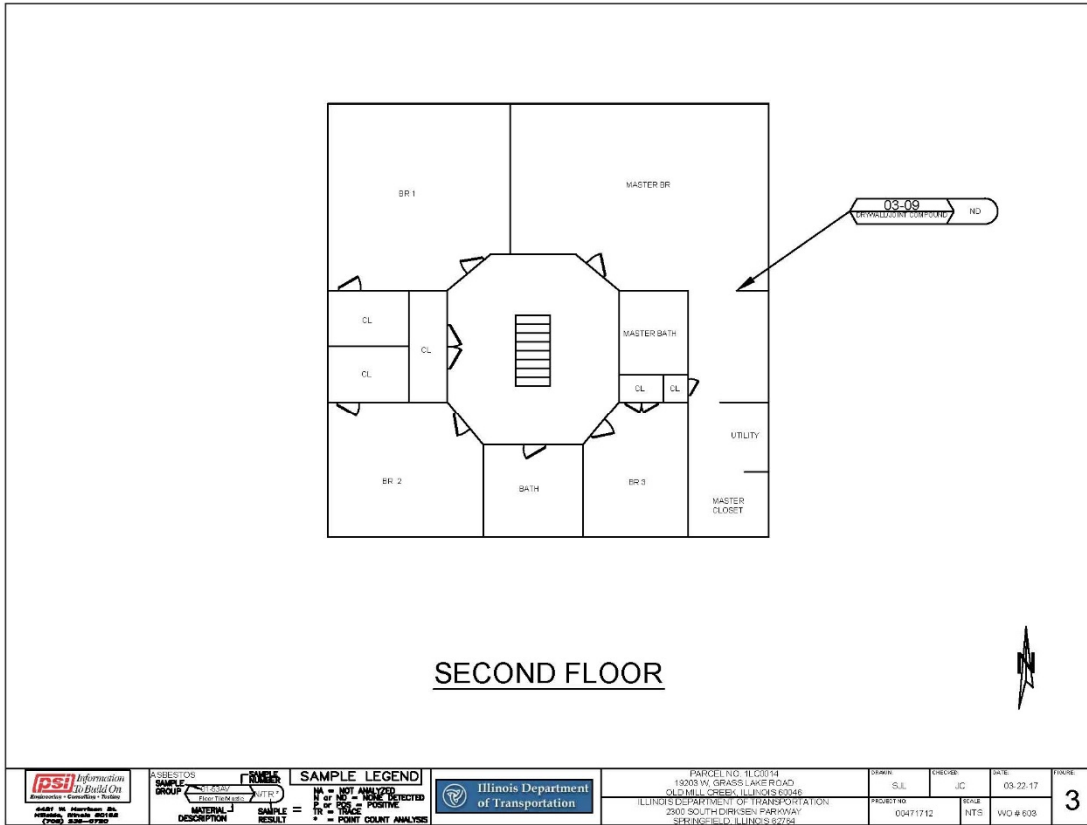
Appendix E is a sample of the building(s) identification needed on page 1.

**APPENDIX A**  
**BUILDING SKETCHES**

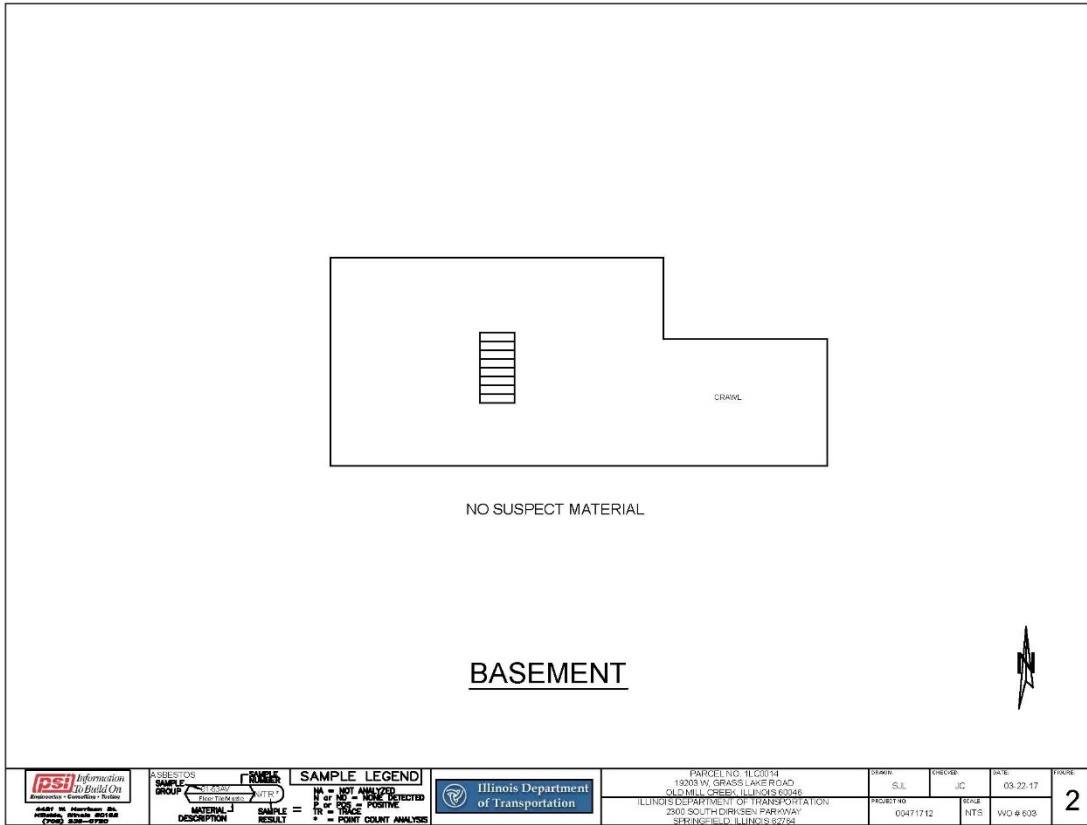
See attached PDFs of building sketches.



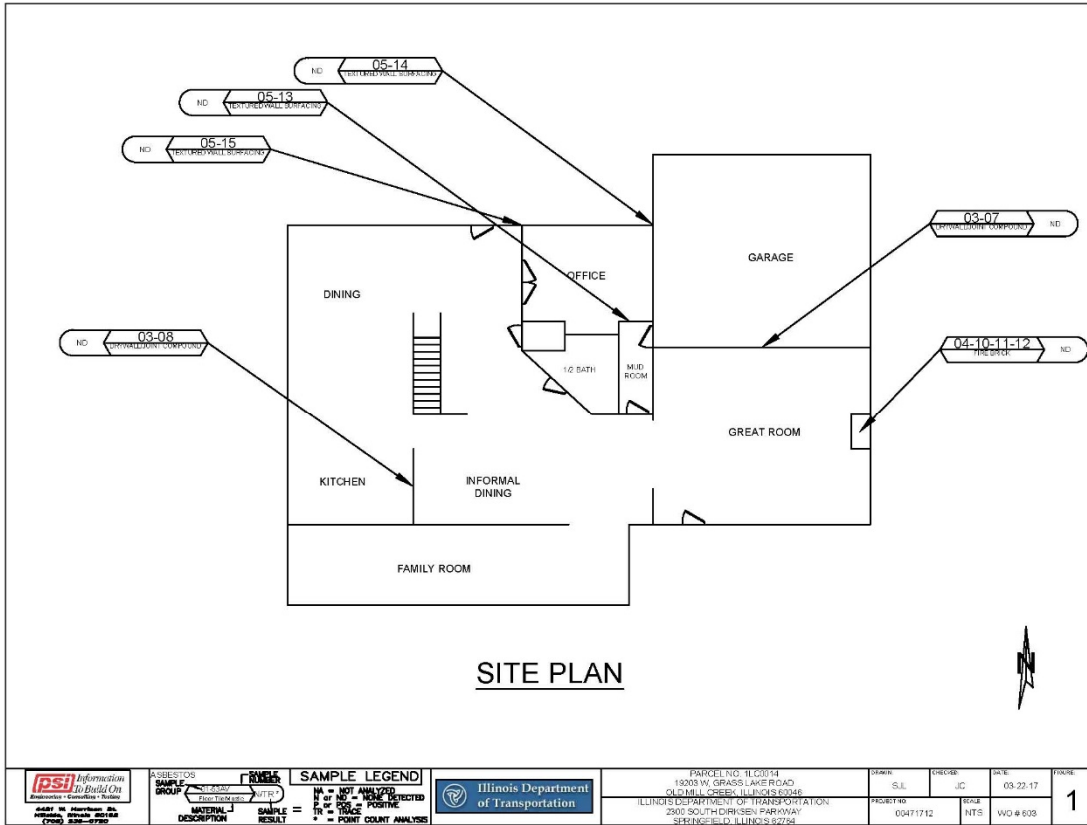
	<b>ASBESTOS</b> SAMPLE GROUP: <input type="checkbox"/> FIBERS <input type="checkbox"/> MINERAL MATERIAL: _____ SAMPLE RESULT: _____ DESCRIPTION: _____	<b>SAMPLE LEGEND</b> NA = NOT ANALYZED N or ND = NONE DETECTED P = POSITIVE TR = TRACE + = POINT COUNT ANALYSIS		PARCEL NO. 1LC0014 18003 W. GRASS LAKE ROAD OLMEN, ILLINOIS 62450	DRAWN: S.L. CHECKED: J.C. DATE: 03-22-17	SHEET NO. 00471712 TOTAL SHEETS 603	DRAWING NO. 4
				ILLINOIS DEPARTMENT OF TRANSPORTATION 2505 SOUTH DRISSEN PARKWAY SPRINGFIELD, ILLINOIS 62722	PROJECT NO. NTS WQ # 603		



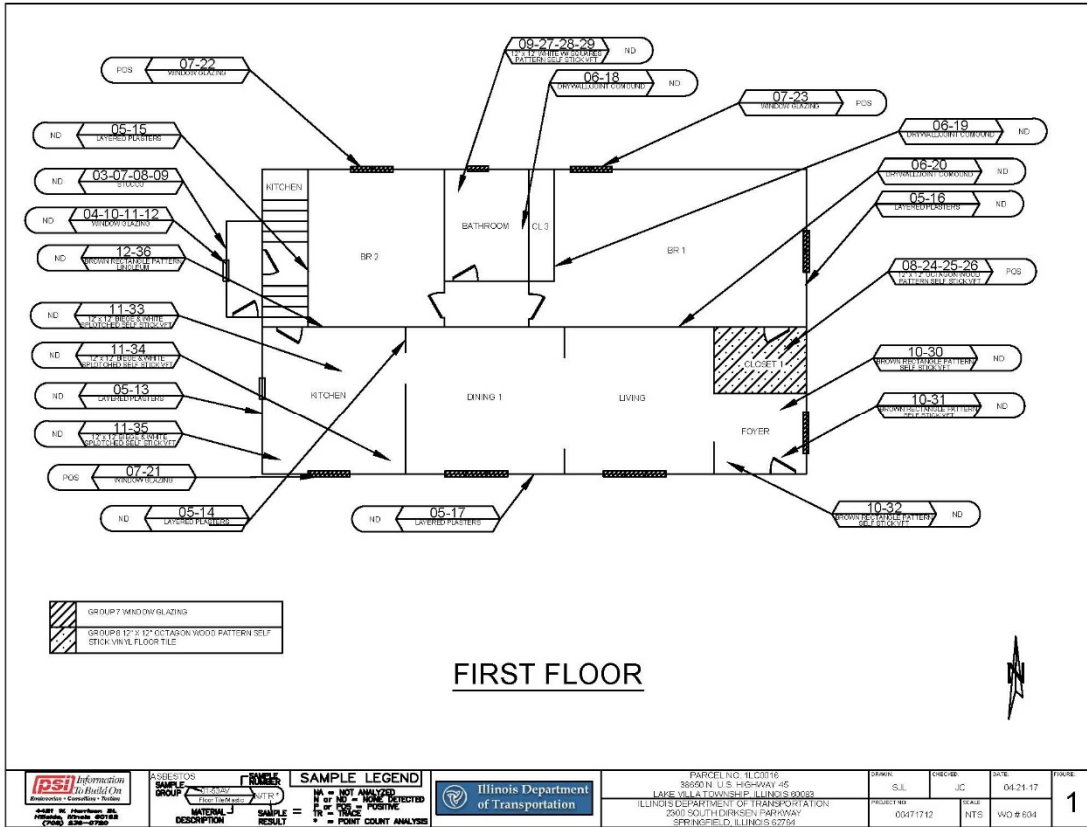
	ASSESSORS <b>GROUP</b>	<b>SMILES</b> ANALYSIS	<b>SAMPLE LEGEND</b> NA = NOT ANALYZED N = NOT DETECTED P = POSITIVE TR = TRACE * = POINT COUNT ANALYSIS		PARCEL NO. ILC0004 19208 W. GRASS LAKE ROAD OLDMILL CREEK, ILLINOIS 60046 ILLINOIS DEPARTMENT OF TRANSPORTATION 2300 SOUTH DIRKSEN PARKWAY SKOKIE, ILLINOIS 60076	DRAWN S.L.	CHECKED J.C.	DATE 03.22.17	SHEET <b>3</b>
	MATERIAL DESCRIPTION	SAMPLE RESULT			PROJECT NO. 00471712	SCALE NTS	WQ # 603		



	ASBESTOS SAMPLE GROUP: <input type="checkbox"/> FIBERGLASS MAT (F) <input type="checkbox"/> OTHER (O)	<b>SAMPLE LEGEND</b> NA = NOT ANALYZED N = NOT DETECTED P = POSITIVE TR = TRACE * = POINT COUNT ANALYSIS		PARCEL NO. ILC0004 19208 W. GRASS LAKE ROAD OLDMILL CREEK, ILLINOIS 60046		DRAWN: S.L.	CHECKED: J.C.	DATE: 03.22.17	PROJECT NO. 00471712 SHEET: NTS WORK # 603	<b>2</b>
	MATERIAL DESCRIPTION: _____ SAMPLE RESULT: _____			ILLINOIS DEPARTMENT OF TRANSPORTATION 2300 SOUTH DIRKSEN PARKWAY SKOKIE, ILLINOIS 60076		PROJECT NO. 00471712	SHEET: NTS	WORK # 603		

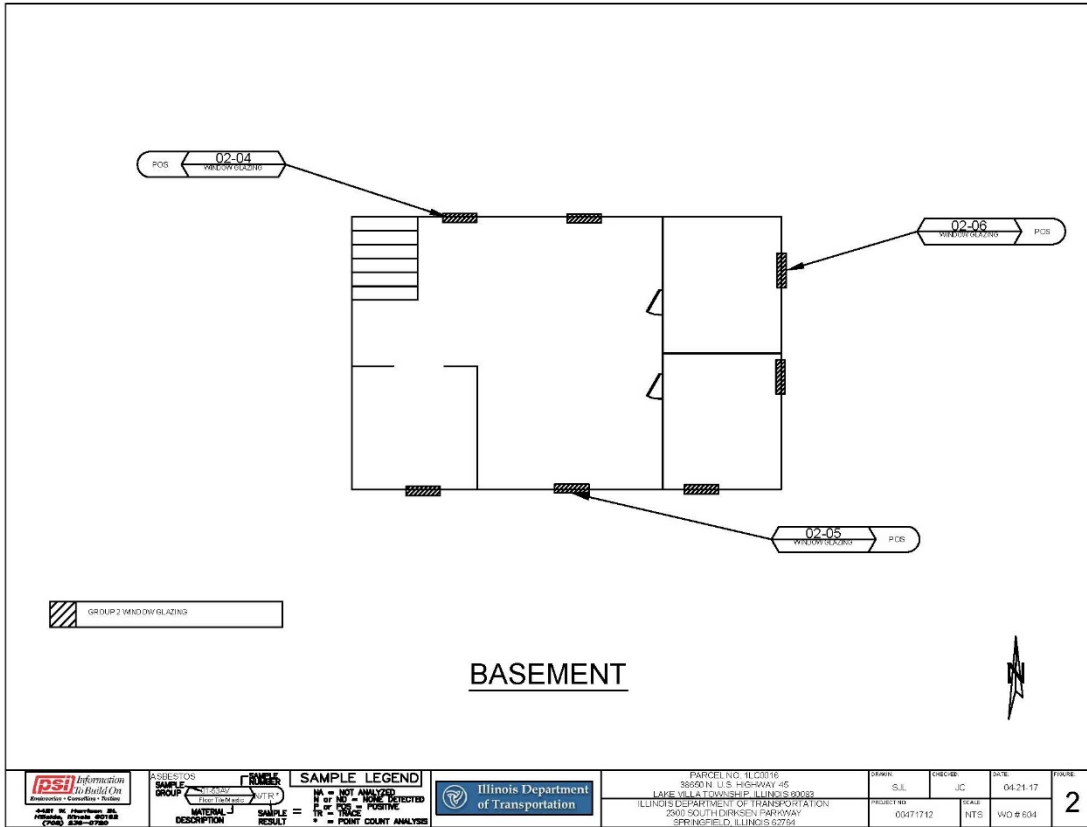


	<b>ASBESTOS</b> SAMPLE GROUP: <input type="checkbox"/> FIBERGLASS MATS <input type="checkbox"/> FIBERGLASS MATS <input type="checkbox"/> FIBERGLASS MATS	<b>SAMPLE LEGEND</b> NA = NOT ANALYZED N = NOT DETECTED P = POSITIVE TR = TRACE * = POINT COUNT ANALYSIS		PARCEL NO. 1L0004 19208 W. GRASS LAKE ROAD OLDMILL CREEK, ILLINOIS 60046		DRAW: S.L. PROJECT NO: 00471712	DROVE: J.C. SCALE: NTS	DATE: 03.22.17 WIG # 603	SHEET: 1
	<b>MATERIAL DESCRIPTION</b> SAMPLE RESULT			ILLINOIS DEPARTMENT OF TRANSPORTATION 2300 SOUTH DIRKSEN PARKWAY SHERIDAN, ILLINOIS 62256			DRAW: S.L. PROJECT NO: 00471712	DROVE: J.C. SCALE: NTS	DATE: 03.22.17 WIG # 603

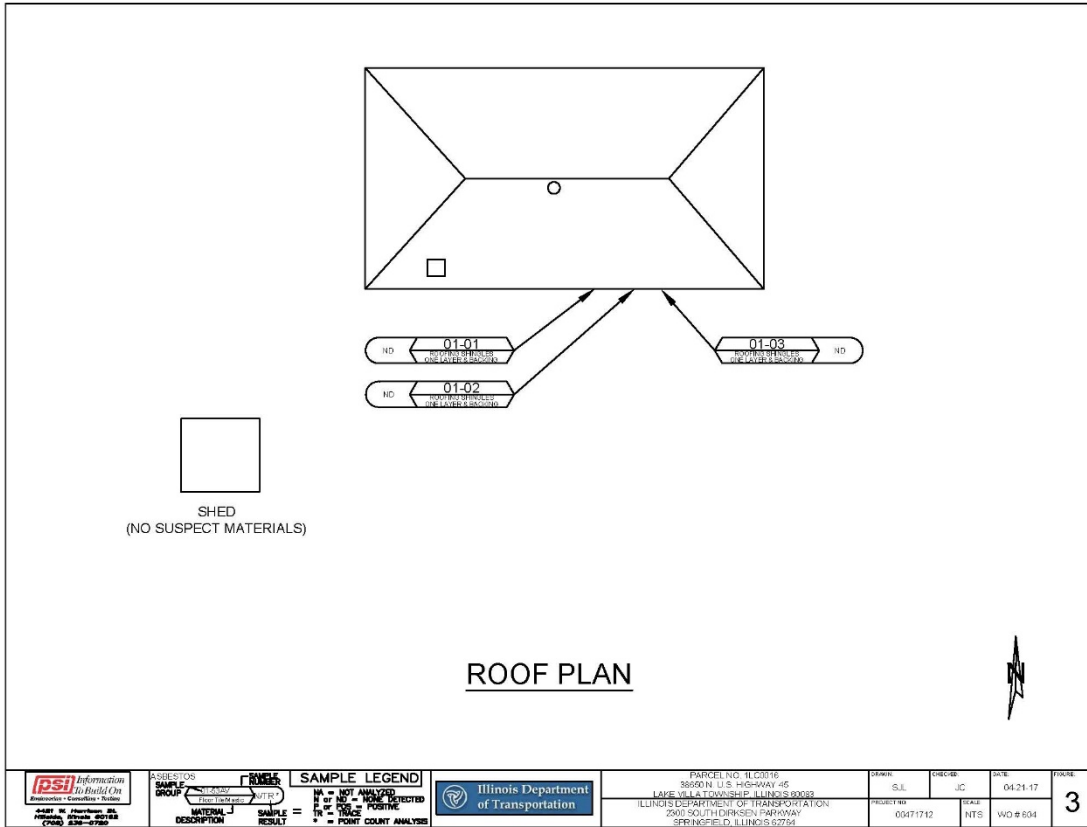


<p><b>IPSI</b>          Information          In Built On          Environmental Consulting - Testing</p> <p>4441 N. Hawthorne St.          Chicago, Illinois 60630          (773) 238-0780</p>	<p>ANALYSTS: [ ]</p> <p>SAMPLE GROUP: [ ]</p> <p>MATERIAL DESCRIPTION: [ ]</p> <p>SAMPLE RESULT: [ ]</p>	<p><b>SAMPLE LEGEND</b></p> <p>NA = NOT ANALYZED          N = NEGATIVE          P = POSITIVE          TC = TRACE          * = POINT COUNT ANALYSIS</p>	<p>Illinois Department          of Transportation</p>	PARCEL NO. IL 00118 3850N U.S. HIGHWAY 45 LAKE VILLA TOWNSHIP, ILLINOIS 60028 ILLINOIS DEPARTMENT OF TRANSPORTATION 2500 SOUTH DIRKSEN PARKWAY SPRINGFIELD, ILLINOIS 62754	SERIAL: S.L. PROJECT NO.: 00471712	CHECKER: J.C. SCALE: NTS	DATE: 04.21.17 WVO # 604	DRAWING: 1
				PARCEL NO. IL 00118 3850N U.S. HIGHWAY 45 LAKE VILLA TOWNSHIP, ILLINOIS 60028 ILLINOIS DEPARTMENT OF TRANSPORTATION 2500 SOUTH DIRKSEN PARKWAY SPRINGFIELD, ILLINOIS 62754	SERIAL: S.L. PROJECT NO.: 00471712	CHECKER: J.C. SCALE: NTS	DATE: 04.21.17 WVO # 604	DRAWING: 1

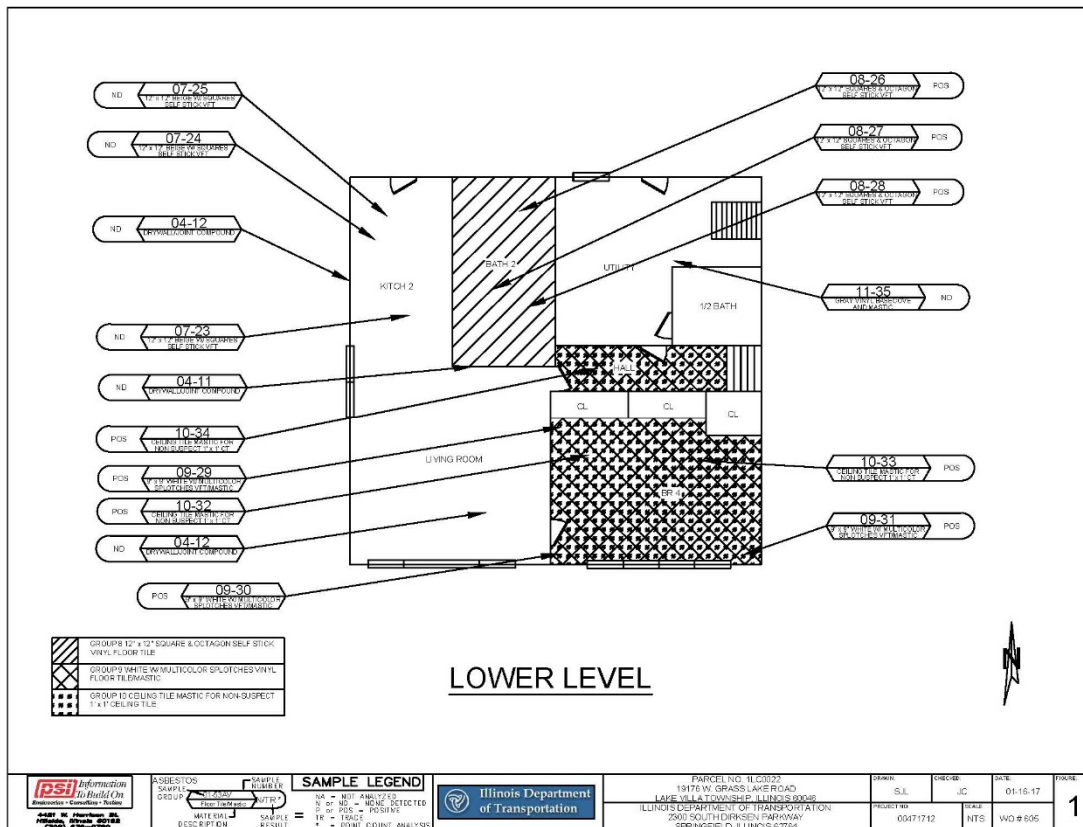




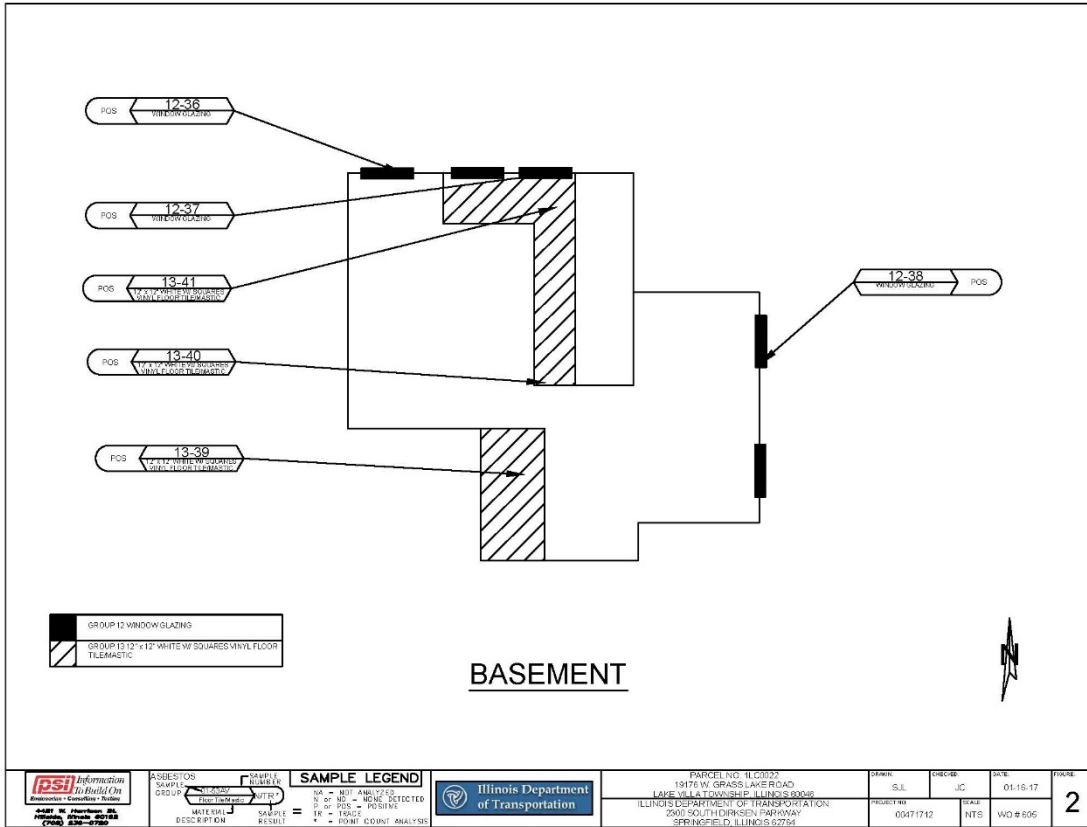
<b>Information</b> <i>To Build On</i> <small>Professional Consulting - Testing</small> <small>4441 N. Hawthorne St.</small> <small>Chicago, Illinois 60630</small> <small>CHS 331-6780</small>	<b>ANALYSTS</b> SAMPLE GROUP → ANALYSIS → RESULTS MATERIAL DESCRIPTION → SAMPLE RESULT	<b>SAMPLE LEGEND</b> NA = NOT ANALYZED N = NEGATIVE P = POSITIVE TR = TRACE * = POINT COUNT ANALYSIS	Illinois Department of Transportation	PARCEL NO. IL 00116 3850 N. U.S. HIGHWAY 45 LAKE VILLA TOWNSHIP, ILLINOIS 60028 ILLINOIS DEPARTMENT OF TRANSPORTATION 2500 SOUTH DIRKSEN PARKWAY SPRINGFIELD, ILLINOIS 62754	SERIAL: S.L. PROJECT NO: 00471712	CHECKED: J.C. DATE: 04.21.17 SCALE: NTS W/O # 504	DRAWING: 2
				DATE: 04.21.17 SCALE: NTS W/O # 504			

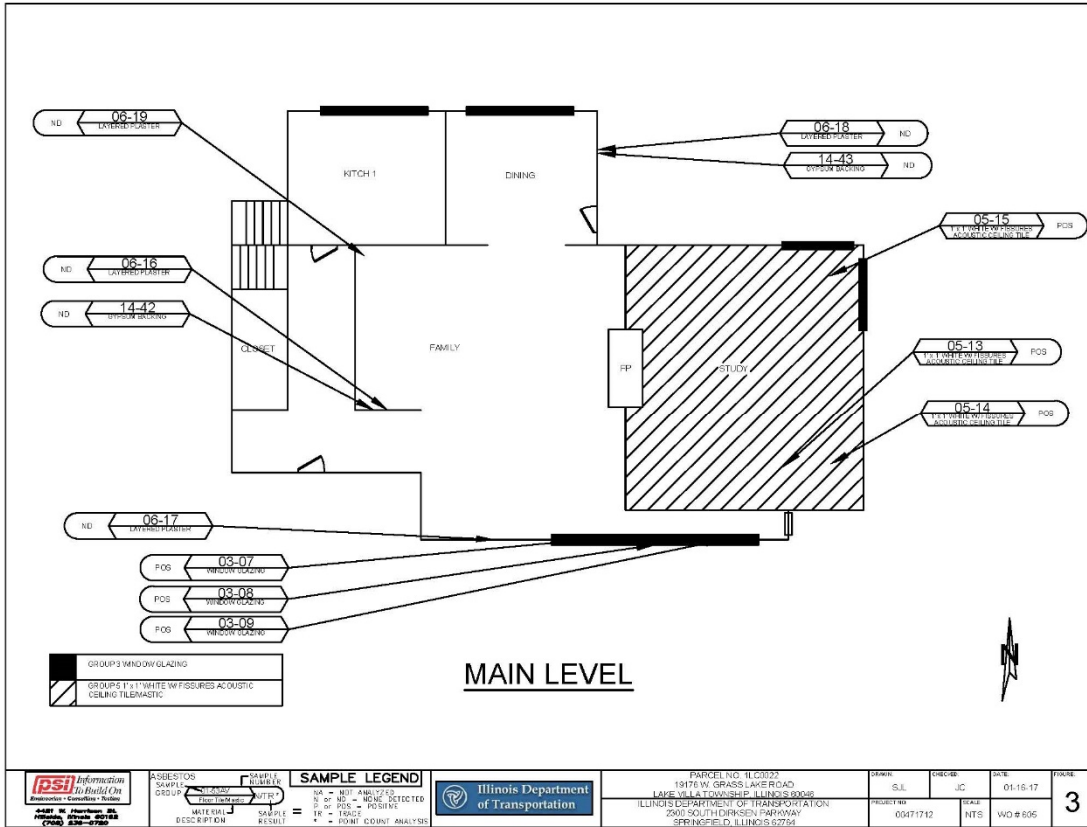


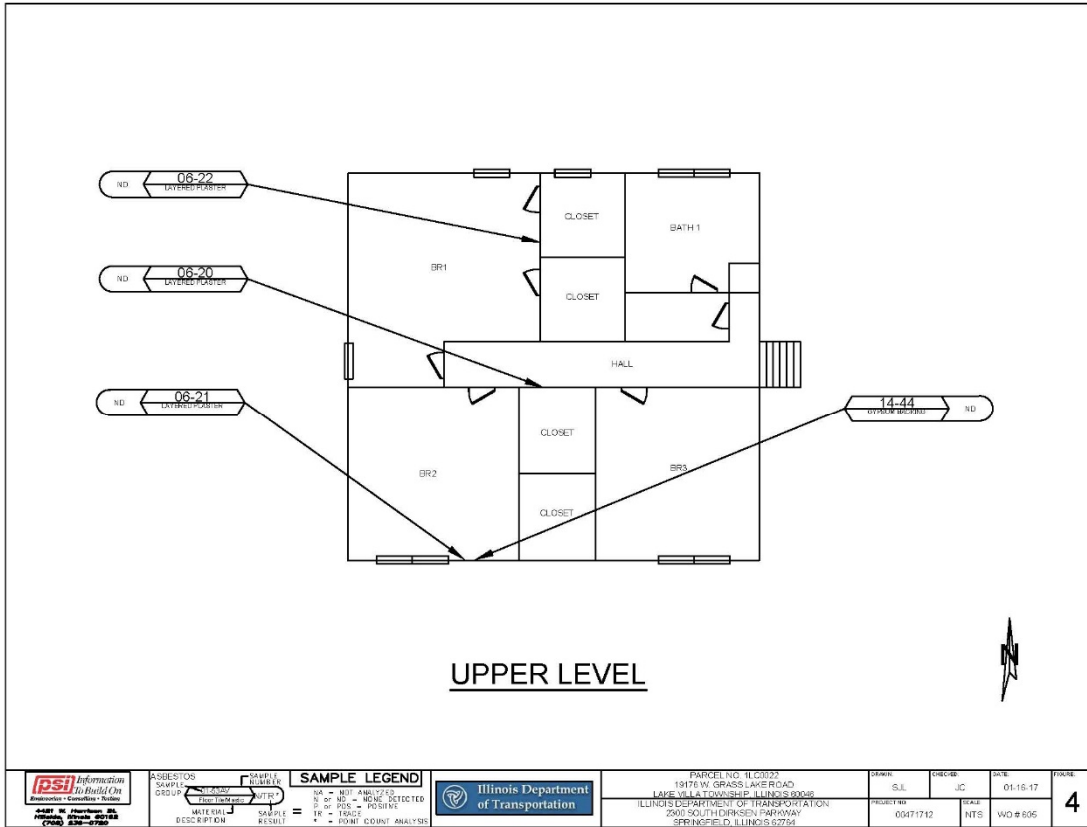
<p><b>PSI</b> Information To Build On Environmental Consulting - Testing</p> <p>4441 N. Hawthorne St. Mesa, Illinois 60140 708.438-0780</p>	<p>ASBESTOS</p> <p>← ANALYSIS →</p> <p>← SAMPLE GROUP →</p> <p>← MATERIAL DESCRIPTION →</p> <p>← SAMPLE RESULT →</p>	<p><b>SAMPLE LEGEND</b></p> <p>NA = NOT ANALYZED          N = NEGATIVE          P = POSITIVE          TR = TRACE          * = POINT COUNT ANALYSIS</p>	<p>Illinois Department of Transportation</p>	PARCEL NO. IL 00119 3850 N. U.S. HIGHWAY 45 LAKE VILLA TOWNSHIP, ILLINOIS 60029	SERIAL S.L.	CHECKED J.C.	DATE 04.21.17	DRAWING NO. 00471712 SCALE NTS W/O # 504	<b>3</b>
				ILLINOIS DEPARTMENT OF TRANSPORTATION 2500 SOUTH DIRKSEN PARKWAY SPRINGFIELD, ILLINOIS 62754					



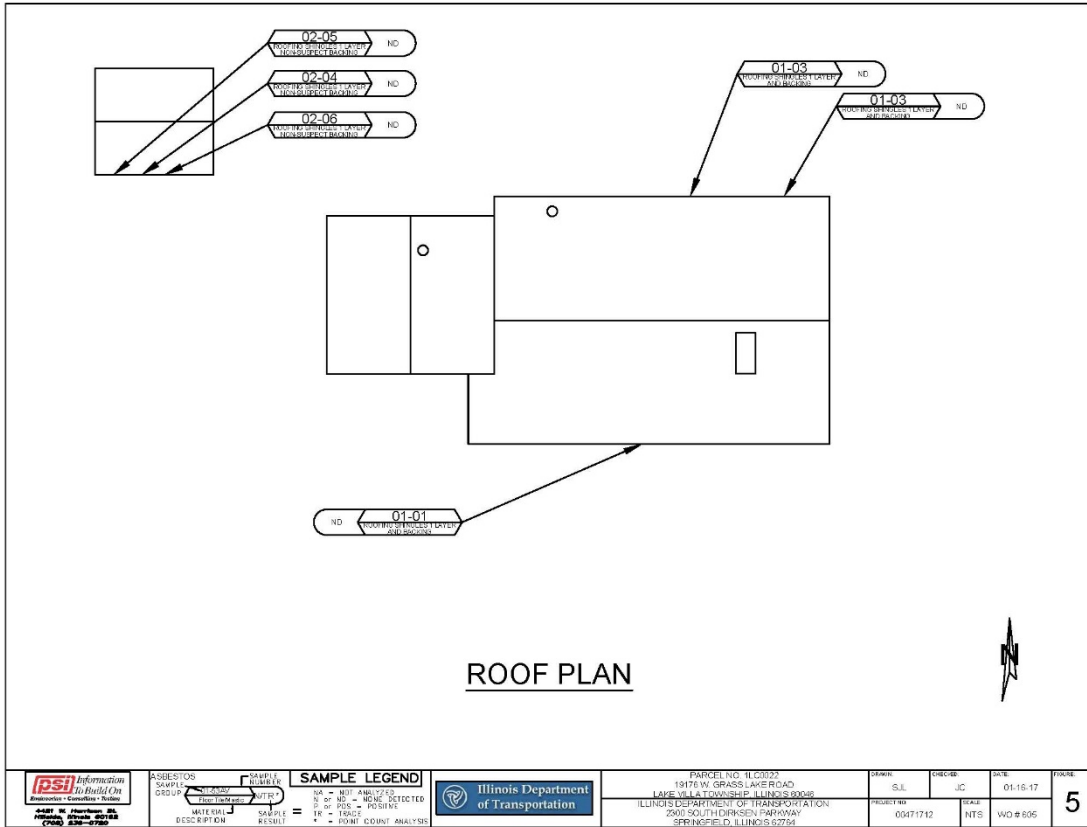
<b>Information</b> <i>To Build On</i> <small>Asbestos - Lead - Radon</small> <small>4441 N. Hawthorne St.</small> <small>Chicago, Illinois 60630</small> <small>CR# 038-0780</small>	<b>ASBESTOS</b> SAMPLE GROUP → ANALYSIS METHOD (Flooring) → (Water)	<b>SAMPLE LEGEND</b> NA = NOT ANALYZED N.D. = NONE DETECTED P. = POSITIVE IR = TRACE + = POINT COUNT ANALYSIS		PARCEL NO. 11 03027 19175 W. SPASS AVE ROAD LAKE VILLA TOWNSHIP ILLINOIS 60008	DRAWN: S.L. PROJECT NO: 00471712	CHECKED: J.C. SCALE: NTS	DATE: 01-16-17	PAGE: <b>1</b> WQ # 605
				ILLINOIS DEPARTMENT OF TRANSPORTATION 2500 SOUTH DIRKSEN PARKWAY SPRINGFIELD, ILLINOIS 62754	DATE: 01-16-17			



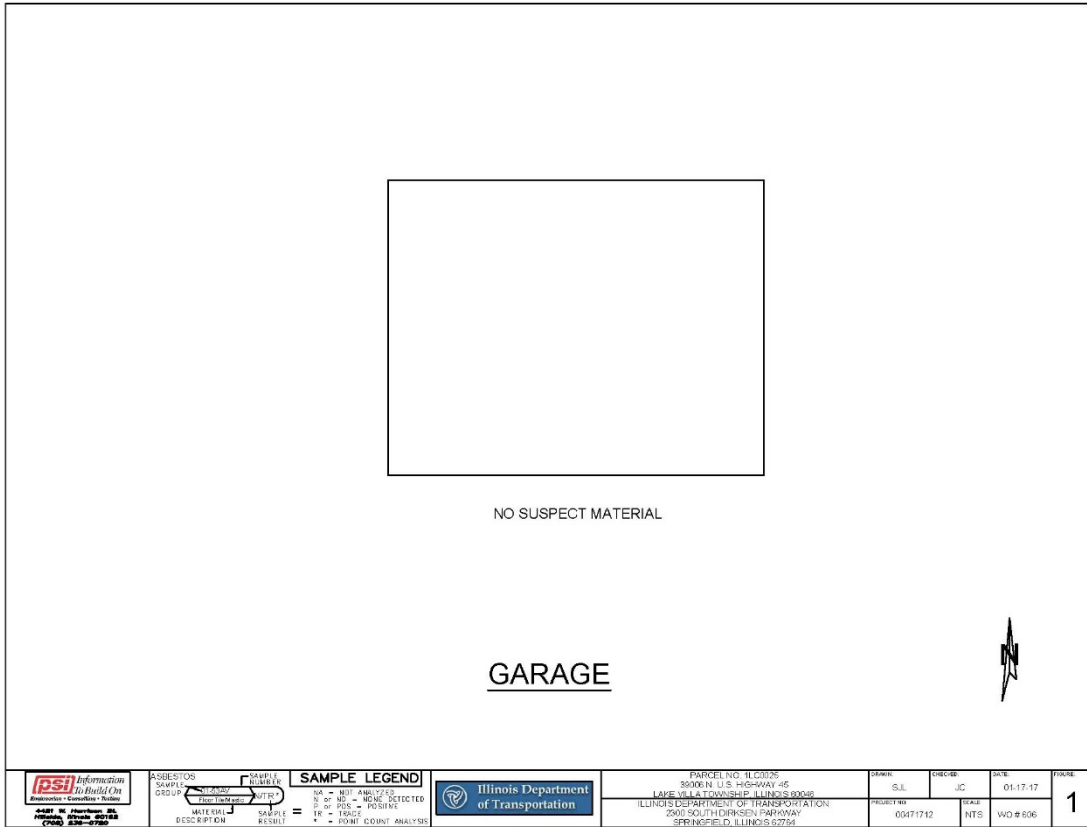




 <b>PSI Information</b> <i>To Build On</i> <small>Asbestos • Lead • Radon</small>  <small>4441 N. Hawthorne St.        Chicago, Illinois 60630        (773) 538-0780</small>	<b>ASBESTOS</b> SAMPLE GROUP → ANALYSIS (Sample Group) → (Analysis) MATERIAL DESCRIPTION → SAMPLE RESULT	<b>SAMPLE LEGEND</b> NA = NOT ANALYZED N = NO ASBESTOS DETECTED P = POSITIVE IR = TRACE + = POINT COUNT ANALYSIS	 <b>Illinois Department of Transportation</b>	PARCEL NO. 1103027 19175 W. SPASS LAKE ROAD LAKE VILLA TOWNSHIP, ILLINOIS 60068	DEMON. S.L. 00471712	CHECKER: JC DATE: 01-16-17	DRAWN: NTS W/O # 605	<b>4</b>
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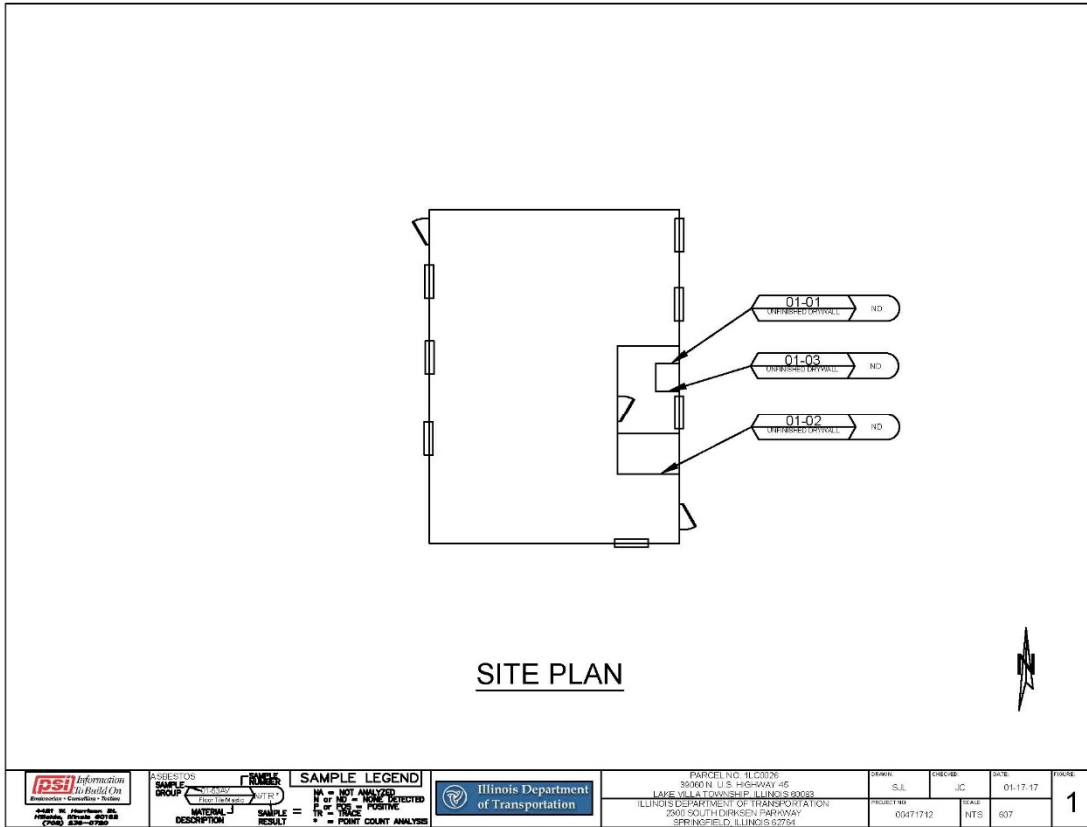


	<b>ASBESTOS</b> SAMPLE GROUP → SAMPLE NUMBER ANALYSIS → MATERIAL DESCRIPTION → SAMPLE RESULT	<b>SAMPLE LEGEND</b> NA = NOT ANALYZED N = NONE DETECTED P = POSITIVE IR = TRACE + = POINT COUNT ANALYSIS		PARCEL NO. IL00027 19175 W. GRASS LAKE ROAD LAKE VILLA TOWNSHIP, ILLINOIS 60068	DRAWN: S.L. PROJECT NO: 00471742	CHECKED: J.C. SCALE: NTS	DATE: 01-16-17	DRAWING NO: 5 W/O # 605
				ILLINOIS DEPARTMENT OF TRANSPORTATION 2500 SOUTH DIRKSEN PARKWAY SPRINGFIELD, ILLINOIS 62754	DATE: 01-16-17			



 <b>PSI Information</b> <i>To Build On</i> <small>Environmental Consulting - Testing</small>  <small>4441 N. Hawthorne St.        Chicago, Illinois 60630        (773) 238-0780</small>	ASBESTOS GROUP SAMPLE NUMBER ANALYSIS DATE MATERIAL DESCRIPTION SAMPLE RESULT	<b>SAMPLE LEGEND</b> NA = NOT ANALYZED ND = NOT DETECTED P = POSITIVE TR = TRACE + = POINT COUNT ANALYSIS	 Illinois Department of Transportation	PARCEL NO. ILL CODES 3000B U.S. HIGHWAY 45 LAKE VILLAGE TOWNSHIP ILLINOIS 60006	SERIAL S.L.	CHECKED J.C.	DATE 01/17/17	DRAWING PROJECT NO. 00471712 SCALE NTS W/O # 606  <b>1</b>
				ILLINOIS DEPARTMENT OF TRANSPORTATION 2500 SOUTH DIRKSEN PARKWAY SPRINGFIELD, ILLINOIS 62754				





 <b>Information To Build On</b> <small>Professional Consulting - Inspections</small> <small>4441 N. Hawthorne St.        Chicago, Illinois 60630        (773) 238-0780</small>	<b>ASBESTOS</b> SAMPLE GROUP → ANALYSIS ANALYSIS → SAMPLE RESULT MATERIAL DESCRIPTION	<b>SAMPLE LEGEND</b> NA = NOT ANALYZED ND = NOT DETECTED P = POSITIVE T = TRACE * = POINT COUNT ANALYSIS	 Illinois Department of Transportation	PARCEL NO. IL 0028 3000 N. U.S. HIGHWAY 45 LAKE VILLA TOWNSHIP, ILLINOIS 60028	SERIAL S.L.	CHECKED J.C.	DATE 01.17.17	PAGE 1
				ILLINOIS DEPARTMENT OF TRANSPORTATION 2500 SOUTH DIRKSEN PARKWAY SPRINGFIELD, ILLINOIS 62754	PROJECT NO. 00471712	SCALE NTS	SHEET 607	

APPENDIX B

MATERIAL DESCRIPTION TABLE

Material Description	% And Type Of Asbestos	Location, Description, Sample Number (If Applicable)
I. <u>Single Family Residence (ILC0022)</u>		
Window Glazing	5% chrysotile	House Windows, Good Condition
1" x 1" white with fissures acoustic ceiling tile	3% chrysotile	Main Level Study, Found in Mastic. None Detected in Ceiling Tile, Good Condition
12" x 12" square with octagon pattern self-stick floor tile	2% chrysotile	Bathroom number 2, Found in Tile, None Detected in Mastic, Good Condition
9" x 9" white with multi-color splotches vinyl floor tile/mastic	2% chrysotile	Lower level hallway and bedroom number 4, Found in Tile, None Detected in Mastic, Good Condition
Ceiling Tile mastic on non-suspect ceiling tile	3% chrysotile	Lower level hallway and bedroom number 4, Good Condition
Window Glazing	2% chrysotile	Basement windows, Good Condition
II. <u>Single Family Residence (ILC0016)</u>		
Window Glazing	3% chrysotile	Basement Windows, Good Condition
Window Glazing	3% chrysotile	House Windows, Good Condition
12" x 12" octagon wood grain pattern self-stick vinyl floor tile	2% chrysotile	CL 1, Found in Tile, None Detected in Mastic, Good Condition

APPENDIX C

MATERIAL QUANTITIES TABLE

The following are approximate quantities of ACM to be removed from the building indicated. These material quantities do not indicate the cleaning required to remove asbestos debris and resulting contamination from the work areas.

I. Single Family Residence (1LC0022)

<u>Material</u>	<u>Floor</u>	<u>Quantity Present</u>	<u>Friable</u>
Window Glazing	House Windows	300 L.F.	No
1" x 1" white with fissures acoustic ceiling tile	Main Level	160 S.F.	Yes
12" x 12" square w/octagon pattern self-stick floor tile	Lower Level	25 S.F.	No
9" x 9" white with multi-color splotches vinyl floor tile/mastic	Lower Level	160 S.F.	No
Ceiling Tile mastic on non-suspect ceiling tile	Lower Level	160 S.F.	No
Window Glazing	Basement	50 L.F.	No

II. Single Family Residence (1LC0016)

<u>Material</u>	<u>Floor</u>	<u>Quantity Present</u>	<u>Friable</u>
Window Glazing	Basement	90 L.F.	No
Window Glazing	House Windows	300 L.F.	No
12" x 12" octagon wood grain pattern self-stick vinyl floor tile	First Floor	35 S.F.	No

APPENDIX D

SHIPPING MANIFEST

Generator

1. Work Site Name and Mailing Address	Owner's Name	Owner's Telephone No.
2. Operator's Name and Address		Operator's Telephone No
3. Waste Disposal Site (WDS) Name Mailing Address, and Physical Site Location		WDS Telephone No.
4. Name and Address of Responsible Agency		
5. Description of Materials		
6. Containers	No.	Type
7. Total Quantity	M <sup>3</sup>	(Yd <sup>3</sup> )
8. Special Handling Instructions and Additional Information		
9. OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.		
Printed/Typed Name & Title	Signature	Month Day Year

Transporter

10. Transporter 1 (Acknowledgement of Receipt of Materials)		
Printed/Typed Name & Title	Signature	Month Day Year
Address and Telephone No.		
11. Transporter 2 (Acknowledgement of Receipt of Materials)		
Printed/Typed Name & Title	Signature	Month Day Year
Address and Telephone No.		

Disposal Site

12. Discrepancy Indication Space		
13. Waste Disposal Site Owner or Operator: Certification of Receipt of Asbestos Materials Covered By This Manifest Except As Noted in Item 12		
Printed/Typed Name & Title	Signature	Month Day Year

APPENDIX D

INSTRUCTIONS

Waste Generator Section (Items 1-9)

1. Enter the name of the facility at which asbestos waste is generated and the address where the facility is located. In the appropriate spaces, also enter the name of the owner of the facility and the owner's phone number.
2. If a demolition or renovation, enter the name and address of the Company and authorized agent responsible for performing the asbestos removal. In the appropriate spaces, also enter the phone number of the operator.
3. Enter the name, address, and physical site location of the waste disposal site (WDS) that will be receiving the asbestos materials. In the appropriate spaces, also enter the phone number of the WDS. Enter "on-site" if the waste will be disposed of on the generator's property.
4. Provide the name and address of the local, State, or EPA Regional Office responsible for administering the asbestos NESHAP program.
5. Indicate the types of asbestos waste materials generated. If from a demolition or renovation, indicate the amount of asbestos that is
  - Friable asbestos material
  - Nonfriable asbestos material
6. Enter the number of containers used to transport the asbestos materials listed in Item 5. Also enter one of the following container codes used in transporting each type of asbestos material (specify any other type of container used if not listed below):
  - DM - Metal drums, barrels
  - DP - Plastic drums, barrels
  - BA - 6 mil plastic bags or wrapping
7. Enter the quantities of each type of asbestos material removed in units of cubic meters (cubic yards).
8. Use this space to indicate special transportation, treatment, storage or disposal or Bill of Lading information. If an alternate waste disposal site is designated, note it here. Emergency response telephone numbers or similar information may be included here.
9. The authorized agent of the waste generator shall read and then sign and date this certification. The date is the date of receipt by transporter.

NOTE: The waste generator shall retain a copy of this form.

APPENDIX D

INSTRUCTIONS

Transporter Section (Items 10 & 11)

10. & 11. Enter name, address, and telephone number of each transporter used, if applicable. Print or type the full name and title of person accepting responsibility and acknowledging receipt of materials as listed on this waste shipment record for transport.

NOTE: The transporter shall retain a copy of this form.

Disposal Site Section (Items 12 & 13)

12. The authorized representative of the WDS shall note in this space any discrepancy between waste described on this manifest and waste actually received as well as any improperly enclosed or contained waste. Any rejected materials should be listed and destination of those materials provided. A site that converts asbestos-containing waste material to nonasbestos material is considered a WDS.
13. The signature (by hand) of the authorized WDS agent indicates acceptance and agreement with statements on this manifest except as noted in Item 12. The date is the date of signature and receipt of shipment.

NOTE: The WDS shall retain a completed copy of this form. The WDS shall also send a completed copy to the operator listed in Item 2.

**BUILDING REMOVAL - CASE IV (NO ASBESTOS) (BDE)**

Effective: September 1, 1990

Revised: April 1, 2010

**BUILDING REMOVAL:** This work shall consist of the removal and disposal of 2 building(s), together with all foundations, retaining walls, and piers, down to a plane 1 ft (300 mm) below the ultimate or existing grade in the area and also all incidental and collateral work necessary to complete the removal of the building(s) in a manner approved by the Engineer. Any holes, such as basements, shall be filled with a suitable granular material. The building(s) are identified as follows:

<u>Bldg. No.</u>	<u>Parcel No.</u>	<u>Location</u>	<u>Description</u>
2,3	ILC0014	19203 West Grass Lake Rd Old Mill Creek, Lake Villa Township Lake County, Illinois 60046	Single Family Residence
6	ILC0025	39006 N. U.S. Highway 45 Lake Villa Township Lake County, Illinois 60046	Garage
7	ILC0026	39060 N. U.S. Highway 45 Lake Villa Township Lake County, Illinois 60083	Insulated Storage Building

**Discontinuance of Utilities:** The Contractor shall arrange for the discontinuance of all utility services and the removal of the metering devices that serve the building(s) according to the respective requirements and regulations of the City, County, or utility companies involved. The Contractor shall disconnect and seal, in an approved manner, all service outlets that serve any building(s) he/she is to remove.

**Signs:** Immediately upon execution of the contract and prior to the wrecking of any structures, the Contractor shall be required to paint or stencil, in contrasting colors of an oil base paint, on all four sides of each residence and two opposite sides of other structures, the following sign:

PROPERTY ACQUIRED FOR  
HIGHWAY CONSTRUCTION  
TO BE DEMOLISHED BY THE

VANDALS WILL BE PROSECUTED

The signs shall be positioned in a prominent location on the structure so that they can be easily seen and read and at a sufficient height to prevent defacing. The Contractor shall not paint signs nor start demolition of any building(s) prior to the time that the State becomes the owner of the respective building(s).

Basis of Payment: This work will be paid for at the contract lump sum unit price for BUILDING REMOVAL, numbers as listed above, which price shall be payment in full for complete removal of the buildings and structures, including any necessary backfilling material as specified herein. The lump sum unit price(s) for this work shall represent the cost of demolition. Any salvage value shall be reflected in the contract unit price for this item.

Notifications: The "Demolition/Renovation Notice" form, which can be obtained from the IEPA office, shall be completed and submitted to the address listed below at least ten days prior to commencement of any demolition activity.

Asbestos Demolition/Renovation Coordinator  
Illinois Environmental Protection Agency  
Division of Air Pollution Control  
P. O. Box 19276  
Springfield, Illinois 62794-9276  
(217)785-1743

Notices shall be updated if there is a change in the starting date or the amount of asbestos changes by more than 20 percent.

Submittals:

- A. All submittals and notices shall be made to the Engineer except where otherwise specified herein.
- B. Prior to starting work, the Contractor shall submit proof of written notification and compliance with the "Notifications" paragraph.



**MEMBRANE WATERPROOFING FOR BURIED STRUCTURES**

Effective: October 4, 2016

Description. This work shall consist of furnishing and applying a self adhesive membrane waterproofing system to the top slab and sidewalls, or portions thereof, for buried structures as detailed on the contract plans.

Materials. The material used in the waterproofing system shall consist of a cold-applied, self-adhering membrane incorporating a woven or non-woven polypropylene mesh or fiberglass reinforcement with release film on one side.

The sheet membrane shall have the following physical properties:

<b>Physical Properties</b>	
Thickness ASTM D 1777	60 mils (1.500 mm) min.
Width	36 inches (914 mm) min.
Pliability [180° bend over 1/4 inch (6 mm) mandrel @ -25 °F (-32 °C)] ASTM D 146	No Effect
Elongation ASTM D 412 (Die C)	300% min
Puncture Resistance-Membrane ASTM E 154	40 lb (18 kg) min.
Permeance (Grains/ft <sup>2</sup> /hr/in Hg) ASTM E 96, Method B	0.1 max.
Water Absorption (% by Weight) ASTM D 570	0.2 max.
Adhesion to concrete ASTM D 903	5.0 lb/in (89 g/mm) min.

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

Construction. The areas requiring waterproofing shall be prepared and the waterproofing installed in accordance with the manufacturer’s instructions. Surfaces to be waterproofed shall be smooth and free from projections which might damage the waterproofing membrane. Projections or depressions on the surface on which the membrane is to be applied that may cause damage to the membrane shall be removed or filled as directed by the Engineer. The surface shall be power washed and cleaned of dust, dirt, grease, and loose particles, and shall be dry before the waterproofing is applied.

The installation of the sheet membrane shall be such that all joints are shingled to shed water by commencing from the lowest elevation of the buried structure’s top slab and progress towards the highest elevation. The membrane strips shall be overlapped a minimum of 2 ½ inches (64 mm). The membrane shall be smooth and free of wrinkles and there shall be no depressions in horizontal surfaces of the finished waterproofing.

Sealing bands at joints between precast segments shall be installed prior to the sheet membrane being applied. Where the waterproofing membrane and sealing band overlap, the installation shall be planned such that water will not be trapped or directed underneath the membrane or sealing band.

Care shall be taken to protect and to prevent damage to the membrane surface prior to and during backfilling operations. The sheet membrane shall be removed as required for the installation of slab mounted guardrails and other appurtenances. After the installation is complete, the sheet membrane shall be repaired and sealed against water intrusion according to the manufacturer's instructions and to the satisfaction of the Engineer.

Replace the last paragraph of Article 540.06 Precast Concrete Box Culverts and replace with:

Handling holes shall be filled with a polyethylene plug. The plug shall not project beyond the inside surface after installation nor project above the outside surface to the extent that may cause damage to the membrane. When metal lifting inserts are used, their sockets shall be filled with mastic or mortar compatible with the membrane.

Method of Measurement. The waterproofing system will be measured in place, in square yards (square meters) of the concrete surface to be waterproofed.

Basis of Payment. This work will be paid for at the contract unit price, per square yard (square meter) for MEMBRANE WATERPROOFING FOR BURIED STRUCTURES.

### **THREE SIDED PRECAST CONCRETE STRUCTURE (SPECIAL)**

Effective: December 21, 2016

Revised: March 29, 2017

**General.** This work shall consist of designing, furnishing and installing the three-sided precast concrete structure according to applicable portions of Sections 502, 503, 504, 512, and 540 of the Standard Specifications. The three-sided structure shall be sized to provide the design fill, minimum clear span, and maximum waterway opening specified on the contract plans. In addition, the out to out length of the structure shall be as specified on the contract plans.

**Prequalification.** The Department maintains a pre-qualified list of proprietary structural systems permitted for three sided structures. This list can be found on the Department's 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 and their presence on this list shall in no case relieve the Contractor of the site specific design or QC/QA requirements stated herein.

The Contractor shall utilize the services of a pre-qualified design engineering firm to coordinate the development of all construction documents and provide any design engineering services not provided by the supplier of the precast structure. The engineering firm shall be pre-qualified according to the Department, in the category of "Highway Bridges: Typical". Firms involved in any part of the project (plan development or management for the Department) will not be eligible to provide these services. Evidence of pre-qualification shall be included with the design submittal.

**Materials.** Materials shall be according to the following.

Item	Article/Section
(a) Cast-In-Place Concrete	1020
(b) Fine Aggregate (Note 1)	1003.04
(c) Coarse Aggregate (Note 1)	1004.05
(d) Metal Shell Piling	1006.05(a)
(e) Steel Piling	1006.05(b)
(f) Reinforcement Bars	1006.10
(g) Geocomposite Wall Drains	1040.07
(g) Precast Concrete (Note 2)	1042.03

Note 1: Backfill for the structure shall be compacted Granular Backfill except for the areas directly behind drainage openings which shall be Porous Granular Backfill unless a geocomposite wall drain is utilized.

Note 2: All three-sided precast concrete structures, precast headwalls, precast wingwalls and precast footings shall be produced according to ASTM C 1504 and according to the Department's latest Policy Memorandum "Quality Control/ Quality Assurance Program for Precast Concrete Products".

**Design.** The design of a three-sided precast concrete structure including headwalls, wingwalls, foundations, ground improvement if needed, and railing connections to the structure if applicable, shall be according to the Contract Plans and latest edition of the AASHTO LRFD Bridge Design Specifications, referenced on the structure plans, and shall include the effects of the foundation deflection during the sequence of construction anticipated. Railings shall be of the type specified on the Contract Plans and the connections shall at a minimum be designed to meet a TL 3 designation unless noted otherwise on the Contract Plans.

The Contractor shall be responsible for all work necessary to design and construct the foundations, including any stub walls, footings, piling, shafts, over excavation and aggregate backfill, geopiers, scour protection, and water diversion necessary to deal with the site conditions encountered. Their design shall be according to the current Departments policies for foundations found in Section 3.10 of the IDOT Bridge Manual. The top of footing depth shown on the plans is assumed based on the foundation scour protection method shown on the plans. Unless otherwise specified, the contractor/supplier may elect to provide and alternate method of scour protection according to the All Bridge Designer Memorandum 16.1. The actual scour depth(s) shall be calculated based on the foundation and protection method chosen.

Three sided precast concrete structures located within a Seismic Zone greater than 1, as defined in the AASHTO LRFD Bridge Design Specifications Table 3.10.6-1, shall satisfy the following requirements:

- 1) The structure shall be connected to the footing/pedestal 2 ft. (600 mm) from the outermost exterior edge of the structure at all four corners with a galvanized rigid mechanical connection subject to the approval of the Engineer. This connection shall be located on the interior face of the segment to allow for future inspection.

- 2) All top joints of exterior segments within a length of 12 ft. (3.65 m) at each end of the structure, regardless of the fill cover, shall be mechanically connected as previously described. The mechanical connection is subject to the approval of the Engineer.

The system chosen by the Contractor shall provide a hydraulically equivalent waterway opening to that specified on the plans. Evidence of equivalency shall also be provided in writing to the Engineer for review and approval prior to ordering any materials.

**Submittals.** The Contractor shall submit complete design and construction documents to the Department for review and approval prior to starting construction. The submittals shall include all calculations, shop drawings, working drawings, etc. necessary to successfully construct the structure. In addition an initial Structure Load Rating Summary (see form BBS 2795), shall be submitted. All documents shall be prepared and sealed by Illinois Licensed Structural Engineer(s). The calculations and drawings shall be submitted a minimum of 45 days prior to construction. Shop drawings for three sided precast concrete structures shall be submitted according to Article 1042.03(b) and Article 105.04 of the Standard Specifications.

The construction plans shall also include a revised waterway information table with the actual opening provided for all events, and any revisions to the scour table (if necessary) to account for the actual structure installed. The remaining information in the waterway information table shall match the waterway information table shown in the contract plans. Upon completion of the project the Contractor shall provide "As-Built" record drawings in CADD format, for the Departments use.

**Construction.** No construction of the foundations shall be started until written approval of the shop drawings is provided by the Engineer. The Contractor shall be responsible for diverting the water from the construction area as needed using a method meeting the approval of the Engineer. The cost of diverting the water shall be considered as included in the contract unit price bid for the three sided structure being constructed and no additional compensation will be allowed.

The Contractor shall obtain technical assistance from the supplier of the precast units in the form of onsite instruction and monitoring of construction staff to ensure proper installation of all units. In addition, if any issues related to fabrication and/or assembly arise during installation, the Contractor in conjunction with the supplier of the system shall be responsible for any remedial action required to remedy the situation subject to the approval of the Engineer and at no additional cost to the Department.

Unless otherwise specified, structures with a minimum design fill height of 3 ft (900 mm) or less shall be waterproofed with a system as specified elsewhere in the contract.

For structures spanning over water, 3 in. (75mm) diameter drain openings, spaced at a maximum of 8 ft (2.4 m) centers, 2 ft (600 mm) above the flow line shall be provided according to Article 503.11. For structures spanning over traffic, a geocomposite wall drain and pipe underdrain outlet system shall be installed and no drainage openings through the sidewalls will be allowed.

Whenever possible, segments shall be set from the center of the structure outward to minimize growth, caused by variation in the as-cast segment width, to ensure the headwall section and wings can be set where specified. Any joints between segments greater than ½ inch (13 mm) shall be grouted according to Article 504.06(e) prior to waterproofing.

All joints between segments shall be sealed according to Article 540.06. When the minimum fill over the structure, between the edges of the shoulders, is less than or equal to 3 ft. (1 m), the top joints between segments shall also be secured with a previously approved mechanical connection. The mechanical connection shall be used to connect a minimum length of 12 ft. (3.65 m) of exterior segments at each end of the structure. There shall be a minimum of 4 mechanical connections per joint with a maximum spacing of 10 ft. (3 m). All plates, shapes, and hardware shall be galvanized or stainless steel. If the design of the structure also requires grouted shear keys, the keyway shall be cast in the top slab of the segments and grouted according to Article 504.06(e).

The excavation and backfill for three sided precast concrete structures shall be according to Section 502 of the Standard Specifications and any additional backfilling requirements based on the precast supplier's design. All construction inspection and material certification necessary to verify these additional backfilling requirements in the field shall be the responsibility of the supplier. The three-sided precast concrete structure shall be placed according to applicable requirements of Article 542.04(d) of the Standard Specifications. When multi-spans are used a 3 in. (75 mm) minimum space shall be left between adjacent sections. After the precast units are in place and the backfill has been placed to midheight on each exterior side of the sidewalls, the space between adjacent interior legs shall be filled with Class SI concrete. The Class SI concrete shall be according to Section 1020, except the maximum size of the aggregate shall be 3/8 in. (9.5 mm).

**Method of Measurement.** Three sided precast concrete structures will be measured in feet (meters). The overall length shall be measured from out to out of headwalls along the centerline of each span of the structure. Class SI concrete placed between adjacent spans, grouted keyways or mechanical connections between precast units, and mechanical connections between the precast units and the substructure will not be measured for payment. All items necessary to construct the wingwalls, headwalls, foundation scour protection options and foundation shall not be measured for payment separately, but shall be included in this work.

**Basis of Payment.** This work will be paid for at the contract unit price per foot (meter) for THREE SIDED PRECAST CONCRETE STRUCTURES (SPECIAL) of the clear span specified. Rock excavation will be paid for separately according to Article 502.13 of the Standard Specifications.

**When foundation scour protection is specified, the cost to design and construct it shall be included in this item. Metal railing shall be measured and paid for according to Section 509 of the Standard Specification.**

**The cost of waterproofing when specified will not be included in this item but will be paid for separately.**

## **ACCESSIBLE PEDESTRIAN SIGNALS (APS) (BDE)**

Effective: April 1, 2003

Revised: January 1, 2014

Description. This work shall consist of furnishing and installing accessible pedestrian signals (APS). Each APS shall consist of an interactive vibrotactile pedestrian pushbutton with speaker, an informational sign, a light emitting diode (LED) indicator light, a solid state electronic control board, a power supply, wiring, and mounting hardware. The APS shall meet the requirements of the MUTCD and Sections 801 and 888 of the Standard Specifications, except as modified herein.

Electrical Requirements. The APS shall operate with systems providing 95 to 130 VAC, 60 Hz and throughout an ambient air temperature range of -29 to +160 °F (-34 to +70 °C).

The APS shall contain a power protection circuit consisting of both fuse and transient protection.

Audible Indications. A pushbutton locator tone shall sound at each pushbutton.

If two accessible pedestrian pushbuttons are placed less than 10 ft (3 m) apart or placed on the same pole, the audible walk indication shall be a speech walk message.

A clear, verbal message shall be used to communicate the pedestrian walk interval. This message shall sound throughout the WALK interval only. The verbal message shall be modeled after: “Street Name.’ Walk Sign is on to cross “Street Name.” No other messages shall be used to denote the WALK interval.

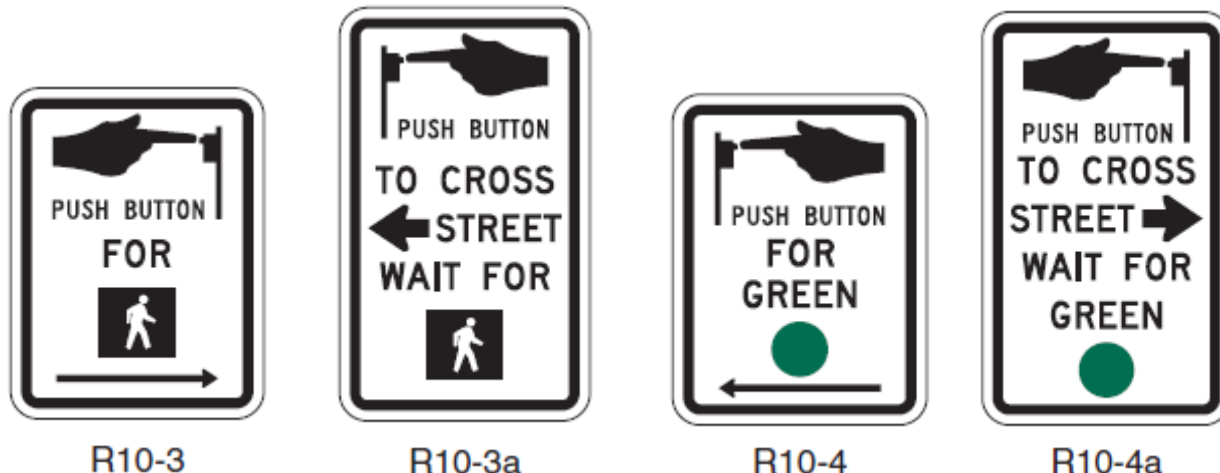
Where two accessible pedestrian pushbuttons are separated by at least 10 ft (3 m), the walk indication shall be an audible percussive tone. It shall repeat at 8 to 10 ticks per second with a dominant frequency of 880 Hz.

Automatic volume adjustments in response to ambient traffic sound level shall be provided up to a maximum volume of 100 dBA. Locator tone and verbal messages shall be no more than 5 dB louder than ambient sound.

Pedestrian Pushbutton. Pedestrian pushbuttons shall be at least 2 in. (50 mm) in diameter or width. The force required to activate the pushbutton shall be no greater than 3.5 lb (15.5 N).

A red LED shall be located on or near the pushbutton which, when activated, acknowledges the pedestrians request to cross the street.

**Signage.** A sign shall be located immediately above the pedestrian pushbutton and parallel to the crosswalk controlled by the pushbutton. The sign shall be one of the following standard MUTCD designs:



**Tactile Arrow.** A tactile arrow, pointing in the direction of travel controlled by a pushbutton, shall be provided either on the pushbutton or its sign.

**Vibrotactile Feature.** The pushbutton shall pulse when depressed and shall vibrate continuously throughout the WALK interval.

**Method of Measurement.** This work will be measured for payment as each, per pushbutton.

**Basis of Payment.** This work will be paid for at the contract unit price per each for ACCESSIBLE PEDESTRIAN SIGNALS.

**ADJUSTING FRAMES AND GRATES (BDE)**  
 Effective: April 1, 2017

Add the following to Article 602.02 of the Standard Specifications:

- “(s) High Density Expanded Polystyrene Adjusting Rings  
 with Polyurea Coating (Note 4) ..... 1043.04
- (t) Expanded Polypropylene (EPP) Adjusting Rings (Note 5) ..... 1043.05

Note 4. High density expanded polystyrene adjusting rings with polyurea coating shall meet the design load requirements of AASHTO HS20/25. The rings may be used to adjust the frames and grates of drainage and utility structures up to a maximum of 6 in. (150 mm). They shall be installed and sealed underneath the frames according to the manufacturer’s specifications.

Note 5. Riser rings fabricated from EPP may be used to adjust the frames and grates of drainage and utility structures up to a maximum of 6 in. (150 mm). An adhesive meeting ASTM C 920, Type S, Grade N5, Class 25 shall be used with EPP adjustment rings. The top ring of the adjustment stack shall be a finish ring with grooves on the lower surface and flat upper surface. The joints between all manhole adjustment rings and the frame and cover shall be sealed using the approved adhesive. In lieu of the use of an adhesive, an internal or external mechanical frame-chimney seal may be used for watertight installation. EPP adjustment rings shall not be used with heat shrinkable infiltration barriers.”

Add the following to Section 1043 of the Standard Specifications:

**“1043.04 High Density Expanded Polystyrene Adjusting Rings with Polyurea Coating.** High density expanded polystyrene adjustment rings with polyurea coating shall be designed and tested to meet or exceed an HS25 wheel load according to the AASHTO Standard Specifications for Highway Bridges (AASHTO M306 HS-25). The raw material suppliers shall provide certifications of quality or testing using the following ASTM standards, and upon request, certify that only virgin material was used in the manufacturing of the expanded polystyrene rings.

Physical Property	Test Standard	Value	
		3.0 lb/cu ft	4.5 lb/cu ft
Compression Resistance at 10% deformation at 5% deformation at 2% deformation	ASTM D 1621	50 - 70 45 - 60 15 - 20	70 - 90 60 - 80 20 - 40
Flexural Strength	ASTM D 790	90 - 120	130 - 200
Water Absorption	ASTM D 570	2.0%	1.7%
Coefficient of Linear Expansion	ASTM D 696	2.70E-06 in./in./°F	2.80E-06 in./in./°F
Sheer Strength	ASTM D 732	55	80
Tensile Strength	ASTM D 1623	70 - 90	130 - 140
Water Vapor Transmission	ASTM C 355	0.82 – 0.86 perm – in.	

High density expanded polystyrene adjustment rings with polyurea coating shall have no void areas, cracks, or tears. The actual diameter or length shall not vary more than 0.125 in. (3 mm) from the specified diameter or length. Variations in height are limited to ± 0.063 in. (± 1.6 mm). Variations shall not exceed 0.25 in. (6 mm) from flat (dish, bow, or convoluting edge) or 0.125 in. (3 mm) for bulges or dips in the surface.

**1043.05 Expanded Polypropylene (EPP) Adjusting Rings.** The EPP adjusting rings shall be manufactured using a high compression molding process to produce a minimum finished density of 7.5 lb/cu ft (120 g/l). The EPP rings shall be made of materials meeting ASTM D 3575 and ASTM D 4819-13. The grade adjustments shall be designed and tested according to the AASHTO Standard Specifications for Highway Bridges (AASHTO M 306 HS-25).

Grade rings shall contain upper and lower keyways (tongue and groove) for proper vertical alignment and sealing. The top ring, for use directly beneath the cast iron frame, shall have keyways (grooves) on the lower surface with a flat upper surface.



Adhesive or sealant used for watertight installation of the manhole grade adjustment rings shall meet ASTM C 920, Type S, Grade NS, Class 25, Uses NT, T, M, G, A, and O.

EPP adjustment rings shall have no void areas, cracks, or tears. The actual diameter or length shall not vary more than 0.125 in. (3 mm) from the specified diameter or length. Variations in height are limited to  $\pm 0.063$  in. ( $\pm 1.6$  mm). Variations shall not exceed 0.25 in. (6 mm) from flat (dish, bow, or convoluting edge) or 0.125 in. (3 mm) for bulges or dips in the surface.”

### **AUTOMATED FLAGGER ASSISTANCE DEVICES (BDE)**

Effective: January 1, 2008

Description. This work shall consist of furnishing and operating automated flagger assistance devices (AFADs) as part of the work zone traffic control and protection for two-lane highways where two-way traffic is maintained over one lane of pavement. Use of these devices shall be at the option of the Contractor.

Equipment. AFADs shall be according to the FHWA memorandum, “MUTCD - Revised Interim Approval for the use of Automated Flagger Assistance Devices in Temporary Traffic Control Zones (IA-4R)”, dated January 28, 2005. The devices shall be mounted on a trailer or a moveable cart and shall meet the requirements of NCHRP 350, Category 4.

The AFAD shall be the Stop/Slow type. This device uses remotely controlled “STOP” and “SLOW” signs to alternately control right-of-way.

Signs for the AFAD shall be according to Article 701.03 of the Standard Specifications and the MUTCD. The signs shall be 24 x 24 in. (600 x 600 mm) having an octagon shaped “STOP” sign on one side and a diamond shaped “SLOW” sign on the opposite side. The letters on the signs shall be 8 in. (200 mm) high. If the “STOP” sign has louvers, the full sign face shall be visible at a distance of 50 ft (15 m) and greater.

The signs shall be supplemented with one of the following types of lights.

- (a) Flashing Lights. When flashing lights are used, white or red flashing lights shall be mounted within the “STOP” sign face and white or yellow flashing lights within the “SLOW” sign face.
- (b) Stop and Warning Beacons. When beacons are used, a stop beacon shall be mounted 24 in. (600 mm) or less above the “STOP” sign face and a warning beacon mounted 24 in. (600 mm) or less above, below, or to the side of the “SLOW” sign face. As an option, a Type B warning light may be used in lieu of the warning beacon.

A “WAIT ON STOP” sign shall be placed on the right hand side of the roadway at a point where drivers are expected to stop. The sign shall be 24 x 30 in. (600 x 750 mm) with a black legend and border on a white background. The letters shall be at least 6 in. (150 mm) high.

This device may include a gate arm or mast arm that descends to a horizontal position when the "STOP" sign is displayed and rises to a vertical position when the "SLOW" sign is displayed. When included, the end of the arm shall reach at least to the center of the lane being controlled. The arm shall have alternating red and white retroreflective stripes, on both sides, sloping downward at 45 degrees toward the side on which traffic will pass. The stripes shall be 6 in. (150 mm) in width and at least 2 in. (50 mm) in height.

Flagging Requirements. Flaggers and flagging requirements shall be according to Article 701.13 of the Standard Specifications and the following.

AFADs shall be placed at each end of the traffic control, where a flagger is shown on the plans. The flaggers shall be able to view the face of the AFAD and approaching traffic during operation.

To stop traffic, the "STOP" sign shall be displayed, the corresponding lights/beacon shall flash, and when included, the gate arm shall descend to a horizontal position. To permit traffic to move, the "SLOW" sign shall be displayed, the corresponding lights/beacon shall flash, and when included, the gate arm shall rise to a vertical position.

If used at night, the AFAD location shall be illuminated according to Section 701 of the Standard Specifications.

When not in use, AFADs will be considered nonoperating equipment and shall be stored according to Article 701.11 of the Standard Specifications.

Basis of Payment. This work will not be paid for separately but shall be considered as included in the cost of the various traffic control items included in the contract.

### **COMPENSABLE DELAY COSTS (BDE)**

Effective: June 2, 2017

Revise Article 107.40(b) of the Standard Specifications to read:

"(b) Compensation. Compensation will not be allowed for delays, inconveniences, or damages sustained by the Contractor from conflicts with facilities not meeting the above definition; or if a conflict with a utility in an unanticipated location does not cause a shutdown of the work or a documentable reduction in the rate of progress exceeding the limits set herein. The provisions of Article 104.03 notwithstanding, compensation for delays caused by a utility in an unanticipated location will be paid according to the provisions of this Article governing minor and major delays or reduced rate of production which are defined as follows.

- (1) Minor Delay. A minor delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two hours, but not to exceed two weeks.
- (2) Major Delay. A major delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two weeks.

- (3) Reduced Rate of Production Delay. A reduced rate of production delay occurs when the rate of production on the work in conflict with the utility in an unanticipated location decreases by more than 25 percent and lasts longer than seven calendar days.”

Revise Article 107.40(c) of the Standard Specifications to read:

“(c) Payment. Payment for Minor, Major, and Reduced Rate of Production Delays will be made as follows.

- (1) Minor Delay. Labor idled which cannot be used on other work will be paid for according to Article 109.04(b)(1) and (2) for the time between start of the delay and the minimum remaining hours in the work shift required by the prevailing practice in the area.

Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.04(b)(4).

- (2) Major Delay. Labor will be the same as for a minor delay.

Equipment will be the same as for a minor delay, except Contractor-owned equipment will be limited to two weeks plus the cost of move-out to either the Contractor’s yard or another job and the cost to re-mobilize, whichever is less. Rental equipment may be paid for longer than two weeks provided the Contractor presents adequate support to the Department (including lease agreement) to show retaining equipment on the job is the most economical course to follow and in the public interest.

- (3) Reduced Rate of Production Delay. The Contractor will be compensated for the reduced productivity for labor and equipment time in excess of the 25 percent threshold for that portion of the delay in excess of seven calendar days. Determination of compensation will be in accordance with Article 104.02, except labor and material additives will not be permitted.

Payment for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be determined according to Article 109.13.”

Revise Article 108.04(b) of the Standard Specifications to read:

“(b) No working day will be charged under the following conditions.

- (1) When adverse weather prevents work on the controlling item.
- (2) When job conditions due to recent weather prevent work on the controlling item.
- (3) When conduct or lack of conduct by the Department or its consultants, representatives, officers, agents, or employees; delay by the Department in making the site available; or delay in furnishing any items required to be furnished to the Contractor by the Department prevents work on the controlling item.

- (4) When delays caused by utility or railroad adjustments prevent work on the controlling item.
- (5) When strikes, lock-outs, extraordinary delays in transportation, or inability to procure critical materials prevent work on the controlling item, as long as these delays are not due to any fault of the Contractor.
- (6) When any condition over which the Contractor has no control prevents work on the controlling item.”

Revise Article 109.09(f) of the Standard Specifications to read:

“(f) Basis of Payment. After resolution of a claim in favor of the Contractor, any adjustment in time required for the work will be made according to Section 108. Any adjustment in the costs to be paid will be made for direct labor, direct materials, direct equipment, direct jobsite overhead, direct offsite overhead, and other direct costs allowed by the resolution. Adjustments in costs will not be made for interest charges, loss of anticipated profit, undocumented loss of efficiency, home office overhead and unabsorbed overhead other than as allowed by Article 109.13, lost opportunity, preparation of claim expenses and other consequential indirect costs regardless of method of calculation.

The above Basis of Payment is an essential element of the contract and the claim cost recovery of the Contractor shall be so limited.”

Add the following to Section 109 of the Standard Specifications.

“**109.13 Payment for Contract Delay.** Compensation for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be allowed when such costs result from a delay meeting the criteria in the following table.

Contract Type	Cause of Delay	Length of Delay
Working Days	Article 108.04(b)(3) or Article 108.04(b)(4)	No working days have been charged for two consecutive weeks.
Completion Date	Article 108.08(b)(1) or Article 108.08(b)(7)	The Contractor has been granted a minimum two week extension of contract time, according to Article 108.08.

Payment for each of the various costs will be according to the following.

- (a) Escalated Material and/or Labor Costs. When the delay causes work, which would have otherwise been completed, to be done after material and/or labor costs have increased, such increases will be paid. Payment for escalated material costs will be limited to the increased costs substantiated by documentation furnished by the Contractor. Payment for escalated labor costs will be limited to those items in Article 109.04(b)(1) and (2), except the 35 percent and 10 percent additives will not be permitted.

(b) Extended Project Overhead. For the duration of the delay, payment for extended project overhead will be paid as follows.

(1) Direct Jobsite and Offsite Overhead. Payment for documented direct jobsite overhead and documented direct offsite overhead, including onsite supervisory and administrative personnel, will be allowed according to the following table.

Original Contract Amount	Supervisory and Administrative Personnel
Up to \$5,000,000	One Project Superintendent
Over \$ 5,000,000 - up to \$25,000,000	One Project Manager, One Project Superintendent or Engineer, and One Clerk
Over \$25,000,000 - up to \$50,000,000	One Project Manager, One Project Superintendent, One Engineer, and One Clerk
Over \$50,000,000	One Project Manager, Two Project Superintendents, One Engineer, and One Clerk

(2) Home Office and Unabsorbed Overhead. Payment for home office and unabsorbed overhead will be calculated as 8 percent of the total delay cost.

(c) Extended Traffic Control. Traffic control required for an extended period of time due to the delay will be paid. For working day contracts the payment will be made according to Article 109.04. For completion date contracts, an adjustment will be determined as follows.

Extended Traffic Control occurs between April 1 and November 30:

$$\text{ETCP Adjustment (\$)} = \text{TE} \times (\% / 100 \times \text{CUP} / \text{OCT})$$

Extended Traffic Control occurs between December 1 and March 31:

$$\text{ETCP Adjustment (\$)} = \text{TE} \times 1.5 (\% / 100 \times \text{CUP} / \text{OCT})$$

Where: TE = Duration of approved time extension in calendar days.  
 % = Percent maintenance for the traffic control, % (see table below).  
 CUP = Contract unit price for the traffic control pay item in place during the delay.  
 OCT = Original contract time in calendar days.

Original Contract Amount	Percent Maintenance
Up to \$2,000,000	65%
\$2,000,000 to \$10,000,000	75%
\$10,000,000 to \$20,000,000	85%
Over \$20,000,000	90%

When an ETCP adjustment is paid under this provision, an adjusted unit price as provided for in Article 701.20(a) for increase or decrease in the value of work by more than ten percent will not be paid.

Upon payment for a contract delay under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this provision."

**CONCRETE BOX CULVERTS WITH SKEWS > 30 DEGREES AND DESIGN FILLS ≤ 5 FEET (BDE)**

Effective: April 1, 2012

Revised: July 1, 2016

Revise the second paragraph of Article 540.04 of the Standard Specifications to read:

"Unless otherwise noted on the plans, the Contractor shall have the option, when a cast-in-place concrete box culvert is specified, of constructing the box culvert using precast box culvert sections when the design cover is 6 in. (150 mm) minimum. The precast box culvert sections shall be designed for the same design cover shown on the plans for cast-in-place box culvert; shall be of equal or larger size opening, and shall satisfy the design requirements of ASTM C 1577."

Add the following after the seventh paragraph of Article 540.06 of the Standard Specifications:

"Precast concrete box culverts with skews greater than 30 degrees and having design covers less than or equal to 5 ft are not covered by the standard design table shown in ASTM C 1577. The design table provided herein is provided to address this design range. The same notes, reinforcement configurations, clearances, and requirements of ASTM C 1577 apply to this special design table. A box designated 7 x 6 x 8 indicates a span of 7 ft, a rise of 6 ft, and top slab, bottom slab, walls and haunches of 8 in. unless otherwise noted on the tables.

3 ft x 2 ft x 4 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2*	0.17	1.10	0.30	0.10	0.28	0.17	0.92	0.14	
2<3	0.14	0.18	0.19	0.10					31
3-5	0.10	0.12	0.12	0.10					29

\*top slab 7.0 in., bottom slab 6.0 in.

3 ft x 3 ft x 4 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2*	0.17	1.17	0.33	0.10	0.31	0.17	0.92	0.14	
2<3	0.10	0.22	0.22	0.10					31
3-5	0.10	0.14	0.14	0.10					31

\*top slab 7.0 in., bottom slab 6.0 in.

4 ft x 2 ft x 5 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2*	0.21	0.88	0.26	0.12	0.28	0.18	0.89	0.14	
2<3	0.20	0.21	0.20	0.12					33
3-5	0.13	0.13	0.14	0.12					32

\*top slab 7.5 in., bottom slab 6.0 in.

4 ft x 3 ft x 5 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2*	0.18	1.02	0.31	0.12	0.32	0.18	0.87	0.14	
2<3	0.16	0.25	0.24	0.12					38
3-5	0.12	0.16	0.17	0.12					34

\*top slab 7.5 in., bottom slab 6.0 in.

4 ft x 4 ft x 5 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2*	0.18	1.08	0.34	0.12	0.34	0.18	0.86	0.14	
2<3	0.13	0.28	0.27	0.12					38
3-5	0.12	0.18	0.19	0.12					38

\*top slab 7.5 in., bottom slab 6.0 in.

5 ft x 2 ft x 6 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2*	0.27	0.63	0.23	0.14	0.24	0.19	0.19	0.17	
2<3	0.25	0.22	0.20	0.14					37
3-5	0.17	0.15	0.15	0.14					35

\*top slab 8.0 in., bottom slab 7.0 in.



5 ft x 3 ft x 6 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2*	0.20	0.72	0.27	0.14	0.29	0.19	.071	0.17	
2<3	0.21	0.26	0.25	0.14					37
3-5	0.14	0.18	0.18	0.14					35

\*top slab 8.0 in., bottom slab 7.0 in.

5 ft x 4 ft x 6 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2*	0.19	0.78	0.30	0.14	0.31	0.19	0.70	0.17	
2<3	0.18	0.30	0.28	0.14					45
3-5	0.14	0.20	0.21	0.14					40

\*top slab 8.0 in., bottom slab 7.0 in.

5 ft x 5 ft x 6 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2*	0.19	0.82	0.33	0.14	0.34	0.19	0.69	0.17	
2<3	0.16	0.33	0.32	0.14					45
3-5	0.14	0.22	0.23	0.14					45

\*top slab 8.0 in., bottom slab 7.0 in.

6 ft x 2 ft x 7 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2*	0.33	0.51	0.21	0.17	0.23	0.19	0.61	0.17	
2<3	0.31	0.22	0.22	0.17					42
3-5	0.22	0.17	0.17	0.17					41

\*top slab 8.0 in.

6 ft x 3 ft x 7 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2*	0.27	0.58	0.26	0.17	0.27	0.19	0.58	0.17	
2<3	0.26	0.27	0.27	0.17					41
3-5	0.18	0.19	0.20	0.17					39

\*top slab 8.0 in.

6 ft x 4 ft x 7 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2*	0.25	0.64	0.30	0.17	0.30	0.19	0.57	0.17	
2<3	0.23	0.31	0.31	0.17					42
3-5	0.17	0.22	0.23	0.17					41

\*top slab 8.0 in.

6 ft x 5 ft x 7 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in. / ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2*	0.23	0.68	0.33	0.17	0.32	0.19	0.56	0.17	
2<3	0.20	0.34	0.35	0.17					52
3-5	0.17	0.24	0.25	0.17					48

\*top slab 8.0 in.

6 ft x 6 ft x 7 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2*	0.21	0.72	0.37	0.17	0.34	0.19	0.55	0.17	
2<3	0.18	0.37	0.38	0.17					52
3-5	0.17	0.26	0.28	0.17					52

\*top slab 8.0 in.

7 ft x 2 ft x 8 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.38	0.60	0.26	0.19	0.22	0.19	0.75	0.19	
2<3	0.38	0.24	0.24	0.19					46
3-5	0.27	0.19	0.19	0.19					44

7 ft x 3 ft x 8 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.36	0.57	0.32	0.19	0.25	0.19	0.71	0.19	
2<3	0.33	0.29	0.30	0.19					44
3-5	0.23	0.21	0.21	0.19					42

7 ft x 4 ft x 8 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.34	0.61	0.37	0.19	0.27	0.19	0.70	0.19	
2<3	0.29	0.34	0.34	0.19					44
3-5	0.21	0.24	0.25	0.19					42

7 ft x 5 ft x 8 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.32	0.65	0.42	0.19	0.30	0.19	0.69	0.19	
2<3	0.26	0.37	0.38	0.19					49
3-5	0.19	0.27	0.28	0.19					46

7 ft x 6 ft x 8 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.29	0.69	0.46	0.19	0.32	0.19	0.67	0.19	
2<3	0.23	0.40	0.42	0.19					59
3-5	0.19	0.29	0.30	0.19					55

7 ft x 7 ft x 8 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.27	0.73	0.50	0.19	0.34	0.19	0.65	0.19	
2<3	0.21	0.43	0.45	0.19					59
3-5	0.19	0.31	0.33	0.19					59

8 ft x 2 ft x 8 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.47	0.50	0.29	0.19	0.23	0.19	0.61	0.19	
2<3	0.51	0.30	0.31	0.19					50
3-5	0.36	0.22	0.22	0.19					48

8 ft x 3 ft x 8 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.43	0.49	0.35	0.19	0.26	0.19	0.58	0.19	
2<3	0.45	0.36	0.37	0.19					48
3-5	0.32	0.26	0.27	0.19					45

8 ft x 4 ft x 8 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.40	0.52	0.40	0.19	0.29	0.19	0.57	0.19	
2<3	0.40	0.42	0.43	0.19					45
3-5	0.28	0.30	0.31	0.19					45

8 ft x 5 ft x 8 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.37	0.56	0.45	0.19	0.31	0.19	0.56	0.19	
2<3	0.36	0.46	0.47	0.19					48
3-5	0.26	0.33	0.34	0.19					45

8 ft x 6 ft x 8 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.34	0.61	0.49	0.19	0.33	0.19	0.56	0.19	
2<3	0.33	0.50	0.52	0.19					56
3-5	0.24	0.36	0.37	0.19					50

8 ft x 7 ft x 8 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.32	0.65	0.53	0.19	0.35	0.19	0.56	0.19	
2<3	0.30	0.53	0.56	0.19					65
3-5	0.22	0.38	0.40	0.19					61

8 ft x 8 ft x 8 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.30	0.69	0.57	0.19	0.36	0.19	0.55	0.19	
2<3	0.28	0.56	0.59	0.19					65
3-5	0.20	0.40	0.43	0.19					65

9 ft x 2 ft x 9 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.46	0.35	0.26	0.22	0.22	0.22	0.47	0.22	
2<3	0.58	0.32	0.32	0.22					55
3-5	0.41	0.23	0.23	0.22					52

9 ft x 3 ft x 9 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.42	0.35	0.32	0.22	0.23	0.22	0.47	0.22	
2<3	0.52	0.38	0.39	0.22					52
3-5	0.37	0.27	0.28	0.22					49

9 ft x 4 ft x 9 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.38	0.38	0.36	0.22	0.25	0.22	0.47	0.22	
2<3	0.47	0.44	0.45	0.22					52
3-5	0.33	0.31	0.32	0.22					49



9 ft x 5 ft x 9 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in. / ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.35	0.41	0.41	0.22	0.28	0.22	0.47	0.22	
2<3	0.43	0.49	0.50	0.22					49
3-5	0.30	0.35	0.36	0.22					49

9 ft x 6 ft x 9 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in. / ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.32	0.44	0.44	0.22	0.29	0.22	0.47	0.22	
2<3	0.39	0.53	0.54	0.22					55
3-5	0.28	0.38	0.39	0.22					52

9 ft x 7 ft x 9 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in. / ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.30	0.46	0.48	0.22	0.31	0.22	0.45	0.22	
2<3	0.36	0.56	0.59	0.22					64
3-5	0.26	0.40	0.42	0.22					58

9 ft x 8 ft x 9 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.28	0.49	0.52	0.22	0.33	0.22	0.45	0.22	
2<3	0.33	0.60	0.63	0.22					72
3-5	0.24	0.43	0.45	0.22					72

9 ft x 9 ft x 9 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.27	0.51	0.55	0.22	0.34	0.22	0.45	0.22	
2<3	0.31	0.63	0.66	0.22					72
3-5	0.23	0.45	0.48	0.22					72

10 ft x 2 ft x 10 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.46	0.29	0.24	0.24	0.24	0.24	0.34	0.24	
2<3	0.66	0.33	0.34	0.24					59
3-5	0.46	0.24	0.24	0.24					59

10 ft x 3 ft x 10 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.44	0.33	0.30	0.24	0.24	0.24	0.24	0.24	
2<3	0.59	0.40	0.41	0.24					59
3-5	0.42	0.29	0.29	0.24					56

10 ft x 4 ft x 10 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.40	0.36	0.35	0.24	0.24	0.24	0.24	0.24	
2<3	0.54	0.46	0.47	0.24					56
3-5	0.38	0.33	0.34	0.24					52

10 ft x 5 ft x 10 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.37	0.39	0.39	0.24	0.26	0.24	0.24	0.24	
2<3	0.49	0.51	0.52	0.24					52
3-5	0.35	0.36	0.38	0.24					52

10 ft x 6 ft x 10 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in. / ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.34	0.42	0.43	0.24	0.28	0.24	0.42	0.24	
2<3	0.45	0.55	0.57	0.24					56
3-5	0.33	0.40	0.41	0.24					52

10 ft x 7 ft x 10 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in. / ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.32	0.44	0.46	0.24	0.30	0.24	0.24	0.24	
2<3	0.42	0.59	0.62	0.24					59
3-5	0.31	0.42	0.45	0.24					56

10 ft x 8 ft x 10 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in. / ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.30	0.47	0.50	0.24	0.31	0.24	0.24	0.24	
2<3	0.39	0.63	0.66	0.24					75
3-5	0.29	0.45	0.48	0.24					66

10 ft x 9 ft x 10 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.28	0.49	0.53	0.24	0.33	0.24	0.24	0.24	
2<3	0.37	0.66	0.70	0.24					79
3-5	0.27	0.47	0.51	0.24					79

10 ft x 10 ft x 10 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.27	0.51	0.56	0.24	0.34	0.24	0.24	0.24	
2<3	0.35	0.69	0.74	0.24					79
3-5	0.26	0.50	0.54	0.24					79

11 ft x 2 ft x 11 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.50	0.27	0.26	0.26	0.26	0.26	0.26	0.26	
2<3	0.73	0.35	0.35	0.26					67
3-5	0.52	0.26	0.26	0.26					63

11 ft x 3 ft x 11 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.45	0.31	0.29	0.26	0.26	0.26	0.26	0.26	
2<3	0.67	0.42	0.43	0.26					63
3-5	0.47	0.30	0.31	0.26					60

11 ft x 4 ft x 11 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.41	0.34	0.33	0.26	0.26	0.26	0.26	0.26	
2<3	0.61	0.48	0.49	0.26					60
3-5	0.43	0.35	0.35	0.26					56

11 ft x 5 ft x 11 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.38	0.37	0.37	0.26	0.26	0.26	0.26	0.26	
2<3	0.56	0.53	0.54	0.26					56
3-5	0.40	0.38	0.39	0.26					56

11 ft x 6 ft x 11 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.35	0.40	0.40	0.26	0.26	0.26	0.26	0.26	
2<3	0.52	0.58	0.60	0.26					56
3-5	0.37	0.42	0.43	0.26					56

11 ft x 7 ft x 11 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.33	0.42	0.43	0.26	0.28	0.26	0.26	0.26	
2<3	0.48	0.62	0.64	0.26					60
3-5	0.35	0.44	0.47	0.26					56

11 ft x 8 ft x 11 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.31	0.45	0.47	0.26	0.30	0.26	0.26	0.26	
2<3	0.45	0.66	0.69	0.26					67
3-5	0.33	0.47	0.50	0.26					63

11 ft x 9 ft x 11 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.30	0.47	0.50	0.26	0.31	0.26	0.26	0.26	
2<3	0.43	0.69	0.73	0.26					85
3-5	0.31	0.49	0.53	0.26					70

11 ft x 10 ft x 11 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.28	0.49	0.53	0.26	0.33	0.26	0.26	0.26	
2<3	0.41	0.73	0.77	0.26					86
3-5	0.30	0.52	0.56	0.26					86

11 ft x 11 ft x 11 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.27	0.51	0.56	0.26	0.34	0.26	0.26	0.26	
2<3	0.39	0.76	0.81	0.26					86
3-5	0.29	0.55	0.59	0.26					86



12 ft x 2 ft x 12 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.51	0.29	0.29	0.29	0.29	0.29	0.29	0.29	
2<3	0.81	0.37	0.37	0.29					71
3-5	0.57	0.29	0.29	0.29					68

12 ft x 3 ft x 12 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.46	0.29	0.29	0.29	0.29	0.29	0.29	0.29	
2<3	0.74	0.44	0.44	0.29					68
3-5	0.53	0.32	0.32	0.29					64

12 ft x 4 ft x 12 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.42	0.33	0.31	0.29	0.29	0.29	0.29	0.29	
2<3	0.68	0.50	0.51	0.29					64
3-5	0.49	0.36	0.37	0.29					60

12 ft x 5 ft x 12 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.39	0.35	0.34	0.29	0.29	0.29	0.29	0.29	
2<3	0.63	0.55	0.56	0.29					64
3-5	0.45	0.40	0.41	0.29					60

12 ft x 6 ft x 12 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.36	0.38	0.38	0.29	0.29	0.29	0.29	0.29	
2<3	0.59	0.60	0.62	0.29					60
3-5	0.42	0.44	0.45	0.29					56

12 ft x 7 ft x 11 in.

Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.34	0.41	0.42	0.29	0.29	0.29	0.29	0.29	
2<3	0.55	0.65	0.67	0.29					60
3-5	0.40	0.47	0.49	0.29					60

12 ft x 8 ft x 12 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.32	0.43	0.45	0.29	0.29	0.29	0.29	0.29	
2<3	0.52	0.69	0.72	0.29					67
3-5	0.38	0.50	0.52	0.29					64

12 ft x 9 ft x 12 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.30	0.45	0.47	0.29	0.29	0.29	0.29	0.29	
2<3	0.49	0.73	0.76	0.29					75
3-5	0.36	0.52	0.56	0.29					68

12 ft x 10 ft x 12 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.29	0.48	0.50	0.29	0.30	0.29	0.29	0.29	
2<3	0.46	0.76	0.80	0.29					93
3-5	0.34	0.55	0.59	0.29					79

12 ft x 11 ft x 12 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.29	0.50	0.53	0.29	0.32	0.29	0.29	0.29	
2<3	0.44	0.79	0.85	0.29					91
3-5	0.33	0.57	0.62	0.29					79

12 ft x 12 ft x 12 in.									
Design Earth Cover, ft	Circumferential Reinforcement Areas, sq in./ ft								"M", in.
	As1	As2	As3	As4	As5	As6	As7	As8	
0<2	0.29	0.52	0.56	0.29	0.33	0.29	0.29	0.29	
2<3	0.43	0.83	0.89	0.29					93
3-5	0.32	0.60	0.65	0.29					93"

**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 <sup>1/</sup>	600-749	2002
	750 and up	2006
June 1, 2011 <sup>2/</sup>	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006
June 1, 2012 <sup>2/</sup>	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.

**CONTRAST PREFORMED PLASTIC PAVEMENT MARKING (BDE)**

Effective: November 1, 2017

Revise the first paragraph of Article 780.07(b) of the Standard Specifications to read:

“(b) Type B or C - Standard Application. Standard application of conventional preformed plastic pavement markings shall consist of applying the markings to the pavement surface or to the bottom of a groove recessed in the pavement surface as specified on the plans. Standard application of contrast preformed plastic pavement markings shall consist of applying the markings to the bottom of a groove recessed in the pavement surface. Both conventional and contrast preformed plastic pavement markings shall only be applied when the air temperature is at least 50 °F (10 °C) and rising and the pavement temperature is at least 70 °F (21 °C). However, application of the markings will not be allowed after October 15.”

Add the following paragraph after the fourth paragraph of Article 780.14 of the Standard Specifications:

“The applied line width specified for contrast pavement markings shall include both the white/yellow reflective portion and the black nonreflective portion of the marking.”

Revise the first paragraph of Article 1095.03 of the Standard Specifications to read:

“**1095.03 Preformed Plastic Pavement Markings.** The material shall consist of a white or yellow (as specified) weather resistant, reflective film meeting the requirements specified herein. Where contrast markings are specified, the white or yellow reflective film shall be bordered along both the left and right edges by a 1 1/2 in. (38 mm) wide black weather resistant, nonreflective film also meeting the requirements specified herein.”

Revise the table in Article 1095.03(a) of the Standard Specifications to read:

“Components	Minimum Percent By Weight	
	White or Yellow	Black
Resins and Plasticizers	20 %	20 %
Pigment and Fillers	30 %	30 %
Graded Glass Beads	25 %	- - “

Revise the first paragraph of Article 1095.03(h) of the Standard Specifications to read:

“Glass beads shall be uniformly distributed throughout the white or yellow portions of the material only. A top coating of beads shall be bonded to or directly embedded into the surface of the markings in order to produce immediate retroreflectivity.”

**DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)**

Effective: September 1, 2000

Revised: April 2, 2018

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 **22.00%** 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:

<http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index>.

BIDDING PROCEDURES. Compliance with this Special Provision is required prior to the award of the contract and the failure of the low bidder to comply will render the bid not responsive.

In order to assure the timely award of the contract, the low bidder shall submit:

- (a) The bidder shall submit a DBE Utilization Plan on completed Department forms SBE 2025 and 2026.
  - (1) The final Utilization Plan must be submitted within five calendar days after the date of the letting in accordance with subsection (a)(2) of Bidding Procedures herein.
  - (2) To meet the five day requirement, the bidder may send the Utilization Plan electronically by scanning and sending to **DOT.DBE.UP@illinois.gov** or faxing to (217) 785-1524. The subject line must include the bid Item Number and the Letting date. The Utilization Plan should be sent as one .pdf file, rather than multiple files and emails for the same Item Number. It is the responsibility of the bidder to obtain confirmation of email or fax delivery.

Alternatively, the Utilization Plan may be sent by certified mail or delivery service within the five calendar day period. If a question arises concerning the mailing date of a Utilization Plan, the mailing date will be established by the U.S. Postal Service postmark on the certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service when the Utilization Plan is received by the Department. It is the responsibility of the bidder to ensure the postmark or receipt date is affixed within the five days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Utilization Plan is to be submitted to:

Illinois Department of Transportation  
Bureau of Small Business Enterprises  
Contract Compliance Section  
2300 South Dirksen Parkway, Room 319  
Springfield, Illinois 62764

The Department will not accept a Utilization Plan if it does not meet the five day submittal requirement and the bid will be declared not responsive. In the event the bid is declared not responsive due to a failure to submit a Utilization Plan or failure to comply with the bidding procedures set forth herein, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty, and may deny authorization to bid the project if re-advertised for bids. The Department reserves the right to invite any other bidder to submit a Utilization Plan at any time for award consideration.

- (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 Utilization 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 scanned or 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 Utilization 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 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 subsection (c)(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. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period in order to cure the deficiency.
- (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 reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

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 DBE regular dealer or DBE 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 DBE Participation Commitment 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 or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, than 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) of this part. 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 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 1200 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 subcontractor 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) FINAL PAYMENT. 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 Resident 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. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

**DOWEL BAR INSERTER (BDE)**

Effective: January 1, 2017

Revised: January 1, 2018

Add the following to Article 420.03 of the Standard Specifications.

“(l) Mechanical Dowel Bar Inserter ..... 1103.20”

Revise the first paragraph of Article 420.05(b)(1) of the Supplemental Specifications to read:

“Preformed or Drilled Holes. If applicable, the tie bars shall be installed after the dowel bars have been tested with the MIT Scan-2 device according to Article 420.05(c)(2)b.2. The tie bars shall be installed with a nonshrink grout or chemical adhesive providing a minimum pull-out strength as follows.”

Revise Article 420.05(c) of the Standard Specifications to read:

“(c) Transverse Contraction Joints. Transverse contraction joints shall consist of planes of weakness created by sawing grooves in the surface of the pavement and shall include load transfer devices consisting of dowel bars. Transverse contraction joints shall be according to the following.”

Revise Article 420.05(c)(2) of the Standard Specifications to read:

“(2) Dowel Bars. Dowel Bars shall be installed parallel to the centerline of the pavement and parallel to the proposed pavement surface. Installation shall be according to one of the following methods.

- a. Dowel Bar Assemblies. The assembly shall act as a rigid unit with each component securely held in position relative to the other members of the assembly. The entire assembly shall be held securely in place by means of nails which shall penetrate the stabilized subbase. At least ten nails shall be used for each 10, 11, or 12 ft (3, 3.3, or 3.6 m) section of assembly.

Metal stakes shall be used instead of nails, with soil or granular subbase. The stakes shall loop over or attach to the top parallel spacer bar of the assembly and penetrate the subgrade or subbase at least 12 in. (300 mm).

At the location of each dowel bar assembly, the subgrade or subbase shall be reshaped and re-tamped when necessary.

Prior to placing concrete, any deviation of the dowel bars from the correct horizontal or vertical alignment (horizontal skew or vertical tilt) greater than 3/8 in. in 12 in (9 mm in 300 mm) shall be corrected and a light coating of oil shall be uniformly applied to all dowel bars.

Care shall be exercised in depositing the concrete at the dowel bar assemblies so the horizontal and vertical alignment will be retained.

- b. Dowel Bar Insertion. The dowel bars may be placed in the pavement slab with a mechanical dowel bar inserter (DBI) attached to a formless paver for pavements  $\geq 7.0$  in. (175 mm) in thickness. A light coating of oil shall be uniformly applied to all dowel bars.

The DBI shall insert the dowel bars with vibration into the plastic concrete after the concrete has been struck off and consolidated without deformation of the slab. After the bars have been inserted, the concrete shall be refinished and no voids shall exist around the dowel bars. The forward movement of the paver shall not be interrupted by the inserting of the dowel bars.

The location of each row of dowel bars shall be marked in a manner to facilitate where to insert the bars, and where to saw the transverse joint.

1. Placement Tolerances for Dowel Bars. The DBI shall place the dowel bars in the concrete pavement within the following tolerances.

- (a.) Longitudinal Translation (Mislocation). Longitudinal translation (mislocation) shall be defined as the position of the center of the dowel bar along the longitudinal axis, in relation to the sawed joint.

The quality control tolerance for longitudinal translation shall not exceed 2.0 in (50 mm). If this tolerance is exceeded, adjustments shall be made to the paving operation.

Any joint having two or more dowel bars with an embedment length less than 4.0 in. (100 mm) within 12 in. (300 mm) of the same wheelpath will be considered unacceptable. The left and right wheelpaths shall be determined by excluding the middle 2.5 ft (0.8 m) of the pavement lane, and by excluding the outer 1.0 ft (0.3 m) measured from each pavement lane edge. Any joint having an average dowel bar embedment length less than 5.25 in. (130 mm) will also be considered unacceptable. Embedment length shall be defined as the length of dowel bar embedded on the short side of the sawed joint. An unacceptable joint shall be replaced with a minimum of 6 ft (1.8 m) of pavement centered over the joint according to Section 442 for Class B patches.

- (b.) Horizontal Translation (Mislocation). Horizontal translation (mislocation) shall be defined as the difference in the actual dowel bar location parallel to the longitudinal or edge joint from its theoretical position as shown on the plans.

The quality control tolerance for horizontal translation shall not exceed 2.0 in. (50 mm). If this tolerance is exceeded, adjustments shall be made to the paving operation.

Any joint having a dowel bar with a translation greater than 4.0 in. (100 mm) will be considered unacceptable, but may remain in place unless the Engineer determines the joint will not function. If the joint is unable to remain in place, the joint shall be replaced with a minimum of 6 ft (1.8 m) of pavement centered over the joint according to Section 442 for Class B patches.

- (c.) Vertical Translation (Mislocation). Vertical translation (mislocation) shall be defined as the difference in the vertical position of the dowel bar relative to the theoretical midpoint of the slab.

The quality control tolerance for vertical translation shall be as shown in the following table. If these tolerances are exceeded, adjustments shall be made to the paving operation.

Pavement Thickness	Dowel Bar Diameter	Vertical Translation Tolerance Above Midpoint	Vertical Translation Tolerance Below Midpoint
≥7 in. to <8 in. (≥175 mm to <200 mm)	1.25 in. (31 mm)	0.25 in. (6 mm)	0.5 in. (13 mm)
≥8 in. to <9 in. (≥200 mm to <225 mm)	1.50 in. (38 mm)	0.25 in. (6 mm)	0.5 in. (13 mm)
≥9 in. to <10 in. (≥225 mm to <250 mm)	1.50 in. (38 mm)	0.75 in. (19 mm)	0.75 in. (19 mm)
≥10 in. (≥250 mm)	1.50 in. (38 mm)	0.75 in. (19 mm)	1.0 in. (25 mm)

Any joint having a dowel bar with top concrete cover less than  $T/3$ , where T is slab thickness, will be considered unacceptable. Any joint having 2 or more dowel bars with bottom concrete cover less than 2.0 in. (50 mm) will also be considered unacceptable. An unacceptable joint shall be replaced with a minimum of 6 ft (1.8 m) of pavement according to Section 442 for Class B patches.

(d.) Vertical Tilt or Horizontal Skew (Misalignment). Vertical tilt or horizontal skew (misalignment) shall be defined as the difference in position of the dowel bar ends with respect to each other. Vertical tilt is measured in the vertical axis whereas horizontal skew is measured in the horizontal axis. Misalignment shall be measured in terms of a joint score. The joint score shall be defined as the degree of misalignment evaluated for a single transverse joint for each lane of pavement. The joint score shall be determined as follows:

$$Joint\ Score = \left( 1 + \left( \frac{x}{x-n} \right) \sum_{i=1}^{x-n} W_i \right)$$

where:

$W_i$  = weighting factor (Table 1) for dowel  $i$

$x$  = number of dowels in a single joint

$n$  = number of dowels excluded from the joint score calculation due to measurement interference

*Single Dowel Misalignment* – The degree of misalignment applicable to a single dowel bar, calculated as:

$$Single\ Dowel\ Misalignment = \sqrt{(Horizontal\ Skew)^2 + (Vertical\ Tilt)^2}$$

Table 1. Weighting Factors in Joint Score Determination	
Single Dowel Bar Misalignment (SDM)	W, Weighting Factor
SDM ≤ 0.6 in. (15 mm)	0
0.6 in. (15 mm) < SDM ≤ 0.8 in. (20 mm)	2
0.8 in. (20 mm) < SDM ≤ 1 in. (25 mm)	4
1 in. (25 mm) < SDM ≤ 1.5 in. (38 mm)	5
1.5 in. (38 mm) < SDM	10

The quality control tolerance for vertical tilt or horizontal skew shall not exceed 0.6 in. (15 mm). If the tolerance is exceeded for either one, adjustments shall be made to the paving operation.

Any joint having a dowel bar with a vertical tilt or horizontal skew greater than 1.5 in. (38 mm) shall be cut. If more than one dowel bar is required to be cut in the joint, the joint will be considered unacceptable and shall be replaced with a minimum of 6 ft (1.8 m) of pavement centered over the joint according to Section 442 for Class B patches.

Single dowel bar misalignment shall be controlled to provide the joint scores shown in the following table.

Number of Dowel Bars in the Joint	Maximum Joint Score
< 5	4
≥ 5 but ≤ 9	8
> 9	12

A joint score greater than the specified maximum will be considered locked. Three consecutive joints with a score greater than the specified maximum total score will all be considered unacceptable.

Three consecutive locked joints shall be corrected by selecting one joint and cutting a dowel bar. Preference shall be given to cutting a dowel bar within the middle 2.5 ft (0.8 m) of the pavement lane to avoid the wheelpaths. If none of the three locked joints will have a joint score less than or equal to the specified maximum after selecting one dowel bar to cut, one of the joints shall be replaced with a minimum of 6 ft (1.8 m) of pavement centered over the joint according to Section 442 for Class B patches.

(e.) For unacceptable work, the Contractor may propose alternative repairs for consideration by the Engineer.

2. Testing of Dowel Bar Placement. The placement of the dowel bars shall be tested within 24 hours of paving with a calibrated MIT Scan-2 device according to "Use of Magnetic Tomography Technology to Evaluate Dowel Placement" (Publication No. FHWA-IF-06-006) by the Federal Highway Administration.

A trained operator shall perform the testing, and all testing shall be performed in the presence of the Engineer. The device shall be calibrated to the type and size dowel bar used in the work according to the manufacturer's instructions. Calibration documentation shall be provided to the Engineer prior to construction. The device shall be recalibrated and/or validate readings as required by the Engineer. The device may be utilized as a process control and make necessary adjustments to ensure the dowel bars are placed in the correct location.

(a.) Test Section. Prior to start of production paving, a test section consisting of 30 transverse joints shall be constructed. The test section may be performed on the actual pavement, but production paving shall not begin until an acceptable test section has been constructed. The test section will be considered acceptable when all of the following are met:

- (1.) 90 percent of the dowel bars meet the quality control tolerance for longitudinal, horizontal, or vertical translation (mislocation);

- (2.) 90 percent of the dowel bars meet the quality control tolerance for vertical tilt or horizontal skew deviation (misalignment); and
- (3.) none of the joints are considered unacceptable prior to a corrective measure for mislocation or misalignment.

If the test section fails, another test section consisting of 30 joints shall be constructed.

The test section requirement may be waived by the Engineer if the Contractor has constructed an acceptable test section and successfully used the DBI on a Department contract within the same calendar year.

- (b.) Production Paving. After the test section is approved, production paving may begin. The mislocation and misalignment of each dowel bar for the first ten joints constructed, and every tenth joint thereafter, shall be tested.

If two consecutive days of paving result in 5 percent or more of the joints on each day being unacceptable prior to a corrective measure, production paving shall be discontinued and a new test section shall be constructed.

If any joint is found to be unacceptable prior to a corrective measure, testing of additional joints on each side of the unacceptable joint shall be performed until acceptable joints are found.

- (c.) Test Report. Test reports shall be provided to the Engineer within two working days of completing each day's testing. The test report shall include the following.

- (1.) Contract number, placement date, county-route-section, direction of traffic, scan date, Contractor, and name of individual performing the tests.
- (2.) Provide the standard report generated from the on-board printer of the imaging technology used for every dowel and joint measured.
- (3.) For every dowel measured, provide the joint identification number, lane number and station, dowel bar number or x-location, direction of testing and reference joint location/edge location, longitudinal translation, horizontal translation, vertical translation, vertical tilt, and horizontal skew.
- (4.) Identify each dowel bar with a maximum longitudinal, horizontal, or vertical translation that has been exceeded. Identify each dowel bar with a maximum vertical tilt or horizontal skew deviation that has been exceeded.



- (5.) Joint Score Details: Provide the joint identification number, lane number, station, and calculated joint score for each joint.
  - (6.) Locked Joint Identification: Identify each joint where the maximum joint score is exceeded.
- (d.) Exclusions. Exclude the following from dowel bar mislocation and misalignment measurements.
- (1.) Transverse construction joints (headers).
  - (2.) Dowel bars within 24 in. (610 mm) of metallic manholes, inlets, metallic castings, or other nearby or underlying steel reinforced objects.
  - (3.) The outside dowel bar when tie bars are installed with mechanical equipment in fresh concrete. For tie bar installations involving preformed or drilled holes, installation of the tie bar shall be performed after testing with the MIT Scan-2 device.
  - (4.) Joints located directly under high voltage power lines.
  - (5.) Subject to the approval of the Engineer, any other contributors to magnetic interference.
- (e.) Deficiency Deduction. When the Contractor has cut 25 dowel bars to correct unacceptable joints, the Contractor shall be liable and shall pay to the Department a deficiency deduction of \$500.00 for the cost of the bars. Thereafter, an additional deficiency deduction of \$20.00 for each additional bar cut will be assessed.”

Add the following to Section 1103 of the Standard Specifications.

**“1103.20 Mechanical Dowel Bar Inserter.** The mechanical dowel bar inserter (DBI) shall be self-contained and supported on the formless paver with the ability to move separately from the paver. The DBI shall be equipped with insertion forks along with any other devices necessary for finishing the concrete the full width of the pavement. The insertion forks shall have the ability to vibrate at a minimum frequency of 3000 VPM.”

## **EQUIPMENT PARKING AND STORAGE (BDE)**

Effective: November 1, 2017

Replace the first paragraph of Article 701.11 of the Standard Specifications with the following.

**“701.11 Equipment Parking and Storage.** During working hours, all vehicles and/or nonoperating equipment which are parked, two hours or less, shall be parked at least 8 ft (2.5 m) from the open traffic lane. For other periods of time during working and for all nonworking hours, all vehicles, materials, and equipment shall be parked or stored as follows.

- (a) When the project has adequate right-of-way, vehicles, materials, and equipment shall be located a minimum of 30 ft (9 m) from the pavement.
- (b) When adequate right-of-way does not exist, vehicles, materials, and equipment shall be located a minimum of 15 ft (4.5 m) from the edge of any pavement open to traffic.
- (c) Behind temporary concrete barrier, vehicles, materials, and equipment shall be located a minimum of 24 in. (600 mm) behind free standing barrier or a minimum of 6 in. (150 mm) behind barrier that is either pinned or restrained according to Article 704.04. The 24 in. or 6 in. measurement shall be from the base of the non-traffic side of the barrier.
- (d) Behind other man-made or natural barriers meeting the approval of the Engineer.”

## **GROOVING FOR RECESSED PAVEMENT MARKINGS (BDE)**

Effective: November 1, 2012

Revised: November 1, 2017

Description. This work shall consist of grooving the pavement surface in preparation for the application of recessed pavement markings.

Equipment. Equipment shall be according to the following.

- (a) Preformed Plastic Pavement Marking Installations. The grooving equipment shall have a free-floating saw blade cutting head equipped with gang-stacked diamond saw blades. The diamond saw blades shall be of uniform wear and shall produce a smooth textured surface. Any ridges in the groove shall have a maximum height of 15 mils (0.38 mm).
- (b) Liquid and Thermoplastic Pavement Marking Installations. The grooving equipment shall be equipped with either a free-floating saw blade cutting head or a free-floating grinder cutting head configuration with diamond or carbide tipped cutters and shall produce an irregular textured surface.

## CONSTRUCTION REQUIREMENTS

General. The Contractor shall supply the Engineer with a copy of the pavement marking material manufacturer's recommendations for constructing a groove.

Pavement Grooving Methods. The grooves for recessed pavement markings shall be constructed using the following methods.

- (a) Wet Cutting Head Operation. When water is required or used to cool the cutting head, the groove shall be flushed with high pressure water immediately following the cut to avoid build up and hardening of slurry in the groove. The pavement surface shall be allowed to dry for a minimum of 24 hours prior to the final cleaning of the groove and application of the pavement marking material.
- (b) Dry Cutting Head Operation. When used on HMA pavements, the groove shall be vacuumed or cleaned by blasting with high-pressure air to remove loose aggregate, debris, and dust generated during the cutting operation. When used on PCC pavements, the groove shall be flushed with high pressure water or shot blasted to remove any PCC particles that may have become destabilized during the grooving process. If high pressure water is used, the pavement surface shall be allowed to dry for a minimum of 24 hours prior to the final cleaning of the groove and application of the pavement marking material.

Pavement Grooving. Grooving shall not cause ravels, aggregate fractures, spalling or disturbance of the joints to the underlying surface of the pavement. Grooves shall be cut into the pavement prior to the application of the pavement marking material. Grooves shall be cut such that the width is 1 in. (25 mm) greater than the width of the pavement marking line as specified on the plans. Grooves for letters and symbols shall be cut in a square or rectangular shape so that the entire marking will fit within the limits of the grooved area. The position of the edge of the grooves shall be a minimum of 2 in. (50 mm) from the edge of all longitudinal joints. The depth of the groove shall not be less than the manufacturer's recommendations for the pavement marking material specified, but shall be installed to a minimum depth of 110 mils (2.79 mm) and a maximum depth of 200 mils (5.08 mm) for pavement marking tapes thermoplastic markings and a minimum depth of 40 mils (1.02 mm) and a maximum depth of 80 mils (2.03 mm) for liquid markings. The cutting head shall be operated at the appropriate speed in order to prevent undulation of the cutting head and grooving at an inconsistent depth.

At the start of grooving operations, a 50 ft (16.7 m) test section shall be installed and depth measurements shall be made at 10 ft (3.3 m) intervals within the test section. The individual depth measurements shall be within the allowable ranges according to this Article. If it is determined the test section has not been grooved at the appropriate depth or texture, adjustments shall be made to the cutting head and another 50 ft (16.7 m) test section shall be installed and checked. This process shall continue until the test section meets the requirements of this Article.

For new HMA pavements, grooves shall not be installed within 10 days of the placement of the final course of pavement.

Final Cleaning. Immediately prior to the application of the pavement marking material or primer sealer, the groove shall be cleaned with high-pressure air blast.

Method of Measurement. This work will be measured for payment in place, in feet (meter) for the groove width specified.

Grooving for letter, numbers and symbols will be measured in square feet (square meters).

Basis of Payment. This work will be paid for at the contract unit price per foot (meter) for GROOVING FOR RECESSED PAVEMENT MARKING of the groove width specified, and per square foot (square meter) for GROOVING FOR RECESSED PAVEMENT MARKING, LETTERS AND SYMBOLS.

The following shall only apply when preformed plastic pavement markings are to be recessed:

Add the following paragraph after the first paragraph of Article 780.07 of the Standard Specifications.

“The markings shall be capable of being applied in a grooved slot on new and existing portland cement concrete and HMA surfaces, by means of a pressure-sensitive, precoated adhesive, or liquid contact cement which shall be applied at the time of installation. A primer sealer shall be applied with a roller and shall cover and seal the entire bottom of the groove. The primer sealer shall be recommended by the manufacturer of the pavement marking material and shall be compatible with the material being used. The Contractor shall install the markings in the groove as soon as possible after the primer sealer cures according to the manufacturer’s recommendations. The markings placed in the groove shall be rolled and tamped into the groove with a roller or tamper cart cut to fit the groove and loaded with or weighing at least 200 lb (90kg). Vehicle tires shall not be used for tamping. The Contractor shall roll and tamp the material with a minimum of 6 passes to prevent easy removal or peeling.”

**HOT-MIX ASPHALT - DENSITY TESTING OF LONGITUDINAL JOINTS (BDE)**

Effective: January 1, 2010

Revised: April 1, 2016

Description. This work shall consist of testing the density of longitudinal joints as part of the quality control/quality assurance (QC/QA) of hot-mix asphalt (HMA). Work shall be according to Section 1030 of the Standard Specifications except as follows.

Quality Control/Quality Assurance (QC/QA). Delete the second and third sentence of the third paragraph of Article 1030.05(d)(3) of the Standard Specifications.

Add the following paragraphs to the end of Article 1030.05(d)(3) of the Standard Specifications:

“Longitudinal joint density testing shall be performed at each random density test location. Longitudinal joint testing shall be located at a distance equal to the lift thickness or a minimum of 4 in. (100 mm), from each pavement edge. (i.e. for a 5 in. (125 mm) lift the near edge of the density gauge or core barrel shall be within 5 in. (125 mm) from the edge of pavement.) Longitudinal joint density testing shall be performed using either a correlated nuclear gauge or cores.

a. Confined Edge. Each confined edge density shall be represented by a one-minute nuclear density reading or a core density and shall be included in the average of density readings or core densities taken across the mat which represents the Individual Test.

b. Unconfined Edge. Each unconfined edge joint density shall be represented by an average of three one-minute density readings or a single core density at the given density test location and shall meet the density requirements specified herein. The three one-minute readings shall be spaced 10 ft (3 m) apart longitudinally along the unconfined pavement edge and centered at the random density test location.”

Revise the Density Control Limits table in Article 1030.05(d)(4) of the Standard Specifications to read:

“Mixture Composition	Parameter	Individual Test (includes confined edges)	Unconfined Edge Joint Density Minimum
IL-4.75	Ndesign = 50	93.0 – 97.4% <sup>1/</sup>	91.0%
IL-9.5	Ndesign = 90	92.0 – 96.0%	90.0%
IL-9.5,IL-9.5L	Ndesign < 90	92.5 – 97.4%	90.0%
IL-19.0	Ndesign = 90	93.0 – 96.0%	90.0%
IL-19.0, IL-19.0L	Ndesign < 90	93.0 <sup>2/-</sup> 97.4%	90.0%
SMA	Ndesign = 50 & 80	93.5 – 97.4%	91.0%”

## HOT MIX ASPHALT – QUALITY CONTROL FOR PERFORMANCE (BDE)

Effective: April 1, 2017

Revised: November 1, 2017

Description. This special provision describes the procedures for production, placement and payment of hot-mix asphalt (HMA) under the quality control for performance (QCP) program; as well as the requirements for intelligent compaction. This special provision shall apply to the HMA mixtures specified in the plans. This work shall be according to the Standard Specifications except as modified herein.

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

### 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 (Field 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 mixture lot shall begin once an acceptable test strip has been completed and the adjusted job mix formula has been determined. If the test strip is waived, a mixture lot 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 sublot for Field VMA, voids, and dust/AC shall be a maximum of 1000 tons (910 metric tons).
  - (1) If the remaining quantity is greater than 200 tons (180 metric tons) but less than 1000 tons (910 metric tons), the last mixture sublot will be that quantity.
  - (2) If the remaining quantity is 200 tons (180 metric tons) or less, the quantity shall be combined with the previous mixture sublot.
- (f) Density Interval. Density intervals shall be every 0.2 miles (320 m) for lift thicknesses of 3 in. (75 mm) or less and 0.1 miles (160 m) for lift thicknesses greater than 3 in. (75 mm). If a density interval is less than 200 ft (60 m), it will be combined with the previous density interval.
- (g) Density Sublot. A density sublot shall be the average of five consecutive density intervals.
  - (1) If less than three density intervals remain outside a density sublot, they shall be included in the previous density sublot.
  - (2) If three or more density intervals remain, they shall be considered a density sublot.
- (h) Density Test. A density test shall consist of a core taken at a random location within each density interval.

When establishing the target density, the HMA maximum theoretical gravity ( $G_{mm}$ ) shall be based on the running average of four Department test results. Initial  $G_{mm}$  shall be based on the average of the first four test results. If less than four  $G_{mm}$  results are available, an average of all available Department  $G_{mm}$  test results shall be used.

Pre-Production Meeting. The Engineer will schedule a pre-production meeting prior to the start of production. The HMA QC Plan, test frequencies, and responsibilities of all parties involved in testing will be addressed. The Engineer will provide the random locations, tonnages, and sublot selected from each lot in a sealed envelope for the Contractor to sign at the pre-production meeting or prior to paving. The locations, tonnages, and sublot selected from each lot may be adjusted due to field conditions according to the Department's Manual of Test Procedures for Materials "PFP and QCP Hot-Mix Asphalt Random Jobsite Sampling" and "PFP and QCP Random Density Procedure". The signed sealed envelope will be given to the Contractor after paving is complete, along with documentation of any adjustments. Personnel attending the meetings may include the following:

- (a) Resident Engineer
- (b) District Mixture Control Representative
- (c) QC Manager
- (d) Contractor Paving Superintendent
- (e) Any consultant involved in any part of the HMA sampling or testing on this project

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 Table 1.

Table 1

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.

Intelligent Compaction. When a “Number of Roller Passes” is specified in the HMA Mixture Requirements table on the plans, the Contractor may opt to use intelligent compaction (IC) in lieu of density testing. Coring according to the Department’s Manual of Test Procedures for Materials “PFP and QCP Random Density Procedure” is required and will be used for pay adjustments for density sublots that are not in compliance with the contract specifications.

The IC equipment shall be mounted on the breakdown roller(s) and shall record GPS location data, roller pass counts, roller speeds, and HMA mat temperatures. Each day, the accuracy of the GPS and temperature data shall be verified and documented. If the verification fails or is not performed, the IC data will not be used for the affected density sublots.

The IC data for each density subplot shall be analyzed using Veta software to determine the average roller speed, percent roller coverage, and average mat surface temperature for the final roller pass. The Contractor shall submit these summary results, and if requested the raw data from the IC equipment and the data analysis software, to the Engineer within 24 hours of each day of paving using IC.



The required number of roller passes shall be as specified on the plans. The roller speeds shall be according to Article 406.07. The minimum roller coverage shall be 90 percent. The average HMA mat temperature for the initial break down roller pass shall be according to Table 2.

Table 2

<b>Asphalt Mixture Type</b>	<b>Temperature Range (°F (°C))</b>
Warm Mix Asphalt	215-275 °F (102-135 °C)
IL-4.75	300-350 °F (155-175 °C)
HMA using SBS PG76-22	300-350 °F (155-175 °C)
HMA using SBS PG76-28	300-350 °F (155-175 °C)
HMA using SBS PG70-22	300-350 °F (155-175 °C)
HMA using SBS PG70-28	300-350 °F (155-175 °C)
Other HMA not listed above	260-325 °F (125-165 °C)

Quality Assurance (QA) by the Engineer. Quality Assurance by the Engineer will be as follows.

- (a) 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 Department's Manual of Test Procedures for Materials "PFP Hot-Mix Asphalt Random Jobsite Sampling Procedure".
- (b) Density: After final rolling, the Engineer will identify the random core locations within each density testing interval according to the Department's Manual of Test Procedures for Materials "PFP and QCP Random Density Procedure".

The Contractor shall cut the 4 in. (100 mm) cores within the same day and prior to opening to traffic unless otherwise approved by 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 in. (6 mm) 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 select at random one split sample from each lot for testing of 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 unless intelligent compaction is used. 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 ten working days from receipt of secured cores and split mixture samples and after the last subplot from each lot.

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, at 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 QA results do not meet the precision limits listed in Table 3, the Department will verify the results by retesting the retained split sample. The retest will replace the original results.

If the QA results do not meet the 100 percent subplot pay factor limits or still do not compare to QC results within the precision limits in Table 3, after retesting the Engineer will test all split mix samples for the lot.

Table 3

Test Parameter	Limits of Precision
G <sub>mb</sub>	0.030
G <sub>mm</sub>	0.026
Field VMA	1.0 %

Acceptance by the Engineer. All of the Department's tests shall be within the acceptable limits listed in Table 4.

Table 4

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

1/ Based on minimum required VMA from mix design

2/ Does not apply to SMA.

3/ Acceptable density limits for IL-9.5FG placed less than 1 1/4 in. (32 mm) 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 test results for each mixture according to the Department's Manual of Test Procedures for Materials "QCP Pay Calculation" document.

If intelligent compaction is successfully implemented, the Contractor will receive 100 percent for the density pay factor in Equation 1 of the “QCP Pay Calculation” document for each applicable HMA mixture; otherwise, the density tests and pay adjustments will apply. The pay factor for each density subplot will be based upon either intelligent compaction or density tests and the two will not be mixed.

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 mixture subplot is outside of this range, the Department will test the remaining sublots for dust/AC pay adjustment.

Table 5

Dust/AC Pay Adjustment Table <sup>1/</sup>	
Range	Deduct / subplot
$0.6 \leq X \leq 1.2$	\$0
$0.5 \leq X < 0.6$ or $1.2 < X \leq 1.4$	\$1000
$0.4 \leq X < 0.5$ or $1.4 < X \leq 1.6$	\$3000
$X < 0.4$ or $X > 1.6$	Shall be removed and replaced

1/ Does not apply to SMA.

**HOT-MIX ASPHALT – TACK COAT (BDE)**

Effective: November 1, 2016

Revise Article 1032.06(a) of the Standard Specifications to read:

“(a) Anionic Emulsified Asphalt. Anionic emulsified asphalts shall be according to AASHTO M 140. SS-1h emulsions used as a tack coat shall have the cement mixing test waived.”

**LIGHTS ON BARRICADES (BDE)**

Effective: January 1, 2018

Revise Article 701.16 of the Standard Specifications to read:

“**701.16 Lights.** Lights shall be used on devices as required in the plans, the traffic control plan, and the following table.

Circumstance	Lights Required
Daylight operations	None
First two warning signs on each approach to the work involving a nighttime lane closure and “ROUGH GROOVED SURFACE” (W8-I107) signs	Flashing mono-directional lights
Devices delineating isolated obstacles, excavations, or hazards at night (Does not apply to patching)	Flashing bi-directional lights
Devices delineating obstacles, excavations, or hazards exceeding 100 ft (30 m) in length at night (Does not apply to widening)	Steady burn bi-directional lights
Channelizing devices for nighttime lane closures on two-lane roads	None
Channelizing devices for nighttime lane closures on multi-lane roads	None
Channelizing devices for nighttime lane closures on multi-lane roads separating opposing directions of traffic	None
Channelizing devices for nighttime along lane shifts on multilane roads	Steady burn mono-directional lights
Channelizing devices for night time along lane shifts on two lane roads	Steady burn bi-directional lights
Devices in nighttime lane closure tapers on Standards 701316 and 701321	Steady burn bi-directional lights
Devices in nighttime lane closure tapers	Steady burn mono-directional lights
Devices delineating a widening trench	None
Devices delineating patches at night on roadways with an ADT less than 25,000	None
Devices delineating patches at night on roadways with an ADT of 25,000 or more	None

Batteries for the lights shall be replaced on a group basis at such times as may be specified by the Engineer.”

Delete the fourth sentence of the first paragraph of Article 701.17(c)(2) of the Standard Specifications.

Revise the first paragraph of Article 603.07 of the Standard Specifications to read:

“**603.07 Protection Under Traffic.** After the casting has been adjusted and Class SI concrete has been placed, the work shall be protected by a barricade for at least 72 hours.”

**MANHOLES, VALVE VAULTS, AND FLAT SLAB TOPS (BDE)**

Effective: January 1, 2018

Revised: March 2, 2018

Description. Manholes, valve vaults, and flat slab tops manufactured according to the current or previous Highway Standards listed below will be accepted on this contract:

<u>Product</u>	<u>Current Standard</u>	<u>Previous Standard</u>
Precast Manhole Type A, 4' (1.22 m) Diameter	602401-04	602401-03
Precast Manhole Type A, 5' (1.52 m) Diameter	602402	602401-03
Precast Manhole Type A, 6' (1.83 m) Diameter	602406-08	602406-07
Precast Manhole Type A, 7' (2.13 m) Diameter	602411-06	602411-05
Precast Manhole Type A, 8' (2.44 m) Diameter	602416-06	602416-05
Precast Manhole Type A, 9' (2.74 m) Diameter	602421-06	602421-05
Precast Manhole Type A, 10' (3.05 m) Diameter	602426	n/a
Precast Valve Vault Type A, 4' (1.22 m) Diameter	602501-03	602501-02
Precast Valve Vault Type A, 5' (1.52 m) Diameter	602506	602501-02
Precast Reinforced Concrete Flat Slab Top	602601-05	602601-04

When manufacturing to the current standards, the following revisions to the Standard Specifications shall apply:

Revise Article 602.02(g) of the Standard Specifications to read:

“(g) Structural Steel (Note 4)..... 1006.04

Note 4. All components of the manhole joint splice shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable.”

Add the following to Article 602.02 of the Standard Specifications:

“(s) Anchor Bolts and Rods (Note 5) ..... 1006.09

Note 5. The threaded rods for the manhole joint splice shall be according to the requirements of ASTM F 1554, Grade 55, (Grade 380).”

Add the following paragraph after the first paragraph of Article 602.07 of the Standard Specifications:

“Threaded rods connecting precast sections shall be brought to a snug tight condition.”

Revise the second paragraph of Article 1042.10 of the Standard Specifications to read:

“Catch basin Types A, B, C, and D; Manhole Type A; Inlet Types A and B; Drainage Structures Types 1, 2, 3, 4, 5, and 6; Valve Vault Type A; and reinforced concrete flat slab top (Highway Standard 602601) shall be according to AASHTO M 199 (M 199M), except the minimum wall thickness shall be 3 in. (75 mm). Additionally, catch basins, inlets, and drainage structures shall have a minimum concrete compressive strength of 4500 psi (31,000 kPa) at 28 days and manholes, valve vaults, and reinforced concrete flat slab tops shall have a minimum concrete compressive strength of 5000 psi (34,500 kPa) at 28 days.”

**PAVEMENT MARKING REMOVAL (BDE)**

Effective: July 1, 2016

Revise Article 783.02 of the Standard Specifications to read:

“**783.02 Equipment.** Equipment shall be according to the following.

Item	Article/Section
(a) Grinders (Note 1)	
(b) Water Blaster with Vacuum Recovery .....	1101.12

Note 1. Grinding equipment shall be approved by the Engineer.”

Revise the first paragraph of Article 783.03 of the Standard Specifications to read:

“**783.03 Removal of Conflicting Markings.** Existing pavement markings that conflict with revised traffic patterns shall be removed. If darkness or inclement weather prohibits the removal operations, such operations shall be resumed the next morning or when weather permits. In the event of removal equipment failure, such equipment shall be repaired, replaced, or leased so removal operations can be resumed within 24 hours.”

Revise the first and second sentences of the first paragraph of Article 783.03(a) of the Standard Specifications to read:

“The existing pavement markings shall be removed by the method specified and in a manner that does not materially damage the surface or texture of the pavement or surfacing. Small particles of tightly adhering existing markings may remain in place, if in the opinion of the Engineer, complete removal of the small particles will result in pavement surface damage.”

Revise the first paragraph of Article 783.04 of the Standard Specifications to read:

“**783.04 Cleaning.** The roadway surface shall be cleaned of debris or any other deleterious material by the use of compressed air or water blast.”

Revise the first paragraph of Article 783.06 of the Standard Specifications to read:

**“783.06 Basis of Payment.** This work will be paid for at the contract unit price per each for RAISED REFLECTIVE PAVEMENT MARKER REMOVAL, or at the contract unit price per square foot (square meter) for PAVEMENT MARKING REMOVAL – GRINDING and/or PAVEMENT MARKING REMOVAL – WATER BLASTING.”

Delete Article 1101.13 from the Standard Specifications.

#### **PAYMENTS TO SUBCONTRACTORS (BDE)**

Effective: November 2, 2017

Add the following to the end of the fourth paragraph of Article 109.11 of the Standard Specifications:

“If reasonable cause is asserted, written notice shall be provided to the applicable subcontractor and/or material supplier and the Engineer within five days of the Contractor receiving payment. The written notice shall identify the contract number, the subcontract or material purchase agreement, a detailed reason for refusal, the value of payment being withheld, and the specific remedial actions required of the subcontractor and/or material supplier so that payment can be made.”

#### **PORTABLE CHANGEABLE MESSAGE SIGNS (BDE)**

Effective: November 1, 2016

Revised: April 1, 2017

Revise the second paragraph of Article 701.20(h) of the Standard Specifications to read:

“For all other portable changeable message signs, this work will be paid for at the contract unit price per calendar day for each sign as CHANGEABLE MESSAGE SIGN.”

Revise this second sentence of the first paragraph of Article 1106.02(i) of the Standard Specifications to read:

“The message panel shall be a minimum of 7 ft (2.1 m) above the edge of pavement in urban areas and a minimum of 5 ft (1.5 m) above the edge of pavement in rural areas, present a level appearance, and be capable of displaying up to eight characters in each of three lines at a time.”

**PORTLAND CEMENT CONCRETE (BDE)**

Effective: November 1, 2017

Revise the Air Content % of Class PP Concrete in Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

"TABLE 1. CLASSES OF CONCRETE AND MIX DESIGN CRITERIA		
Class of Conc.	Use	Air Content %
PP	Pavement Patching Bridge Deck Patching (10)	4.0 - 8.0"
	PP-1	
	PP-2	
	PP-3	
	PP-4	
	PP-5	

Revise Note (4) at the end of Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

“(4) For all classes of concrete, the maximum slump may be increased to 7 in (175 mm) when a high range water-reducing admixture is used. For Class SC, the maximum slump may be increased to 8 in. (200 mm). For Class PS, the maximum slump may be increased to 8 1/2 in. (215 mm) if the high range water-reducing admixture is the polycarboxylate type.”

**PORTLAND CEMENT CONCRETE SIDEWALK (BDE)**

Effective: August 1, 2017

Revise the first paragraph of Article 424.12 of the Standard Specifications to read:

“**424.12 Method of Measurement.** This work will be measured for payment in place and the area computed in square feet (square meters). Curb ramps, including side curbs and side flares, will be measured for payment as sidewalk. No deduction will be made for detectable warnings located within the ramp.”



**PREFORMED PLASTIC PAVEMENT MARKING TYPE D - INLAID (BDE)**

Effective: April 1, 2012

Revised: April 1, 2016

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 780.12 of the Standard Specifications to read:

“**780.12 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 780.12 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 780.14 of the Standard Specifications to read:

**“780.14 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.

<b>Color</b>	<b>R<sub>L</sub> 1.05/88.76</b>
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.”

**SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)**

Effective: April 2, 2018

Add the following to Section 109 of the Standard Specifications.

**“109.14 Subcontractor and Disadvantaged Business Enterprise Payment Reporting.**  
 The Contractor shall report all payments made to the following parties:

- (a) first tier subcontractors;
- (b) lower tier subcontractors affecting disadvantaged business enterprise (DBE) goal credit;
- (c) material suppliers or trucking firms that are part of the Contractor’s submitted DBE utilization plan.

The report shall be made through the Department’s on-line subcontractor payment reporting system within 21 days of making the payment.”

**SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)**

Effective: November 2, 2017

Replace the second paragraph of Article 109.12 of the Standard Specifications with the following:

“This mobilization payment shall be made at least 14 days prior to the subcontractor starting work. The amount paid shall be at the following percentage of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor’s work.

Value of Subcontract Reported on Form BC 260A	Mobilization Percentage
Less than \$10,000	25%
\$10,000 to less than \$20,000	20%
\$20,000 to less than \$40,000	18%
\$40,000 to less than \$60,000	16%
\$60,000 to less than \$80,000	14%
\$80,000 to less than \$100,000	12%
\$100,000 to less than \$250,000	10%
\$250,000 to less than \$500,000	9%
\$500,000 to \$750,000	8%
Over \$750,000	7%”

**SURFACE TESTING OF HOT-MIX ASPHALT OVERLAYS (BDE)**

Effective: January 1, 2013

Revised: April 1, 2016

Revise Article 406.03(h) of the Standard Specifications to read:

“(h) Pavement Surface Test Equipment ..... 1101.10”

Revise Article 406.11 of the Standard Specifications to read:

“**406.11 Surface Tests.** The finished surface of the pavement shall be tested for smoothness according to Article 407.09, except as follows:

One wheel track shall be tested per lane. Testing shall be performed 3 ft (1 m) from and parallel to the edge of the lane away from traffic.

SMOOTHNESS ASSESSMENT SCHEDULE (HMA Overlays)		
High-Speed Mainline Pavement Average Profile Index in./mile (mm/km)	Low-Speed Mainline Pavement Average Profile Index in./mile (mm/km)	Assessment per subplot
6.0 (95) or less	15.0 (240) or less	+\$150.00
>6.0 (95) to 10.0 (160)	>15.0 (240) to 25.0 (400)	+\$80.00
>10.0 (160) to 30.0 (475)	>25.0 (400) to 45.0 (710)	+\$0.00
>30.0 (475) to 40.0 (635)	>45.0 (710) to 65.0 (1025)	+\$0.00
Greater than 40.0 (635)	Greater than 65.0 (1025)	-\$300.00”

**TEMPORARY PAVEMENT MARKING (BDE)**

Effective: April 1, 2012

Revised: April 1, 2017

Revise Article 703.02 of the Standard Specifications to read:

“**703.02 Materials.** Materials shall be according to the following.

- (a) Pavement Marking Tape, Type I and Type III ..... 1095.06
- (b) Paint Pavement Markings ..... 1095.02
- (c) Pavement Marking Tape, Type IV ..... 1095.11”

Revise the second paragraph of Article 703.05 of the Standard Specifications to read:

“Type I marking tape or paint shall be used at the option of the Contractor, except paint shall not be applied to the final wearing surface unless authorized by the Engineer for late season applications where tape adhesion would be a problem. Type III or Type IV marking tape shall be used on the final wearing surface when the temporary pavement marking will conflict with the permanent pavement marking such as on tapers, crossovers and lane shifts.”

Revise Article 703.07 of the Standard Specifications to read:

**“703.07 Basis of Payment.** This work will be paid for as follows.

- a) Short Term Pavement Marking. Short term pavement marking will be paid for at the contract unit price per foot (meter) for SHORT TERM PAVEMENT MARKING. Removal of short term pavement markings will be paid for at the contract unit price per square foot (square meter) for SHORT TERM PAVEMENT MARKING REMOVAL.
- b) Temporary Pavement Marking. Where the Contractor has the option of material type, temporary pavement marking will be paid for at the contract unit price per foot (meter) for TEMPORARY PAVEMENT MARKING of the line width specified, and at the contract unit price per square foot (square meter) for TEMPORARY PAVEMENT MARKING LETTERS AND SYMBOLS.

Where the Department specifies the use of pavement marking tape, the Type III or Type IV temporary pavement marking will be paid for at the contract unit price per foot (meter) for PAVEMENT MARKING TAPE, TYPE III or PAVEMENT MARKING TAPE, TYPE IV of the line width specified and at the contract unit price per square feet (square meter) for PAVEMENT MARKING TAPE, TYPE III - LETTERS AND SYMBOLS or PAVEMENT MARKING TAPE, TYPE IV – LETTERS AND SYMBOLS.

Removal of temporary pavement markings will be paid for at the contract unit price per square foot (square meter) for TEMPORARY PAVEMENT MARKING REMOVAL.

When temporary pavement marking is shown on the Standard, the cost of the temporary pavement marking and its removal will be included in the cost of the Standard.”

Add the following to Section 1095 of the Standard Specifications:

**“1095.11 Pavement Marking Tape, Type IV.** The temporary, 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 tape shall be manufactured without the use of heavy metals including lead chromate pigments or other similar, lead-containing chemicals.

The white and yellow Type IV marking tape shall meet the Type III requirements of Article 1095.06 and the following.

- (a) Composition. The retroreflective 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 D 4061 and meet the values described in Article 1095.06 for Type III tape.
- (2) Wet Retroreflectance. Wet retroreflectance shall be measured under wet conditions according to ASTM E 2177 and meet the values shown in the following table.

**Wet Retroreflectance, Initial R<sub>L</sub>**

Color	R <sub>L</sub> 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) Skid Resistance. The surface of the markings shall provide an average minimum skid resistance of 50 BPN when tested according to ASTM E 303.

(e) Sampling, Testing, Acceptance, and Certification. Prior to approval and use of the wet reflective, temporary, removable pavement marking tape, 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.

All costs of testing (other than tests conducted by the Department) shall be borne by the manufacturer."



**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 0. 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**

Effective: August 1, 2012

Revised: February 2, 2017

In addition to the Contractor's equal employment opportunity (EEO) affirmative action efforts undertaken as required by this Contract, the Contractor is encouraged to participate in the incentive program described below to provide additional on-the-job training to certified graduates of the IDOT pre-apprenticeship training program, as outlined in this Special Provision.

IDOT funds, and various Illinois community colleges operate, pre-apprenticeship training programs throughout the State to provide training and skill-improvement opportunities to promote the increased employment of minority groups, disadvantaged persons and women in all aspects of the highway construction industry. The intent of this IDOT Pre-Apprenticeship Training Program Graduate (TPG) special provision (Special Provision) is to place these certified program graduates on the project site for this Contract in order to provide the graduates with meaningful on-the-job training. Pursuant to this Special Provision, the Contractor must make every reasonable effort to recruit and employ certified TPG trainees to the extent such individuals are available within a practicable distance of the project site.

Specifically, participation of the Contractor or its subcontractor in the Program entitles the participant to reimbursement for graduates' hourly wages at \$15.00 per hour per utilized TPG trainee, subject to the terms of this Special Provision. Reimbursement payment will be made even though the Contractor or subcontractor may also receive additional training program funds from other non-IDOT sources for other non-TPG trainees on the Contract, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving reimbursement from another entity through another program, such as IDOT through the TPG program. With regard to any IDOT funded construction training program other than TPG, however, additional reimbursement for other IDOT programs will not be made beyond the TPG Program described in this Special Provision when the TPG Program is utilized.

No payment will be made to the Contractor if the Contractor or subcontractor fails to provide the required on-site training to TPG trainees, as solely determined by IDOT. A TPG trainee must begin training on the project as soon as the start of work that utilizes the relevant trade skill and the TPG trainee must remain on the project site through completion of the Contract, so long as training opportunities continue to exist in the relevant work classification. Should a TPG trainee's employment end in advance of the completion of the Contract, the Contractor must promptly notify the IDOT District EEO Officer for the Contract that the TPG's involvement in the Contract has ended. The Contractor must supply a written report for the reason the TPG trainee involvement terminated, the hours completed by the TPG trainee on 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 separated TPG trainee.

Finally, the Contractor must maintain all records it creates as a result of participation in the Program on the Contract, and furnish periodic written reports to the IDOT District EEO Officer that document its contractual performance under and compliance with this Special Provision. Finally, through participation in the Program and reimbursement of wages, the Contractor is not relieved of, and IDOT has not waived, the requirements of any federal or state labor or employment law applicable to TPG workers, including compliance with the Illinois Prevailing Wage Act.

**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 each utilized certified TPG Program trainee (TRAINEES TRAINING PROGRAM GRADUATE). The estimated total number of hours, unit price, and total price must be included in the schedule of prices for the Contract submitted by Contractor prior to beginning work. The initial number of TPG trainees for which the incentive is available for this contract is 2.

The Department has contracted with several educational institutions to provide screening, tutoring and pre-training to individuals interested in working as a TPG trainee in various areas of common construction trade work. Only individuals who have successfully completed a Pre-Apprenticeship Training Program at these IDOT approved institutions are eligible to be TPG trainees. To obtain a list of institutions that can connect the Contractor with eligible TPG trainees, the Contractor may contact: HCCTP TPG Program Coordinator, Office of Business and Workforce Diversity (IDOT OBWD), Room 319, Illinois Department of Transportation, 2300 S. Dirksen Parkway, Springfield, Illinois 62764. Prior to commencing construction with the utilization of a TPG trainee, the Contractor must submit documentation to the IDOT District EEO Officer for the Contract that provides the names and contact information of the TPG trainee(s) to be trained in each selected work classification, proof that that the TPG trainee(s) has successfully completed a Pre-Apprenticeship Training Program, proof that the TPG is in an Apprenticeship Training Program approved by the U.S. Department of Labor Bureau of Apprenticeship Training, and the start date for training in each of the applicable work classifications.

To receive payment, the Contractor must provide training opportunities aimed at developing a full journeyworker in the type of trade or job classification involved. During the course of performance of the Contract, the Contractor may seek approval from the IDOT District EEO Officer to employ additional eligible TPG trainees. In the event the Contractor subcontracts a portion of the contracted work, it must determine how many, if any, of the TPGs will be trained by the subcontractor. Though a subcontractor may conduct training, the Contractor retains the responsibility for meeting all requirements imposed by this Special Provision. The Contractor must also include this Special Provision in any subcontract where payment for contracted work performed by a TPG trainee will be passed on to a subcontractor.

Training through the Program is intended to move TPGs toward journeyman status, which is the primary objective of this Special Provision. Accordingly, the Contractor must make every effort to enroll TPG trainees by recruitment through the Program participant educational institutions to the extent eligible TPGs are available within a reasonable geographic area of the project. The Contractor is responsible for demonstrating, through documentation, the recruitment efforts it has undertaken prior to the determination by IDOT whether the Contractor is in compliance with this Special Provision, and therefore, entitled to the Training Program Graduate reimbursement of \$15.00 per hour.

Notwithstanding the on-the-job training requirement of this TPG Special Provision, some minimal off-site training is permissible as long as the offsite training is an integral part of the work of the contract, and does not compromise or conflict with the required on-site training that is central to the purpose of the Program. No individual may be employed as a TPG trainee in any work classification in which he/she has previously successfully completed a training program leading to journeyman status in any trade, or in which he/she has worked at a journeyman level or higher.

**TRAVERSABLE PIPE GRATE FOR CONCRETE END SECTIONS (BDE)**

Effective: January 1, 2013

Revised: January 1, 2018

Description. This work shall consist of constructing a traversable pipe grate on a concrete end section.

Materials. Materials shall be according to the following Articles of Division 1000 – Materials of the Standard Specifications.

Item	Article/Section
(a) Traversable Pipe Grate Components (Note 1)	
(b) Chemical Adhesive Resin System .....	1027
(c) High Strength Steel Bolts, Nuts, and Washers (Note 2) .....	1006.08

Note 1. All steel pipe shall be according to ASTM A 53 (Type E or S), Grade B, or ASTM A 500 Grade B, standard weight (SCH. 40). Structural steel shapes and plates shall be according to AASHTO M270 Grade 50 (M 270M Grade 345) and the requirements of Article 1006.04 of the Standard Specifications. All steel components of the grating system shall be galvanized according to AASHTO M 111 or ASTM F 2329 as applicable.

Anchor rods shall be according to ASTM F 1554, Grade 36 (Grade 250).

Note 2. Threaded rods conforming to the requirements of ASTM F 1554, Grade 105 (Grade 725) may be used for the thru bolts.

**CONSTRUCTION REQUIREMENTS**

Fabrication of the traversable pipe grate shall be according to the requirements of Section 505 of the Standard Specifications and as shown on the plans.

Anchor rods shall be set according to Article 509.06 of the Standard Specifications. Bolts and anchor rods shall be snug tightened by a few impacts of an impact wrench or the full force of a worker using an ordinary spud wrench. Thru bolts shall be snug tightened and shall be brought to a snug tight condition followed by an additional 2/3 turn on one of the nuts. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut.

Splicing of pipes shall be made by utilizing full penetration butt welds according to Article 505.04(q) of the Standard Specifications. In lieu of welding, bolted or sleeve type splices may be utilized, provided the splices are located over intermediate supports with no more than one splice per pipe run with the exception that no splice may occur in pipe runs under 30 ft (9 m) in length.

Method of Measurement. This work will be measured for payment in place in feet (meters). The length measured shall be along the pipe grate elements from end to end for both longitudinal and intermediate support pipes.

Basis of Payment. This work will be paid for at the contract unit price per foot (meter) for TRAVERSABLE PIPE GRATE FOR CONCRETE END SECTION.

**WARM MIX ASPHALT (BDE)**

Effective: January 1, 2012

Revised: April 1, 2016

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.

“(11) Equipment for Warm Mix Technologies.

- a. Foaming. Metering equipment for foamed asphalt shall have an accuracy of  $\pm 2$  percent of the actual water metered. The foaming control system shall be electronically interfaced with the asphalt binder meter.
- b. Additives. Additives shall be introduced into the plant according to the supplier's recommendations and shall be approved by the Engineer. The system for introducing the WMA additive shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes.”

Mix Design Verification.

Add the following to Article 1030.04 of the Standard Specifications.

“(e) Warm Mix Technologies.

- (1) Foaming. WMA mix design verification will not be required when foaming technology is used alone (without WMA additives). However, the foaming technology shall only be used on HMA designs previously approved by the Department.
- (2) Additives. WMA mix designs utilizing additives shall be submitted to the Engineer for mix design verification.”

Construction Requirements.

Revise the second paragraph of Article 406.06(b)(1) of the Standard Specifications to read:

“The HMA shall be delivered at a temperature of 250 to 350 °F (120 to 175 °C). WMA shall be delivered at a minimum temperature of 215 °F (102 °C).”

Basis of Payment.

This work will be paid at the contract unit price bid for the HMA pay items involved. Anti-strip will not be paid for separately, but shall be considered as included in the cost of the work.



### **WEEKLY DBE TRUCKING REPORTS (BDE)**

Effective: June 2, 2012

Revised: April 2, 2015

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Engineer on Department form "SBE 723" within ten business days following the reporting period. The reporting period shall be Monday through Sunday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

### **BITUMINOUS MATERIALS COST ADJUSTMENTS (BDE)**

Effective: November 2, 2006

Revised: August 1, 2017

Description. Bituminous material cost adjustments will be made to provide additional compensation to the Contractor, or credit to the Department, for fluctuations in the cost of bituminous materials when optioned by the Contractor. The bidder shall indicate with their bid whether or not this special provision will be part of the contract.

The adjustments shall apply to permanent and temporary hot-mix asphalt (HMA) mixtures, bituminous surface treatments (cover and seal coats), and preventative maintenance type surface treatments that are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply to bituminous prime coats, tack coats, crack filling/sealing, joint filling/sealing, or extra work paid for at a lump sum price or by force account.

Method of Adjustment. Bituminous materials cost adjustments will be computed as follows.

$$CA = (BPI_P - BPI_L) \times (\%AC_V / 100) \times Q$$

- Where: CA = Cost Adjustment, \$.
- BPI<sub>P</sub> = Bituminous Price Index, as published by the Department for the month the work is performed, \$/ton (\$/metric ton).
- BPI<sub>L</sub> = Bituminous Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, \$/ton (\$/metric ton).
- %AC<sub>V</sub> = Percent of virgin Asphalt Cement in the Quantity being adjusted. For HMA mixtures, the % AC<sub>V</sub> will be determined from the adjusted job mix formula. For bituminous materials applied, a performance graded or cutback asphalt will be considered to be 100% AC<sub>V</sub> and undiluted emulsified asphalt will be considered to be 65% AC<sub>V</sub>.
- Q = Authorized construction Quantity, tons (metric tons) (see below).

For HMA mixtures measured in square yards:  $Q, \text{ tons} = A \times D \times (G_{mb} \times 46.8) / 2000$ . For HMA mixtures measured in square meters:  $Q, \text{ metric tons} = A \times D \times (G_{mb} \times 1) / 1000$ . When computing adjustments for full-depth HMA pavement, separate calculations will be made for the binder and surface courses to account for their different  $G_{mb}$  and %  $AC_v$ .

For bituminous materials measured in gallons:  $Q, \text{ tons} = V \times 8.33 \text{ lb/gal} \times SG / 2000$   
For bituminous materials measured in liters:  $Q, \text{ metric tons} = V \times 1.0 \text{ kg/L} \times SG / 1000$

Where: A = Area of the HMA mixture, sq yd (sq m).  
D = Depth of the HMA mixture, in. (mm).  
 $G_{mb}$  = Average bulk specific gravity of the mixture, from the approved mix design.  
V = Volume of the bituminous material, gal (L).  
SG = Specific Gravity of bituminous material as shown on the bill of lading.

Basis of Payment. Bituminous materials cost adjustments may be positive or negative but will only be made when there is a difference between the  $BPI_L$  and  $BPI_P$  in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(BPI_L - BPI_P) \div BPI_L\} \times 100$$

Bituminous materials cost adjustments will be calculated for each calendar month in which applicable bituminous material is placed; and will be paid or deducted when all other contract requirements for the work placed during the month are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

## **FUEL COST ADJUSTMENT (BDE)**

Effective: April 1, 2009      Revised: August 1, 2017

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 with their bid whether or not this special provision will be part of the contract. Failure to indicate "Yes" for any category of work will make that category of work exempt from fuel cost adjustment.

General. The fuel cost adjustment shall apply to contract pay items as grouped by category. The adjustment shall only apply to those categories of work checked "Yes", and only when the cumulative plan quantities for a category exceed the required threshold. Adjustments to work items in a category, either up or down, and extra work paid for by agreed unit price will be subject to fuel cost adjustment only when the category representing the added work was subject to the fuel cost adjustment. Extra work paid for at a lump sum price or by force account will not be subject to fuel cost adjustment. Category descriptions and thresholds for application and the fuel usage factors which are applicable to each are as follows:

(a) Categories of Work.

- (1) Category A: Earthwork. Contract pay items performed under Sections 202, 204, and 206 including any modified standard or nonstandard items where the character of the work to be performed is considered earthwork. The cumulative total of all applicable item plan quantities shall exceed 25,000 cu yd (20,000 cu m). Included in the fuel usage factor is a weighted average 0.10 gal/cu yd (0.50 liters/cu m) factor for trucking.
- (2) Category B: Subbases and Aggregate Base Courses. Contract pay items constructed under Sections 311, 312 and 351 including any modified standard or nonstandard items where the character of the work to be performed is considered construction of a subbase or aggregate, stabilized or modified base course. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is a 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.
- (3) Category C: Hot-Mix Asphalt (HMA) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 355, 406, 407 and 482 including any modified standard or nonstandard items where the character of the work to be performed is considered HMA bases, pavements and shoulders. The cumulative total of all applicable item plan quantities shall exceed 5000 tons (4500 metric tons). Included in the fuel usage factor is 0.60 gal/ton (2.50 liters/metric ton) factor for trucking.
- (4) Category D: Portland Cement Concrete (PCC) Bases, Pavements and Shoulders. Contract pay items constructed under Sections 353, 420, 421 and 483 including any modified standard or nonstandard items where the character of the work to be performed is considered PCC base, pavement or shoulder. The cumulative total of all applicable item plan quantities shall exceed 7500 sq yd (6000 sq m). Included in the fuel usage factor is 1.20 gal/cu yd (5.94 liters/cu m) factor for trucking.

(5) Category E: Structures. Structure items having a cumulative bid price that exceeds \$250,000 for pay items constructed under Sections 502, 503, 504, 505, 512, 516 and 540 including any modified standard or nonstandard items where the character of the work to be performed is considered structure work when similar to that performed under these sections and not included in categories A through D.

(b) Fuel Usage Factors.

English Units		
Category	Factor	Units
A - Earthwork	0.34	gal / cu yd
B – Subbase and Aggregate Base courses	0.62	gal / ton
C – HMA Bases, Pavements and Shoulders	1.05	gal / ton
D – PCC Bases, Pavements and Shoulders	2.53	gal / cu yd
E – Structures	8.00	gal / \$1000

Metric Units		
Category	Factor	Units
A - Earthwork	1.68	liters / cu m
B – Subbase and Aggregate Base courses	2.58	liters / metric ton
C – HMA Bases, Pavements and Shoulders	4.37	liters / metric ton
D – PCC Bases, Pavements and Shoulders	12.52	liters / cu m
E – Structures	30.28	liters / \$1000

(c) Quantity Conversion Factors.

Category	Conversion	Factor
B	sq yd to ton	0.057 ton / sq yd / in depth
	sq m to metric ton	0.00243 metric ton / sq m / mm depth
C	sq yd to ton	0.056 ton / sq yd / in depth
	sq m to metric ton	0.00239 m ton / sq m / mm depth
D	sq yd to cu yd	0.028 cu yd / sq yd / in depth
	sq m to cu m	0.001 cu m / sq m / mm depth

Method of Adjustment. Fuel cost adjustments will be computed as follows.

$$CA = (FPI_P - FPI_L) \times FUF \times Q$$

Where: CA = Cost Adjustment, \$  
FPI<sub>P</sub> = Fuel Price Index, as published by the Department for the month the work is performed, \$/gal (\$/liter)  
FPI<sub>L</sub> = Fuel Price Index, as published by the Department for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price, \$/gal (\$/liter)  
FUF = Fuel Usage Factor in the pay item(s) being adjusted  
Q = Authorized construction Quantity, tons (metric tons) or cu yd (cu m)

The entire FUF indicated in paragraph (b) will be used regardless of use of trucking to perform the work.

Basis of Payment. Fuel cost adjustments may be positive or negative but will only be made when there is a difference between the FPI<sub>L</sub> and FPI<sub>P</sub> in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(FPI_L - FPI_P) \div FPI_L\} \times 100$$

Fuel cost adjustments will be calculated for each calendar month in which applicable work is performed; and will be paid or deducted when all other contract requirements for the items of work are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

### **STEEL COST ADJUSTMENT (BDE)**

Effective: April 2, 2004

Revised: August 1, 2017

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 with their bid whether or not this special provision will be part of the contract. Failure to indicate "Yes" for any item of work will make that item of steel exempt from steel cost adjustment.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

- Metal Piling (excluding temporary sheet piling)
- Structural Steel
- Reinforcing Steel

Other steel materials such as dowel bars, tie bars, mesh reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), and frames and grates will be subject to a steel cost adjustment when the pay items they are used in have a contract value of \$10,000 or greater.

The adjustments shall apply to the above items when they are part of the original proposed construction, or added as extra work and paid for by agreed unit prices. The adjustments shall not apply when the item is added as extra work and paid for at a lump sum price or by force account.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

- (a) The dates and quantity of steel, in lb (kg), shipped from the mill to the fabricator.
- (b) The quantity of steel, in lb (kg), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$$SCA = Q \times D$$

Where: SCA = steel cost adjustment, in dollars  
Q = quantity of steel incorporated into the work, in lb (kg)  
D = price factor, in dollars per lb (kg)

$$D = MPI_M - MPI_L$$

Where:  $MPI_M$  = The Materials Cost Index for steel as published by the Engineering News-Record for the month the steel is shipped from the mill. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

$MPI_L$  = The Materials Cost Index for steel as published by the Engineering News-Record for the month prior to the letting for work paid for at the contract price; or for the month the agreed unit price letter is submitted by the Contractor for extra work paid for by agreed unit price,. The indices will be converted from dollars per 100 lb to dollars per lb (kg).

The unit weights (masses) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the  $MPI_M$  will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the  $MPI_L$  and  $MPI_M$  in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(MPI_L - MPI_M) \div MPI_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the items of work are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

**Attachment**

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling)	
Furnishing Metal Pile Shells 12 in. (305 mm), 0.179 in. (3.80 mm) wall thickness	23 lb/ft (34 kg/m)
Furnishing Metal Pile Shells 12 in. (305 mm), 0.250 in. (6.35 mm) wall thickness	32 lb/ft (48 kg/m)
Furnishing Metal Pile Shells 14 in. (356 mm), 0.250 in. (6.35 mm) wall thickness	37 lb/ft (55 kg/m)
Other piling	See plans
Structural Steel	See plans for weights (masses)
Reinforcing Steel	See plans for weights (masses)
Dowel Bars and Tie Bars	6 lb (3 kg) each
Mesh Reinforcement	63 lb/100 sq ft (310 kg/sq m)
Guardrail	
Steel Plate Beam Guardrail, Type A w/steel posts	20 lb/ft (30 kg/m)
Steel Plate Beam Guardrail, Type B w/steel posts	30 lb/ft (45 kg/m)
Steel Plate Beam Guardrail, Types A and B w/wood posts	8 lb/ft (12 kg/m)
Steel Plate Beam Guardrail, Type 2	305 lb (140 kg) each
Steel Plate Beam Guardrail, Type 6	1260 lb (570 kg) each
Traffic Barrier Terminal, Type 1 Special (Tangent)	730 lb (330 kg) each
Traffic Barrier Terminal, Type 1 Special (Flared)	410 lb (185 kg) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms	
Traffic Signal Post	11 lb/ft (16 kg/m)
Light Pole, Tenon Mount and Twin Mount, 30 - 40 ft (9 - 12 m)	14 lb/ft (21 kg/m)
Light Pole, Tenon Mount and Twin Mount, 45 - 55 ft (13.5 - 16.5 m)	21 lb/ft (31 kg/m)
Light Pole w/Mast Arm, 30 - 50 ft (9 - 15.2 m)	13 lb/ft (19 kg/m)
Light Pole w/Mast Arm, 55 - 60 ft (16.5 - 18 m)	19 lb/ft (28 kg/m)
Light Tower w/Luminaire Mount, 80 - 110 ft (24 - 33.5 m)	31 lb/ft (46 kg/m)
Light Tower w/Luminaire Mount, 120 - 140 ft (36.5 - 42.5 m)	65 lb/ft (97 kg/m)
Light Tower w/Luminaire Mount, 150 - 160 ft (45.5 - 48.5 m)	80 lb/ft (119 kg/m)
Metal Railings (excluding wire fence)	
Steel Railing, Type SM	64 lb/ft (95 kg/m)
Steel Railing, Type S-1	39 lb/ft (58 kg/m)
Steel Railing, Type T-1	53 lb/ft (79 kg/m)
Steel Bridge Rail	52 lb/ft (77 kg/m)
Frames and Grates	
Frame	250 lb (115 kg)
Lids and Grates	150 lb (70 kg)



## STORM WATER POLLUTION PREVENTION PLAN



### Storm Water Pollution Prevention Plan



Route	Marked Route	Section
FAP Route 344	US Route 45 and Grass Lake Rd.	39 R
Project Number	County	Contract Number
C-91-424-12	Lake County	60T75

This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issued by the Illinois Environmental Protection Agency (IEPA) for storm water discharges from construction site activities.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name	Title	Agency
Anthony Quigley, PE	Dep. Dir. of Highways, Reg. 1 Eng	Illinois Department of Transp.
Signature	Date	
	3-20-17	

#### I. Site Description

A. Provide a description of the project location (include latitude and longitude):

The project is located in Lake County in the Villages of Lindenhurst and Old Mill Creek as well as unincorporated portion of Lake County within Lake Villa and Newport Townships, Illinois (NW and SW quadrants of Section 36, Township 46N, Range 10E). The project is along US Route 45 from Country Pl. to 1600' north of Independence Blvd. along a new alignment which varies from 0 to approximately 1000' west of the existing alignment. The project is also along Grass Lake Road, from 1600' west of Heritage Drive to existing US Route 45 along a new alignment which varies from 0' to 350' south of the existing alignment. (Lat. 42-25-32N, Long. 88-00-26W).

North Mill Creek runs north and south crossing Millburn Road just east of the project limits. An unnamed tributary to North Mill Creek (Millburn Creek) branches off to the west, south of Millburn Road and proceeds west crossing U.S. Route 45 south of Haven Lane through to McDonald Woods Lake. Floodplain surrounds both North Mill Creek and the Millburn Creek to a fairly narrow corridor of 50 to 200 feet in width. A Tributary to Millburn Creek branches off to the north just west of U.S. Route 45. This Tributary extends through the Forest Trail Subdivision along Haven Lane as it was modified with the sub development and a Letter of Map Revision was issued for the revised flood plain location.

The design, installation, and maintenance of BMPs at these locations are within an area where annual erosivity (R value) is less than or equal 160. Erosivity is less than 5 in all two-week periods between October 12 and April 15, which would qualify for a construction rainfall erosivity waiver under the US Construction General Permit requirements. At these locations, erosivity is highest in spring to autumn, April 16 – October 11.

Right-of-way and easement acquisition is required for this project with a total of 32.94 acres being required for the proposed improvement, with 0.84 acres of temporary construction easements.

There are no endangered species located within the project limits. In addition, the Illinois Natural History Survey conducted botanical surveys to determine presence or absence of the Eastern prairie fringed orchid, which was determined to not be present. Consultation with respect to state-listed threatened and endangered species and Natural Areas was initiated with the IDNR through the Ecological Compliance Assessment Tool (EcoCAT) for the project. In letters terminating consultation for this project dated March 9, 2009 and August 20, 2009, IDNR concluded that adverse effects to state-listed threatened and endangered species and Natural Areas are unlikely. Updated clearance with respect to natural resources review was received from IDNR on February 7, 2012.

Lake County Forest Preserve (McDonald Woods) and undeveloped open space (predominantly east of existing U.S. Route 45) comprise the most important wildlife habitat along and near the project corridor. The undeveloped open space east of U.S. Route 45 includes the North Mill Creek (and tributaries) wooded riparian environment, wetland, buffer, and other adjacent wooded areas. Available lists of wildlife were obtained from the LCFPD for the three adjacent preserves. Based on these wildlife lists, 96 species of birds, 18 species of mammals, five species of amphibians, and five species of reptiles have been observed in these preserves. Of those species, 24 birds, one mammal (northern river otter [*Lontra canadensis*]), one amphibian (blue-spotted salamander [*Ambystoma laterale*]), and one reptile (smooth green snake [*Liochlorophis vernalis*]) are listed as "Species in Greatest Need of Conservation for Illinois." Based on information provided by the IDNR and the Illinois Natural Heritage Database (dated July 11, 2011), there are no State Designated Lands within the project limits.

There are numerous wetlands that were surveyed by IDOT within or adjacent to the project limits. See section I – G for a description of the wetlands.

B. Provide a description of the construction activity which is subject of this plan:

The project includes the reconstruction of 7,200 feet of US Route 45 roadway, as well as 3,200 feet of Grass Lake Road. The new US 45 roadway will include two 12-foot wide traffic lanes in each direction with barrier medians, curb and gutter, and auxiliary turn lanes at intersections. In addition, Grass Lake Road, Old US 45, and Independence Boulevard will be widened and/or realigned, with a new signalized intersection of US 45 at Grass Lake Road.

The project consists of four (4) main stages of construction, majority of the roadway embankment, detention pond #1 and #2, culvert construction, and bridge construction will occur during stage 1. The subsequent stages will include paving and staging of the reconstruction along Grass Lake Road as needed to maintain traffic. Each stage will incorporate similar methods for the purpose of reducing erosion and providing sediment control. Other improvements include total three detention basins, guardrail, curb and gutter, sidewalk, and driveway entrances.

There are two (2) streams Unnamed tributary to Mill Creek locations at approximately 128+00 and 135+00. In this project under bypass US45 Grading and Re-Aligned centerline of Mill Creek at Sta. 128+00 and install reinforced box culverts and relocate back channel of Unnamed tributary to Mill Creek at Sta. 135+00.

For areas within the project limits that have soil disturbance, the Contractor shall take the following steps as directed by the Engineer

- i. Place temporary erosion control systems at locations where water leaves and enters the construction zone.
- ii. Construct the necessary roadside ditches and provide temporary erosion control system.

Excavated areas and embankments shall be permanently seeded when final grading is complete. If not, they shall be temporarily seeded weekly regardless of the weather or work progress on the disturbed areas that will not be disturbed for 14 days or more as stated in the standard specification, Article 280.04(f) "Temporary Erosion Control Seeding."

The temporary erosion systems shall be removed and maintained as directed by the Engineer until permanent erosion control measures (permanent seeding and erosion control blankets/mulch) are established and working properly. The temporary erosion control measures shall be removed, cleaned up, and all disturbed areas shall be re-seeded upon establishment of permanent erosion control measures.

- C. Provide the estimated duration of this project:

The project is estimated to last 12 months.

- D. The total area of the construction site is estimated to be 50.1 acres.

The total area of the site estimated to be disturbed by excavation, grading or other activities is 50.1 acres.

- E. The following is a weighted average of the runoff coefficient for this project after construction activities are completed:

C=0.6 (Proposed); C=0.52 (Existing)

- F. List all soils found within project boundaries. Include map unit name, slope information and erosivity:

146A - Elliott silt loam, 0 to 2 % slopes, K Factor 0.24, This soil has low susceptibility to water erosion.  
146B - Elliott silt loam, 2 to 4 % slopes, K Factor 0.24, This soil has low susceptibility to water erosion.  
153A - Pella silty clay Loam, 0 to 2 % slopes, K Factor 0.24, This soil has low susceptibility to water erosion.  
232A - Ashkum silty clay loam, 0 to 2 % slopes, K Factor 0.20, This soil has low susceptibility to water erosion.  
298A - Beecher silt loams, 0 to 2 % slopes, K Factor 0.28, This soil has low susceptibility to water erosion.  
442B - Mundelein Silt Loam, 2 to 4 % slopes, K Factor 0.28, This soil has low susceptibility to water erosion.  
530B - Ozaukee silt loam, 2 to 4 % slopes, K Factor 0.32, This soil has low susceptibility to water erosion.  
530B2 - Ozaukee silt loam, 2 to 4 % slopes, K Factor 0.32, This soil has low susceptibility to water erosion.  
530C2 - Ozaukee silt loam, 4 to 6 % slopes, K Factor 0.32, This soil has moderate susceptibility to water erosion.  
531B - Markham silt loam, 2 to 4 % slopes, K Factor 0.28, This soil has low susceptibility to water erosion.  
531C2 - Markham silt loam, 4 to 6 % slopes, K Factor 0.28, This soil has moderate susceptibility to water erosion.  
978B - Wauconda & Beecher Silt Loams, 2 to 4 % slopes, K Factor 0.37, This soil has moderate susceptibility to water erosion.  
979B - Grays and Markham silt loams, 2 to 4 % slopes, K Factor 0.37, This soil has moderate susceptibility to water erosion.  
989B - Mundelein and Elliott silt loams, 2 to 4 % slopes, K Factor 0.28, This soil has low susceptibility to water erosion.

G. Provide an aerial extent of wetland acreage at the site:

There are numerous wetlands and water of US (WOUS) that were surveyed by IDOT within or adjacent to the project limits.

Wetland site 2 (0.01 acres) is located 53 feet east of U.S. Route 45 and approximately 1,500 feet north of Independence Boulevard, wetland site 3(0.01 acres) is located 122 feet east of U.S. Route 45 and approximately 750 feet north of Independence Boulevard, wetland site 4 (0.01 acres) is located 17 feet of south of W Grass Lake and approximately 1,000 feet west of U.S. Route 45, wetland site 6 (0.37 acres) is located 53 feet north of Grass Lake, wetland site 7 (0.07 acres) is located 270 feet north of Haven Lane and approximately 800 feet west of U.S. Route 45, wetland site 8 (< 0.01 acres) is located 387 feet south of Haven Lane and approximately 750 feet west of U.S. Route 45, wetland site 10 (0.04 acres) is located 78 feet west of U.S. Route 45, wetland site 12 (0.06 acres) is located 36 feet east of U.S. Route 45, wetland site 13 (0.12 acres) is located 10 feet east of U.S. Route 45.

There are two (2) streams; located at approximately Sta. 128+00 (W5\_Unnamed tributary to Mill Creek), Sta. 135+00 (W4\_Unnamed tributary to Mill Creek) and four (4) ditches; located approximately Sta. 105+00 (W6\_Unnamed tributary to Mill Creek), Sta. 143+00 (W3\_Unnamed Ditch), Sta. 148+00 (W2\_Unnamed Ditch), Sta. 177+00 (W1\_Unnamed Ditch).

There are 9 wetlands and 6 Waters of the US (WOUS) located within the project limits. The total wetland impact for the project is 0.07 acres. Total impact to WOUS within the project site is approximately 0.36 acres. The wetlands/WOUS include:

WOUS 1 (Unnamed Ditch): < 1 square mile / < 0.01 Acres of impact  
WOUS 2 (Unnamed Ditch): < 1 square mile / < 0.01 Acres of impact  
WOUS 3 (Unnamed Ditch): < 1 square mile / < 0.01 Acres of impact  
WOUS 4 (Unnamed Tributary to Mill Creek): < 1 square mile / 0.01 Acres of impact  
WOUS 5 (Unnamed Tributary to Mill Creek): 1.4 square mile / 0.24 Acres of impact  
WOUS 6 (Unnamed Tributary to Mill Creek): < 1 square mile / 0.02 Acres of impact  
Wetland 02: Undetermined / 0.0 Acres of impact  
Wetland 03: 0.01 Acres / 0.0 Acres of impact  
Wetland 04: 0.01 Acres / 0.0 Acres of impact  
Wetland 06: 0.37 Acres / 0.0 Acres of impact  
Wetland 07: Undetermined / 0.04 Acres of impact  
Wetland 08: Undetermined / 0.002 Acres of impact  
Wetland 10: 0.04 Acres / 0.0 Acres of impact  
Wetland 12: 0.06 Acres / 0.0 Acres of impact  
Wetland 13: 0.12 Acres / 0.03 Acres of impact

H. Provide a description of potentially erosive areas associated with this project:

There are 2 stream locations at approximately 128+00 and 135+00. Additionally, there are culvert locations at approximately stations 143+00, 159+10, 170+50, 176+10, 308+80, and 311+50. Grading of ditches and swales is proposed throughout the project to collect off-site water. Generally, site grades are not steep and locations without concentrated flows pose a normal risk for erosion.

I. The following is a description of soil disturbing activities by stages, their locations, and their erosive factors (e.g. steepness of slopes, length of scopes, etc.):

Construction including the majority of the roadway embankment, ponds #1 and #2, culvert construction, and bridge construction will occur during stage 1. The subsequent stages will include paving and staging of the reconstruction along Grass Lake Road as needed to maintain traffic. At the stream crossings, the slopes are 1:3 and are approximately 9'-15' above the Normal Water Level of the Streams. At other locations slopes are generally 1:3 back slopes from the proposed ditch elevations to the existing ground elevations.

J. See the erosion control plans and/or drainage plans for this contract for information regarding drainage patterns, approximate slopes anticipated before and after major grading activities, locations where vehicles enter or exit the site and controls to prevent off site sediment tracking (to be added after contractor identifies locations), areas of soil disturbance, the location of major structural and non-structural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands) and locations where storm water is discharged to surface water including wetlands.

K. Identify who owns the drainage system (municipality or agency) this project will drain into:

The Illinois Department of Transportation will own and maintain the drainage system along US 45, and Lake County will own and maintain the drainage system along Grass Lake Road.

L. The following is a list of General NPDES ILR40 permittees within whose reporting jurisdiction this project is located.

Illinois Department Of Transportation, Lake County, Village of Lindenhurst and Old Mill Creek.

M. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. The location of the receiving waters can be found on the erosion and sediment control plans:

Project outlets drain to Unnamed Tributaries of Mill Creek & ultimately to Mill Creek. The project is within the Des Plaines River watershed.  
Mill creek is NOT listed in 2014 303(d) list.  
Mill Creek is NOT Biological significant stream, Stream rating for integrity is B.

N. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes, highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc.

The wetland in the northwest quadrant of realigned US 45 and realigned Grass Lake Road shall be undisturbed. Also the existing landscaped area along the west side of US 45 from approximately station 148+30 to 152+50 shall be undisturbed.

All unimpacted wetlands located within the ROW and wetlands located adjacent to the ROW will be protected during construction. Wetland exclusion fencing and "Wetland No Intrusion" signage should also be provided at the boundary of all un-impacted wetlands and/or Waters of the US within the ROW. Additionally, Lake County Forest Preserve (McDonald Woods) and undeveloped open space (predominantly east of existing U.S. Route 45) comprise the most important wildlife habitat along and near the project corridor. The undeveloped open space east of U.S. Route 45 includes the North Mill Creek (and tributaries) wooded riparian environment, wetland, buffer, and other adjacent wooded areas. Available lists of wildlife were obtained from the LCFPD for the three adjacent preserves. Based on these wildlife lists, 96 species of birds, 18 species of mammals, five species of amphibians, and five species of reptiles have been observed in these preserves. Of those species, 24 birds, one mammal (northern river otter [*Lontra canadensis*]), one amphibian (blue-spotted salamander [*Ambystoma laterale*]), and one reptile (smooth green snake [*Liochlorophis vernalis*]) are listed as "Species in Greatest Need of Conservation for Illinois." Based on information provided by the IDNR and the Illinois Natural Heritage Database (dated July 11, 2011), there are no State Designated Lands within the project limits.

As per Environmental commitments, Milburn Creek and the Tributary to Milburn Creek within the Central Section of the project are identified ADID locations, Based on discussions with the USACE, USFWS, and the USEPA as part of the NEPA/404 project coordination, impacts to these sites are to be minimized and accommodations for the movement of small to medium size terrestrial wildlife are to be accommodated to the extent feasible.

O. The following sensitive environmental resources are associated with this project, and may have the potential to be impacted by the proposed development:

- Floodplain
- Wetland Riparian
- Threatened and Endangered Species
- Historic Preservation
- 303(d) Listed receiving waters for suspended solids, turbidity, or siltation
- Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity, or siltation
- Applicable Federal, Tribal, State or Local Programs
- Other

1. 303(d) Listed receiving waters (fill out this section if checked above):

N/A

a. The name(s) of the listed water body, and identification of all pollutants causing impairment:

N/A

b. Provide a description of how erosion and sediment control practices will prevent a discharge of sediment resulting from a storm event equal to or greater than a twenty-five (25) year, twenty-four (24) hour rainfall event:

N/A

c. Provide a description of the location(s) of direct discharge from the project site to the 303(d) water body:

N/A

d. Provide a description of the location(s) of any dewatering discharges to the MS4 and/or water body:

N/A

2. TMDL (fill out this section if checked above)

a. The name(s) of the listed water body:

N/A

b. Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL:

N/A

c. If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet the allocation:

N/A

P. The following pollutants of concern will be associated with this construction project:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Soil Sediment             | <input checked="" type="checkbox"/> Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids) |
| <input checked="" type="checkbox"/> Concrete                  | <input checked="" type="checkbox"/> Antifreeze / Coolants  |
| <input checked="" type="checkbox"/> Concrete Truck waste      | <input checked="" type="checkbox"/> Waste water from cleaning construction equipment               |
| <input checked="" type="checkbox"/> Concrete Curing Compounds | <input type="checkbox"/> Other (specify) _____   |
| <input checked="" type="checkbox"/> Solid waste Debris        | <input type="checkbox"/> Other (specify) _____   |
| <input checked="" type="checkbox"/> Paints                    | <input type="checkbox"/> Other (specify) _____   |
| <input checked="" type="checkbox"/> Solvents                  | <input type="checkbox"/> Other (specify) _____   |
| <input checked="" type="checkbox"/> Fertilizers / Pesticides  | <input type="checkbox"/> Other (specify) _____   |

**II. Controls**

This section of the plan addresses the controls that will be implemented for each of the major construction activities described in I.C. above and for all use areas, borrow sites, and waste sites. For each measure discussed, the Contractor will be responsible for its implementation as indicated. The Contractor shall provide to the Resident Engineer a plan for the implementation of the measures indicated. The Contractor and subcontractors, will notify the Resident Engineer of any proposed changes, maintenance, or modifications to keep construction activities compliant with the Permit ILR10. Each such Contractor has signed the required certification on forms which are attached to, and are a part of, this plan:

- A. **Erosion and Sediment Controls:** At a minimum, controls must be coordinated, installed, and maintained to:
1. Minimize the amount of soil exposed during construction activity;
  2. Minimize the disturbance of steep slopes;
  3. Maintain natural buffers around surface waters, direct storm water to vegetated areas to increase sediment removal and maximize storm water infiltration, unless infeasible;
  4. Minimize soil compaction and, unless infeasible, preserve topsoil.
- B. **Stabilization Practices:** Provided below is a description of interim and permanent stabilization practices, including site- specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include but are not limited to: temporary seeding, permanent seeding, mulching, geotextiles, sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided below in II(B)(1) and II(B)(2), stabilization measures shall be initiated **immediately** where construction activities have temporarily or permanently ceased, but in no case more than **one (1) day** after the construction activity in that portion of the site has temporarily or permanently ceases on all disturbed portions of the site where construction will not occur for a period of fourteen (14) or more calendar days.
1. Where the initiation of stabilization measures is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.
  2. On areas where construction activity has temporarily ceased and will resume after fourteen (14) days, a temporary stabilization method can be used.

The following stabilization practices will be used for this project:

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Preservation of Mature Vegetation | <input checked="" type="checkbox"/> Erosion Control Blanket / Mulching    |
| <input type="checkbox"/> Vegetated Buffer Strips                      | <input checked="" type="checkbox"/> Sodding                               |
| <input checked="" type="checkbox"/> Protection of Trees               | <input checked="" type="checkbox"/> Geotextiles                           |
| <input checked="" type="checkbox"/> Temporary Erosion Control Seeding | <input checked="" type="checkbox"/> Other (specify) <u>Mulch Method 2</u> |
| <input checked="" type="checkbox"/> Temporary Turf (Seeding, Class 7) | <input checked="" type="checkbox"/> Other (specify) <u>Mulch Method 3</u> |
| <input checked="" type="checkbox"/> Temporary Mulching                | <input type="checkbox"/> Other (specify) _____                            |
| <input checked="" type="checkbox"/> Permanent Seeding                 | <input type="checkbox"/> Other (specify) _____                            |

Describe how the stabilization practices listed above will be utilized during construction:



The area within the limits of the project will be improved and managed for the purpose of controlling erosion within the area, reducing water flow by temporary diversion and minimizing siltation off of the construction area. Stabilization controls runoff volume and velocity, peak runoff rates and volumes of discharge to minimize exposed soil, disturbed slopes, sediment discharges from construction, and provides for natural buffers and minimization of soil compaction. Existing vegetated areas where disturbance can be avoided will not require stabilization. Temporary seeding will be applied on bare vegetated grounds and highly erodible areas. Temporary seed shall be applied weekly regardless of the weather or work progress on disturbed areas that will not be disturbed for 14 days or more. Mulch Method 2 should be applied to slopes 1V:4H or flatter for temporary stabilization prior to season when temporary seed will not germinate, for example in mid-July or in winter. Mulch Method 3 should be applied to slopes not steeper than 1V:3H for temporary stabilization prior to season when temporary seed will not germinate, for example in mid-July or in winter. Temporary stabilization with polymer, straw mulch at a rate of 2 ton/acre, or temporary seeding must be used to stabilize construction areas where construction activity is halted for more than 14 days. Temporary stabilization must occur within 7 days of stopping construction. Both mulch and/or temporary seeding must include polymer in addition to the mix. Mulch and Erosion Control Blankets shall be applied in accordance with the plans and used at different slope conditions. Perimeter erosion barrier and temporary fence will be utilized in order to manage water draining off of the construction areas.

Describe how the stabilization practices listed above will be utilized after construction activities have been completed:

Once permanent erosion control measures (permanent seeding and erosion control blankets/mulch) are established and working properly, the temporary erosion control measures shall be removed, cleaned up, and all disturbed areas shall be re-seeded.

- C. **Structural Practices:** Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include but are not limited to: perimeter erosion barrier, earth dikes, drainage swales, sediment traps, ditch checks, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. The installation of these devices may be subject to Section 404 of the Clean Water Act.

The following stabilization practices will be used for this project:

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Perimeter Erosion Barrier     | <input checked="" type="checkbox"/> Rock Outlet Protection                                    |
| <input checked="" type="checkbox"/> Temporary Ditch Check         | <input checked="" type="checkbox"/> Riprap  |
| <input checked="" type="checkbox"/> Storm Drain Inlet Protection  | <input type="checkbox"/> Gabions  |
| <input type="checkbox"/> Sediment Trap                            | <input type="checkbox"/> Slope Mattress   |
| <input type="checkbox"/> Temporary Pipe Slope Drain               | <input checked="" type="checkbox"/> Retaining Walls   |
| <input type="checkbox"/> Temporary Sediment Basin                 | <input type="checkbox"/> Slope Walls  |
| <input type="checkbox"/> Temporary Stream Crossing                | <input type="checkbox"/> Concrete Revetment Mats  |
| <input checked="" type="checkbox"/> Stabilized Construction Exits | <input type="checkbox"/> Level Spreaders  |
| <input type="checkbox"/> Turf Reinforcement Mats                  | <input checked="" type="checkbox"/> Other (specify) <u>Stabilized Flow line</u>               |
| <input type="checkbox"/> Permanent Check Dams                     | <input checked="" type="checkbox"/> Other (specify) <u>In-Stream (and wetlands) work plan</u> |
| <input type="checkbox"/> Permanent Sediment Basin                 | <input type="checkbox"/> Other (specify) _____  |
| <input type="checkbox"/> Aggregate Ditch                          | <input type="checkbox"/> Other (specify) _____  |
| <input type="checkbox"/> Paved Ditch                              | <input type="checkbox"/> Other (specify) _____  |

Describe how the structural practices listed above will be utilized during construction:

Waters of the US within or adjacent to the project and locations where slopes drain away from the project will be protected with perimeter erosion barrier. Perimeter erosion barrier to be installed prior to any earth-disturbing activities and maximum drainage area for sheet-flow runoff to a silt fence should not exceed 0.5 acres per 100 feet of fence.

All storm sewer inlet structures must be protected with storm sewer inlet protection (i.e Inlet Filters) per inlet protection details in the plan. Storm sewer inlet protection to be installed prior to any earth-disturbing activities, Protects every storm drain inlet receiving or having potential of receiving sediment-laden runoff from a construction site and require frequent inspection and cleaning to prevent sediment from overflowing into device.

Silt fence should only be used as PEB in areas where the work area is higher than the perimeter. The use of silt fence at the top of the slope/elevations higher than the work area should always be avoided. If necessary, temporary fence should be utilized in these locations (where the top of slope/elevation is higher than the work area) in lieu of silt fence.

Temporary ditch checks to be placed perpendicular to flow and stake through mesh on the down slope side on an approximately 45 degree angle toward the up slope side in swales or shallow drainage ditches to reduce velocity of flowing water, thereby reducing scour and channel erosion.

Temporary construction entrances and exits must be constructed at all locations where construction traffic enters or leaves the site. Stabilized construction exits to be installed prior to major land-disturbing activities and locate on level ground where possible. Properly grade each construction exit away from roadway to prevent runoff from leaving construction site.

All work associated with installation and maintenance of Stabilized Construction Entrances, concrete washouts, and in-stream work (including work within wetlands) are incidental to the contract.

If the Contractor chooses to use a dedicated concrete plant, it is up to the Contractor to secure an Industrial Permit for the dedicated concrete plant. The Contractor must also submit a plan to the RE detailing how all storm water associated with the dedicated concrete plant will be kept separate from the storm water generated by the construction activities. The Contractor must ensure compliance with all requirements of the Industrial Permit.

The Contractor should provide to the RE a plan to ensure that a stabilized flow line will be provided during storm sewer construction. The use of stabilized flow line between installed storm sewer and open disturbance will reduce the potential for the offsite discharge of sediment bearing water, particularly when rain is forecasted so that flow will not erode. Lack of an approved plan or failure to comply will result in an ESC Deficiency Deduction.

All temporary erosion control methods shall remain in place with proper maintenance until permanent erosion control is in place and working properly and all turf areas are seeded and established.

THIS PROJECT REQUIRES A U.S. ARMY CORPS OF ENGINEERS (USACE) 404 PERMIT THAT WILL BE SECURED BY THE DEPARTMENT. AS A CONDITION OF THIS PERMIT, THE CONTRACTOR WILL NEED TO SUBMIT AN IN-STREAM (AND WETLANDS) WORK PLAN TO THE DEPARTMENT FOR APPROVAL. GUIDELINES ON ACCEPTABLE IN-STREAM WORK TECHNIQUES CAN BE FOUND ON THE USACE WEBSITE. THE USACE DEFINES AND DETERMINES IN-STREAM (AND WETLAND) WORK. THE COST OF ALL MATERIALS AND LABOR NECESSARY TO COMPLY WITH THE ABOVE PROVISIONS TO PREPARE AND IMPLEMENT AN IN-STREAM WORK PLAN WILL NOT BE PAID SEPARATELY BUT SHALL BE CONSIDERED AS INCLUDED IN THE UNIT BID PRICES OF THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

Describe how the structural practices listed above will be utilized after construction activities have been completed:

Once permanent erosion control methods as proposed in construction plans are established, temporary items shall be removed and disturbed turf re-seeded.

**D. Treatment Chemicals**

Will polymer flocculents or treatment chemicals be utilized on this project:  Yes  No

If yes above, identify where and how polymer flocculents or treatment chemicals will be utilized on this project.

N/A

**E. Permanent Storm Water Management Controls:** Provided below is a description of measures that will be installed during the construction process to control volume and pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water act.

1. Such practices may include but are not limited to: storm water detention structures (including wet ponds), storm water retention structures, flow attenuation by use of open vegetated swales and natural depressions, infiltration of runoff on site, and sequential systems (which combine several practices).

The practices selected for implementation were determined on the basis of the technical guidance in Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT Bureau of Design & Environment Manual. If practices other than those discussed in Chapter 41 are selected for implementation or if practices are applied to situations different from those covered in Chapter 41, the technical basis for such decisions will be explained below.

2. Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g. maintenance of hydrologic conditions such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of permanent storm water management controls:

Detention Ponds will provide treatment to the roadway and sheet flow runoff prior to the site outfall.

**F. Approved State or Local Laws:** The management practices, controls, and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Illinois Urban Manual. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans, site permits, storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI, to be authorized to discharge under the Permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

All management practices, controls, and other provisions provided in this plan are in accordance with "IDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" and the Lake County Watershed Development Ordinance.

**G. Contractor Required Submittals:** Prior to conducting any professional services at the site covered by this plan, the Contractor and each subcontractor responsible for compliance with the permit shall submit to the Resident Engineer a Contractor Certification Statement, BDE 2342a.

1. The Contractor shall provide a construction schedule containing an adequate level of detail to show major activities with implementation of pollution prevention BMPs, including the following items:

- Approximate duration of the project, including each stage of the project
  - Rainy season, dry season, and winter shutdown dates
  - Temporary stabilization measures to be employed by contract phases
  - Mobilization time frame
  - Mass clearing and grubbing/roadside clearing dates
  - Deployment of Erosion Control Practices
  - Deployment of Sediment Control Practices (including stabilized construction entrances/exits)
  - Deployment of Construction Site Management Practices (including concrete washout facilities, chemical storage, refueling locations, etc.)
  - Paving, saw-cutting, and any other pavement related operations
  - Major planned stockpiling operations
  - Time frame for other significant long-term operations or activities that may plan non-storm water discharges such as dewatering, grinding, etc.
  - Permanent stabilization activities for each area of the project
2. The Contractor and each subcontractor shall provide, as an attachment to their signed Contractor Certification Statement, a discussion of how they will comply with the requirements of the permit in regard to the following items and provide a graphical representation showing location and type of BMPs to be used when applicable:
- Vehicle Entrances and Exits - Identify type and location of stabilized construction entrances and exits to be used and how they will be maintained.
  - Material delivery, Storage, and Use - Discuss where and how materials including chemicals, concrete curing compounds, petroleum products, etc. will be stored for this project.
  - Stockpile Management - Identify the location of both on-site and off-site stockpiles. Discuss what BMPs will be used to prevent pollution of storm water from stockpiles.
  - Waste Disposal - Discuss methods of waste disposal that will be used for this project.
  - Spill Prevention and Control - Discuss steps that will be taken in the event of a material spill (chemicals, concrete curing compounds, petroleum, etc.).
  - Concrete Residuals and Washout Wastes - Discuss the location and type of concrete washout facilities to be used on this project and how they will be signed and maintained.
  - Litter Management - Discuss how litter will be maintained for this project (education of employees, number of dumpsters, frequency of dumpster pick-up, etc.).
  - Vehicle and Equipment Cleaning and Maintenance - Identify where equipment cleaning and maintenance locations for this project and what BMPs will be used to ensure containment and spill prevention.
  - Dewatering Activities - Identify the controls which will be used during dewatering operations to ensure sediments will not leave the construction site.
  - Polymer Flocculants and Treatment Chemicals - Identify the use and dosage of treatment chemicals and provide the Resident Engineer with Material Safety Data Sheets. Describe procedures on how the chemicals will be used and identify who will be responsible for the use and application of these chemicals. The selected individual must be trained on the established procedures.
  - Additional measures indicated in the plan.

### III. Maintenance

When requested by the Contractor, the Resident Engineer will provide general maintenance guides to the Contractor for the practices associated with this project. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. It will be Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

Perimeter erosion barrier - sediment will be removed if the integrity of the fencing is lacking and any downed fencing will be repaired.  
Seeding - all erodible bare earth will be seeded regularly to minimize the amount of erodible surface within the construction limits.  
Erosion Control Blanket/Mulching - Any areas that fail will be repaired immediately.  
Protection of Trees/Temporary Tree Protection - Any protective measures which are knocked down will be repaired immediately.  
Ditch Checks - Sediment will be removed if the integrity of the ditch check is in jeopardy. Any ditch checks which fail will be repaired or repalced immediately.  
All maintenance of erosion control systems will be the repsonsibility of the contractor until construcion is complete and accepted by IDOT after final inspection. All locations where vehicles enter and exit the construction site and all other areas subject to erosion should also be inspected periodically.  
All vegetation, erosion and sediment control measures and other protective measures identified in this plan must be maintained in good and effective operating conditions.

#### IV. Inspections

Qualified personnel shall inspect disturbed areas of the construction site which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site using IDOT Storm Water Pollution Prevention Plan Erosion Control Inspection Report (BC 2259). Such inspections shall be conducted at least once every seven (7) calendar days and within twenty-four (24) hours of the end of a storm or by the end of the following business or work day that is 0.5 inch or greater or equivalent snowfall.

Inspections may be reduced to once per month when construction activities have ceased due to frozen conditions. Weekly inspections will recommence when construction activities are conducted, or if there is 0.5" or greater rain event, or a discharge due to snowmelt occurs.

If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer shall notify the appropriate IEPA Field Operations Section office by e-mail at: [epa.swnoncomp@illinois.gov](mailto:epa.swnoncomp@illinois.gov), telephone or fax within twenty-four (24) hours of the incident. The Resident Engineer shall then complete and submit an "Incidence of Non-Compliance" (ION) report for the identified violation within five (5) days of the incident. The Resident Engineer shall use forms provided by IEPA and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of non-compliance shall be signed by a responsible authority in accordance with Part VI. G of the Permit ILR10.

The Incidence of Non-Compliance shall be mailed to the following address:

Illinois Environmental Protection Agency  
Division of Water Pollution Control  
Attn: Compliance Assurance Section  
1021 North Grand East  
Post Office Box 19276  
Springfield, Illinois 62794-9276

Additional Inspections Required:

All Offsite Borrow, Waste, and Use areas are part of the construction site and are to be inspected according to the language in this section.

Additionally, the following note on Borrow, Waste and Use areas should be included in the Plan Set's General Notes:

THE DEPARTMENT HAS NOT OBTAINED ANY PERMITS FOR OFFSITE BORROW, WASTE, USE (BWU) AREAS. PRIOR TO WORKING IN BWU AREAS, IF THE CONTRACTOR CHOOSES TO USE ACTIVITIES REQUIRING PERMITS IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE THE PROPER PERMITS. IN ADDITION TO THE BORROW REVIEW (BDE 2289) and USE/WASTE REVIEW (BDE 2290) SUBMITTALS, THE CONTRACTOR SHALL SUBMIT AN EROSION AND SEDIMENT CONTROL (ESC) PLAN FOR EVERY BWU SITE TO THE DEPARTMENT FOR ACCEPTANCE. GUIDELINES FOR ACCEPTABLE BWU PRACTICES CAN BE FOUND IN SECTIONS II.G.1 AND 2 OF THE SWPPP. THE COST OF ALL MATERIALS AND LABOR NECESSARY TO COMPLY WITH THE ABOVE PROVISIONS TO PREPARE AND IMPLEMENT ESC PLANS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED AS INCLUDED IN THE UNIT BID PRICES OF THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED

**V. Failure to Comply**

Failure to comply with any provisions of this Storm Water Pollution Prevention Plan will result in the implementation of a National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction against the Contractor and/or penalties under the Permit ILR10 which could be passed on to the Contractor.



**Contractor Certification Statement**



Prior to conducting any professional services at the site covered by this contract, the Contractor and every subcontractor must complete and return to the Resident Engineer the following certification. A separate certification must be submitted by each firm. Attach to this certification all items required by Section II.G of the Storm Water Pollution Prevention Plan (SWPPP) which will be handled by the Contractors/subcontractor completing this form.

Route FAP Route 344	Marked Route US Route 45 and Grass Lake Rd I	Section 39 R
Project Number C-91-424-12	County Lake County, IL	Contract Number 60T75

This certification statement is a part of SWPPP for the project described above, in accordance with the General NPDES Permit No. ILR10 issued by the Illinois Environmental Protection Agency.

I certify under penalty of law that I understand the terms of the Permit No. ILR10 that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

In addition, I have read and understand all of the information and requirements stated in SWPPP for the above mentioned project; I have received copies of all appropriate maintenance procedures; and, I have provided all documentation required to be in compliance with the Permit ILR10 and SWPPP and will provide timely updates to these documents as necessary.

- Contractor
- Sub-Contractor

Print Name  	Signature  
Title  	Date  
Name of Firm  	Telephone  
Street Address  	City/State/Zip  

Items which the Contractor/subcontractor will be responsible for as required in Section II.G. of SWPPP:

**404 PERMIT**



REPLY TO  
ATTENTION OF:

**DEPARTMENT OF THE ARMY**  
CHICAGO DISTRICT, CORPS OF ENGINEERS  
231 SOUTH LA SALLE STREET  
CHICAGO, ILLINOIS 60604-1437

November 8, 2017

Technical Services Division  
Regulatory Branch  
LRC-2015-00244

SUBJECT: Milburn Bypass - F.A.P. ROUTE 344 (U.S. ROUTE 45), Villages of Lindenhurst & Mill Creek, Lake County, Illinois (Latitude 42.42390, Longitude -88.00418)

Anthony Quigley  
Illinois Department of Transportation  
201 West Center Court  
Schaumburg, Illinois 60196-1096

Dear Mr. Quigley:

This office has verified that your proposed activity complies with the terms and conditions of Regional Permit 3 and the General Conditions for all activities authorized under the Regional Permit Program.

This verification expires three (3) years from the date of this letter and covers only your activity as described in your notification and as shown on the plans entitled "F.A.P. Route 344 (U.S. Route 45) - Section: 39R - Project: From Country Place to North of Independence Boulevard Reconstruction and Realignment Lake County - C-91-424-12, dated 2/2/2017, updated 11/3/2017. Caution must be taken to prevent construction materials and activities from impacting waters of the United States beyond the scope of this authorization. If you anticipate changing the design or location of the activity, you should contact this office to determine the need for further authorization.

The activity may be completed without further authorization from this office provided the activity is conducted in compliance with the terms and conditions of the RPP, including conditions of water quality certification issued under Section 401 of the Clean Water Act by the Illinois Environmental Protection Agency (IEPA). If the design, location, or purpose of the project is changed, you should contact this office to determine the need for further authorization.

The following special conditions are a requirement of your authorization:

1. You are required to retain a qualified Independent SESC Inspector (ISI). The following requirements apply:
  - a. You shall contact this office and the ISI at least 10 calendar days prior to the preconstruction meeting so that a representative of this office may attend. The



- 2 -

- 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 disclose the contractor's preferred method of cofferdam and dewatering method;
  - c. The ISI will perform weekly inspections of the implemented SESC measures to ensure proper installation and regular maintenance of the approved methods. The ISI contact information form shall be submitted to this office via e-mail and/or hard copy prior to commencement of the permitted work;
  - d. The ISI shall submit to the Corps an inspection report with digital photographs of the SESC measures on a weekly basis during the active and non-active phases of construction. An inspection report shall also be submitted at the completion of the project once the SESC measures have been removed and final stabilization has been completed; and
  - e. Field conditions during project construction may require the implementation of additional SESC measures not included in the SESC plans for further protection of aquatic resources. You shall contact this office immediately in the event of any changes or modifications to the approved plan set or non-compliance of an existing SESC method. Upon direction of the Corps, corrective measure shall be instituted at the site to resolve the problem along with a plan to protect and/or restore the impacted jurisdictional area(s). If you fail to implement corrective measures, this office may require more frequent site inspections to ensure the installed SESC measures are acceptable.
2. Prior to commencement of work, you shall submit constructions plans and a narrative of the contractor's preferred method of cofferdam. Work in the waterway shall not commence until this office notifies you, in writing, that the plans have been approved.
  3. Under no circumstances shall the Contractor prolong final grading and shaping so that the entire project can be permanently seeded at one time. Permanent stabilization within the wetland and stream buffers identified in the plans shall be initiated immediately following the completion of work. Final stabilization of these areas should not be delayed due to utility work to be performed by others.
  4. This site is within the aboriginal homelands of several American Indian Tribes. If any human remains, Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA), or archaeological evidence are discovered during any phase of this project, interested Tribes request immediate consultation with the entity of jurisdiction for the location of discovery. In such case, please contact Julie Rimbault by telephone at 312-846-5542, or email at [Julie.C.Rimbault@usace.army.mil](mailto:Julie.C.Rimbault@usace.army.mil).
  5. You are responsible for all work authorized herein and for ensuring that all contractors are aware of the terms and conditions of this authorization.

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6. A copy of this authorization must be present at the project site during all phases of construction.
7. 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.
8. You shall notify this office prior to the transfer of this authorization and liabilities associated with compliance with its terms and conditions.
9. You shall fully implement the practices identified in the Best Management Practices (BMP) Maintenance and Monitoring Plan titled, "USACE # LRC-2015-00244 F.A.P. Route 344 (U.S. Route 45), Country Place to north of Independence Boulevard, Lake County, Illinois", dated May 2017, updated November 2017, prepared by Illinois Department of Transportation, within the first year of project construction. All BMP's shall meet performance criteria in accordance with the approved document. Your responsibility to complete the plan 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.
10. 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.
11. 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.
12. 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.
13. 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.
14. 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.

- 4 -

15. During dewatering of the coffered work area, all sediment-laden water must be filtered to remove sediment. Possible options for sediment removal include baffle 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.
16. 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.

This office is in receipt of a copy the Mitigation Ledger for Prairie Green confirming your purchase of 1.128 mitigation credits.

The authorization is without force and effect until all other permits or authorizations from local, state, or other Federal agencies are secured. Please note that IEPA has issued Section 401 Water Quality Certification for this RP. These conditions are included in the enclosed fact sheet. If you have any questions regarding Section 401 certification, please contact Mr. Dan Heacock at IEPA's Division of Water Pollution Control, Permit Section #15, by telephone at (217) 782-3362.

Once you have completed the authorized activity, please sign and return the enclosed compliance certification. If you have any questions, please contact Julie Rimbault of my staff by telephone at (312) 846-5542, or email at [Julie.C.Rimbault@usace.army.mil](mailto:Julie.C.Rimbault@usace.army.mil).

Sincerely,

CHERNICH.K  
ATHLEEN.G.  
1230365616  
Kathleen G. Chernich  
Chief, East Section  
Regulatory Branch

Digitally signed by  
CHERNICH.KATHLEEN.G.123036  
5616  
DN: cn=US, o=U.S. Government,  
ou=DoD, ou=PII, ou=USA,  
on=CHERNICH.KATHLEEN.G.123  
0365616  
Date: 2017.11.13 17:36:29 -0600

Enclosures

Copy Furnished:

Huff & Huff (Alycia Klunenbergl)  
IDOT (Ken Eng)



**PERMIT COMPLIANCE  
CERTIFICATION**

Permit Number: LRC-2015-00244  
Permittee: Anthony Quigley  
Illinois Department of Transportation  
Date: November 8, 2017

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.<sup>1</sup>

\_\_\_\_\_  
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  
231 South LaSalle Street, Suite 1500  
Chicago, Illinois 60604-1437

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.

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<sup>1</sup>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.

## GENERAL CONDITIONS



US Army Corps of Engineers®  
Chicago District

### GENERAL CONDITIONS APPLICABLE TO THE 2012 REGIONAL PERMIT PROGRAM

The permittee shall comply with the terms and conditions of the Regional Permits and the following general conditions for all activities authorized under the RPP:

1. State 401 Water Quality Certification - Water quality certification under Section 401 of the Clean Water Act may be required from the Illinois Environmental Protection Agency (IEPA). The District may consider water quality, among other factors, in determining whether to exercise discretionary authority and require an Individual Permit. Please note that Section 401 Water Quality Certification is a requirement for projects carried out in accordance with Section 404 of the Clean Water Act. Projects carried out in accordance with Section 10 of the Rivers and Harbors Act of 1899 do not require Section 401 Water Quality Certification

On March 2, 2012, the IEPA granted Section 401 certification, with conditions, for all Regional Permits, except for activities in certain waterways noted under RPs 4 and 8. The following conditions of the certification are hereby made conditions of the RPP:

1. The applicant shall not cause:
  - a) 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;
  - d) a violation of applicable provisions of the Illinois Environmental Protection Act.
2. 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.
3. Except as allowed under condition 9, 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 the Illinois EPA. Any backfilling must be done with clean material placed in a manner to prevent violation of applicable water quality standards.
4. 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 soil erosion during construction shall be taken and may include the installation of sedimentation basins and temporary mulching. All construction within the waterway shall be conducted during zero or low flow conditions. The applicant shall be responsible for obtaining a NPDES Stormwater 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. A NPDES Stormwater Permit may be obtained by submitting a properly completed Notice of Intent (NOI) form by certified mail to the Illinois EPA's Division of Water Pollution Control, Permit Section.
5. The applicant shall implement erosion control measures consistent with the Illinois Urban Manual (IEPA/USDA, NRCS; 2011, <http://aiswcd.org/IUM/index.html>).
6. The applicant is advised that the following permits(s) must be obtained from the Illinois EPA: The applicant must obtain permits to construct sanitary sewers, water mains, and related facilities prior to construction.
7. Backfill used in the stream-crossing trench shall be predominantly sand or larger size material, with less than 20% passing a #230 U.S. sieve.
8. Any channel relocation shall be constructed under dry conditions and stabilized to prevent erosion prior to the diversion of flow.
9. Backfill used within trenches passing through surface waters of the State, except wetland areas, shall be clean course aggregate, gravel or other material which will not cause siltation, pipe damage during placement, or chemical corrosion in place. Excavated material may be used only if:
  - a) particle size analysis is conducted and demonstrates the material to be at least 80% sand or larger size material, using #230 U.S. sieve; or
  - b) excavation and backfilling are done under dry conditions.
10. Backfill used within trenches passing through wetland areas shall consist of clean material which will not cause siltation, pipe damage during placement, or chemical corrosion in place. Excavated material shall be used to the extent practicable, with the upper six (6) to twelve (12) inches backfilled with the topsoil obtained during trench excavation.
11. Any applicant proposing activities in a mined area or previously mined area shall provide to the IEPA a written determination regarding the sediment and materials used which are considered "acid-producing material" as defined in 35 Il. Adm. Code,

Subtitle D. If considered "acid-producing material," the applicant shall obtain a permit to construct pursuant to 35 Il. Adm. Code 404.101.

12. 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/stream banks, or 3) placed in waters of the State.
13. Applicants that use site dewatering techniques in order to perform work in waterways for construction activities approved under Regional Permits 1 (Residential, Commercial and Institutional Developments), 2 (Recreation Projects), 3 (Transportation Projects), 7 (Temporary Construction Activities), 9 (Maintenance) or 12 (Bridge Scour Protection) shall maintain flow in the stream during such construction activity by utilizing dam and pumping, fluming, culverts or other such techniques.
14. In addition to any action required of the Regional Permit 13 (Cleanup of Toxic and Hazardous Materials Projects) applicant with respect to the "Notification" General Condition 22, the applicant shall notify the Illinois EPA Bureau of Water, of the specific activity. This notification shall include information concerning the orders and approvals that have been or will be obtained from the Illinois EPA Bureau of Land (BOL) for all cleanup activities under BOL jurisdiction, or for which authorization or approval is sought from BOL for no further remediation. This Regional Permit is not valid for activities that do not require or will not receive authorization or approval from the BOL.

2. Threatened and Endangered Species - If the District determines that the activity may affect Federally listed species or critical habitat, the District will initiate section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) in accordance with the Endangered Species Act of 1973, as amended (Act). Applicants shall provide additional information that would enable the District to conclude that the proposed action will have no effect on federally listed species.

The application packet shall indicate whether resources (species, their suitable habitats, or critical habitat) listed or designated under the Act, may be present within areas affected (directly or indirectly) by the proposed project. Applicants shall provide a section 7 species list for the action area using the on-line process at the USFWS website. You can access "U.S. Fish and Wildlife Service Endangered Species Program of the Upper Midwest" website at [www.fws.gov/midwest/Endangered](http://www.fws.gov/midwest/Endangered). Click on the section 7 Technical Assistance green shaded box in the lower right portion of the screen and follow the instructions to completion. Review all documentation pertaining to the species list, provide the rationale for your effects determination for each species, and send the information to this office for review.

If no species, their suitable habitats, or critical habitat are listed, then a "no effect" determination can be made, and section 7 consultation is not warranted. If species or critical habitat appear on the list or suitable habitat is present within the action area, then a biological assessment or biological evaluation will need to be completed to determine if the proposed action will have "no effect" or "may effect" the species or suitable habitat. The District will request initiation of section 7 consultation with the USFWS upon agreement with the applicant on the effect determinations in the biological assessment or biological evaluation. If the issues are not resolved, the analysis of the situation is complicated, or impacts to listed species or critical habitat are found to be greater than minimal, the District will consider reviewing the project under the Individual Permit process.

Projects in Will, DuPage, or Cook Counties that are located in the recharge zones for Hine's emerald dragonfly critical habitat units may be reviewed under the RPP, with careful consideration due to the potential impacts to the species. All projects reviewed that are located within 3.25 miles of a critical habitat unit will be reviewed under Category II of the RPP. Please visit the following website for the locations of the Hine's emerald dragonfly critical habitat units in Illinois.  
<http://www.fws.gov/midwest/endangered/insects/hed/FRHinesFinalRevisedCH.html>

3. Historic Properties - In cases where the District determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity may require an Individual Permit. A determination of whether the activity may be authorized under the RPP instead of an Individual Permit will not be made until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the District with the appropriate documentation to demonstrate compliance with those requirements.

Non-Federal permittees must include notification to the District if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the permit application must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing permit submittals, the District will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. Based on the information submitted and these efforts, the District shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the District, the non-Federal applicant shall not begin the activity until notified by the District either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

The District will take into account the effects on such properties in accordance with 33 CFR Part 325, Appendix C, and 36 CFR 800. If all issues pertaining to historic properties have been resolved through the consultation process to the satisfaction of the District, Illinois Historic Preservation Agency (IHPA) and Advisory Council on Historic Preservation, the District may, at its discretion, authorize the activity under the RPP instead of an Individual Permit.

Applicants are encouraged to obtain information on historic properties from the IHPA and the National Register of Historic Places at the earliest stages of project planning. For information, contact:

Illinois Historic Preservation Agency  
1 Old State Capitol Plaza  
Springfield, IL 62701-1507  
(217) 782-4836  
www.illinoishistory.gov

If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity, you must immediately notify this office of what you have found, and to the maximum extent practicable, stop activities that would adversely affect those remains and artifacts until the required coordination has been completed. We will initiate the Federal, Tribal and State coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. Soil Erosion and Sediment Control - Measures shall be taken to control soil erosion and sedimentation at the project site to ensure that sediment is not transported to waters of the U.S. during construction. Soil erosion and sediment control measures shall be implemented before initiating any clearing, grading, excavating or filling activities. All temporary and permanent soil erosion and sediment control measures shall be maintained throughout the construction period and until the site is stabilized. All exposed soil and other fills, and any work below the ordinary high water mark shall be permanently stabilized at the earliest practicable date.

Applicants are required to prepare a soil erosion and sediment control (SESC) plan including temporary BMPs. The plan shall be designed in accordance with the Illinois Urban Manual, 2011 (<http://aiswcd.org/IUM/index.html>). Practice standards and specifications for measures outlined in the soil erosion and sediment control plans will follow the latest edition of the "Illinois Urban Manual: A Technical Manual Designed for Urban Ecosystem Protection and Enhancement." Additional Soil Erosion and Sediment Control (SESC) measures not identified in the Illinois Urban Manual may also be utilized upon District approval.

At the District's discretion, an applicant may be required to submit the SESC plan to the local Soil and Water Conservation District (SWCD), or the Lake County Stormwater Management Commission (SMC) for review. When the District requires submission of an SESC plan, the following applies: An activity may not commence until the SESC plan for the project site has been approved; The SWCD/SMC will review the plan and provide a written evaluation of its adequacy; A SESC plan is considered acceptable when the SWCD/SMC has found that it meets technical standards. Once a determination has been made, the authorized work may commence unless the SWCD/SMC has requested that they be notified prior to commencement of the approved plans. The SWCD/SMC may attend pre-construction meetings with the permittee and conduct inspections during construction to determine compliance with the plans. Applicants are encouraged to begin coordinating with the appropriate SWCD/SMC office at the earliest stages of project planning. For information, contact:

Kane-DuPage SWCD  
2315 Dean Street, Suite 100  
St. Charles, IL 60174  
(630) 584-7961 ext.3  
www.kanedupageswcd.org

McHenry-Lake County SWCD  
1648 South Eastwood Dr.  
Woodstock, IL 60098  
(815) 338-0099 ext.3  
www.mchenryswcd.org

North Cook SWCD  
899 Jay Street  
Elgin, IL 60120  
(847) 468-0071  
www.northcookswcd.org

Lake County SMC  
500 W. Winchester Rd, Suite 201  
Libertyville, IL 60048  
(847) 377-7700  
www.lakecountyil.gov/stormwater

5. Total Maximum Daily Load - For projects that include a discharge of pollutant(s) to waters for which there is an approved Total Maximum Daily Load (TMDL) allocation for any parameter, the applicant shall develop plans and BMPs that are consistent with the assumptions and requirements in the approved TMDL. The applicant must incorporate into their plans and BMPs any conditions applicable to their discharges necessary for consistency with the assumptions and requirements of the TMDL within any timeframes established in the TMDL. The applicant must carefully document the justifications for all BMPs and plans, and install, implement and maintain practices and BMPs that are consistent with all relevant TMDL allocations and with all relevant conditions in an implementation plan. Information regarding the TMDL program, including approved TMDL allocations, can be found at the following website: [www.epa.state.il.us/water/tmdl/](http://www.epa.state.il.us/water/tmdl/)

6. Floodplain - Discharges of dredged or fill material into waters of the United States within the 100-year floodplain (as defined by the Federal Emergency Management Agency) resulting in permanent above-grade fills shall be avoided and minimized to the maximum extent practicable. When such an above-grade fill would occur, the applicant may need to obtain approval from the Illinois

Department of Natural Resources, Office of Water Resources, (IDNR-OWR) which regulates activities affecting the floodway and the local governing agency (e.g., Village or County) with jurisdiction over activities in the floodplain. Compensatory storage may be required for fill within the floodplain. Applicants are encouraged to obtain information from the IDNR-OWR and the local governing agency with jurisdiction at the earliest stages of project planning. For information on floodway construction, contact:

IDNR/OWR  
2050 Stearns Road  
Bartlett, IL 60103  
(847) 608-3100  
<http://dnr.state.il.us/owr/>

For information on floodplain construction, please contact the local government and/or the Federal Emergency Management Agency. Pursuant to 33 CFR 320.4(j), the District will consider the likelihood of the applicant obtaining approval for above-ground permanent fills in floodplains in determining whether to issue authorization under the RPP.

7. Navigation - No activity may cause more than a minimal adverse effect on navigation. Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

8. Proper Maintenance - Any authorized structure or fill shall be properly maintained, including that necessary to ensure public safety.

9. Aquatic Life Movements - No activity may substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including species that normally migrate through the area, unless the activity's primary purpose is to impound water.

10. Equipment - Soil disturbance and compaction shall be minimized through the use of matting for heavy equipment, low ground pressure equipment, or other measures as approved by the District.

11. Wild and Scenic Rivers - No activity may occur in a component of the National Wild and Scenic River System or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status. Information on Wild and Scenic Rivers may be obtained from the appropriate land management agency in the area, such as the National Park Service and the U.S. Forest Service.

12. Tribal Rights - No activity or its operation may impair reserved tribal rights, such as reserved water rights, treaty fishing and hunting rights.

13. Water Supply Intakes - No discharge of dredged or fill material may occur in the proximity of a public water supply intake except where the discharge is for repair of the public water supply intake structures or adjacent bank stabilization.

14. Shellfish Production - No discharge of dredged or fill material may occur in areas of concentrated shellfish production.

15. Suitable Material - No discharge of dredged or fill material may consist of unsuitable material and material discharged shall be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act). Unsuitable material includes trash, debris, car bodies, asphalt, and creosote treated wood.

16. Spawning Areas - Discharges in spawning areas during spawning seasons shall be avoided to the maximum extent practicable.

17. Obstruction of High Flows - Discharges shall not permanently restrict or impede the passage of normal or expected high flows. All crossings shall be culverted, bridged or otherwise designed to prevent the restriction of expected high water flows, and shall be designed so as not to impede low water flows or the movement of aquatic organisms.

18. Impacts From Impoundments - If the discharge creates an impoundment of water, adverse impacts on aquatic resources caused by the accelerated passage of water and/or the restriction of its flow shall be avoided to the maximum extent practicable.

19. Waterfowl Breeding Areas - Discharges into breeding areas for migratory waterfowl shall be avoided to the maximum extent practicable.

20. Removal of Temporary Fills - Any temporary fill material shall be removed in its entirety and the affected area returned to its pre-existing condition.

21. Mitigation - All appropriate and practicable steps must first be taken to avoid and minimize impacts to aquatic resources. For unavoidable impacts, compensatory mitigation is required to replace the loss of wetland, stream, and/or other aquatic resource functions (33 CFR 332). The proposed compensatory mitigation shall utilize a watershed approach and fully consider the ecological needs of the watershed. Where an appropriate watershed plan is available, mitigation site selection should consider recommendations in the plan. The applicant shall describe in detail how the mitigation site was chosen and will be developed, based on the specific



resource need of the impacted watershed. Permit applicants are responsible for proposing an appropriate compensatory mitigation option to offset unavoidable impacts. However, the District is responsible for determining the appropriate form and amount of compensatory mitigation required when evaluating compensatory mitigation options, and determining the type of mitigation that would be environmentally preferable. In making this determination, the District will assess the likelihood for ecological success and sustainability, the location of the compensation site relative to the impact site and their significance within the watershed. Methods of providing compensatory mitigation include aquatic resource restoration, establishment, enhancement, and in certain circumstances, preservation. Compensatory mitigation will be accomplished by establishing a minimum ratio of 1.5 acres of mitigation for every 1.0 acre of impact to waters of the U.S. Furthermore, the District has the discretion to require additional mitigation to ensure that the impacts are no more than minimal. Further information is available at [www.lrc.usace.army.mil/Missions/Regulatory/Illinois/Mitigation.aspx](http://www.lrc.usace.army.mil/Missions/Regulatory/Illinois/Mitigation.aspx)

22. **Notification** - The applicant shall provide written notification (i.e., a complete application) for a proposed activity to be authorized under the RPP prior to commencing a proposed activity. The District's receipt of the complete application is the date when the District receives all required notification information from the applicant (see below). If the District informs the applicant within 60 calendar days that the notification is incomplete (i.e., not a complete application), the applicant shall submit to the District, in writing, the requested information to be considered for review under the Regional Permit Program. A new 60 day review period will commence when the District receives the requested information. Applications that involve unauthorized activities that are completed or partially completed by the applicant are not subject to the 60-day review period.

For all activities, notification shall include:

- a. A cover letter providing a detailed narrative of the proposed activity describing all work to be performed, a clear project purpose and need statement, the Regional Permit(s) to be used for the activity, the area (in acres) of waters of the U.S. to be impacted (be sure to specify if the impact is permanent or temporary, and identify which area it affects), and a statement that the terms and conditions of the RPP will be followed.
- b. A completed joint application form for Illinois signed by the applicant or agent. The application form is available at [www.lrc.usace.army.mil/Portals/36/docs/regulatory/forms/appform.pdf](http://www.lrc.usace.army.mil/Portals/36/docs/regulatory/forms/appform.pdf). If the applicant does not sign the joint application form, notification shall include a signed, written statement from the applicant designating the agent as their representative.
- c. A delineation of waters of the U.S., including wetlands, for the project area, and for areas adjacent to the project site (off-site wetlands shall be identified through the use of reference materials including review of local wetland inventories, soil surveys and the most recent available aerial photography), shall be prepared in accordance with the current U.S. Army Corps of Engineers methodology ([www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/reg\\_supp.aspx](http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/reg_supp.aspx)) and generally conducted during the growing season.\* Our wetland delineation standards are available at [www.lrc.usace.army.mil/Portals/36/docs/regulatory/pdf/Delineations.pdf](http://www.lrc.usace.army.mil/Portals/36/docs/regulatory/pdf/Delineations.pdf). For sites supporting wetlands, the delineation shall include a Floristic Quality Assessment (Swink and Wilhelm. 1994, latest edition, Plants of the Chicago Region). The delineation shall also include information on the occurrence of any high-quality aquatic resources (see Appendix A), and a listing of waterfowl, reptile and amphibian species observed while at the project area. The District reserves the right to exercise judgment when reviewing submitted wetland delineations. Flexibility of the requirements may be determined by the District on a case-by-case basis only.
- d. A street map showing the location of the project area.
- e. Latitude and longitude for the project in decimal degrees format (i.e. 41.88377N, -87.63960W).
- f. Preliminary engineering drawings sized 11" by 17" (full-sized may be requested by the project manager and you may also submit plans in PDF format on a disc) showing all aspects of the proposed activity and the location of waters of the U.S. to be impacted and not impacted. The plans shall include grading contours, proposed and existing structures such as buildings footprints, roadways, road crossings, stormwater management facilities, utilities, construction access areas and details of water conveyance structures. The plans shall also depict buffer areas, outlots or open space designations, best management practices, deed restricted areas and restoration areas, if required under the specific RP.
- g. Submittal of soil erosion and sediment control (SESC) plans that identify all SESC measures to be utilized during construction of the project.
- h. The application packet shall indicate whether resources (species, their suitable habitats, or critical habitat) listed or designated under the Endangered Species Act of 1973, as amended, may be present within areas affected (directly or indirectly) by the proposed project. Applicants shall provide a section 7 species list for the action area using the on-line process at the USFWS website. You can access "U.S. Fish and Wildlife Service Endangered Species Program of the Upper Midwest" website at [www.fws.gov/midwest/Endangered](http://www.fws.gov/midwest/Endangered). Click on the section 7 Technical Assistance green shaded box in the lower right portion of the screen and follow the instructions to completion. Print all documentation pertaining to the species list, include the rationale for your effects determination for each species, and forward the information to this office for review.

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\* If a wetland delineation is conducted outside of the growing season, the District will determine on a case-by-case basis whether sufficient evidence is available to make an accurate determination. If the District finds that the delineation lacks sufficient evidence, the application will not be considered complete until the information is provided. This may involve re-delineating the project site during the growing season.

In the event there are no species, their suitable habitats, or critical habitat, then a "no effect" determination can be made and section 7 consultation is not warranted. If species or critical habitat appear on the list, or suitable habitat is present within the action area, then a biological assessment or biological evaluation will need to be completed to determine if the proposed action will have "no effect" or "may effect" on the species or suitable habitat. The District will request initiation of section 7 consultation with the USFWS upon agreement with the applicant on the effect determinations in the biological assessment or biological evaluation. If the issues are not resolved, the analysis of the situation is complicated, or impacts to listed species or critical habitat are found to be greater than minimal, the District will consider reviewing the project under the Individual Permit process.

- i. A determination of the presence or absence of any State threatened or endangered species. Please contact the Illinois Department of Natural Resources (IDNR) to determine if any State threatened and endangered species could be in the project area. You can access the IDNR's Ecological Compliance Assessment Tool (EcoCAT) at the following website: <http://dnrecocat.state.il.us/ecopublic/>. Once you complete the EcoCAT and consultation process, forward all resulting information to this office for consideration. The report shall also include recommended methods as required by the IDNR for minimizing potential adverse effects of the project.
- j. A statement about the knowledge of the presence or absence of Historic Properties, which includes properties listed, or properties eligible to be listed in the National Register of Historic Places. A letter from the Illinois Historic Preservation Agency (IHPA) can be obtained indicating whether your project is in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. The permittee shall provide all pertinent correspondence with the IHPA documenting compliance. The IHPA has a checklist of documentation required for their review located here: [www.illinoishistory.gov/PS/rcdocument.htm](http://www.illinoishistory.gov/PS/rcdocument.htm).
- k. Where an appropriate watershed plan is available, the applicant shall address in writing how the proposed activity is aligned with the relevant water quality, hydrologic, and aquatic resource protection recommendations in the watershed plan.
- l. A discussion of measures taken to avoid and/or minimize impacts to aquatic resources on the project site.
- m. A compensatory mitigation plan for all impacts to waters of the U.S. (if compensatory mitigation is required under the specific RP).
- n. A written narrative addressing all items listed under the specific RP.

For Category II activities, the District will provide an Agency Request for Comments (ARC) which describes the proposed activity. The ARC will be sent to the following agencies: United States Fish & Wildlife Service (USFWS), United States Environmental Protection Agency (USEPA), Illinois Department of Natural Resources (IDNR), Illinois Department of Natural Resources/Office of Water Resources (IDNR/OWR), Illinois Environmental Protection Agency (IEPA), Illinois Historic Preservation Agency (IHPA), Illinois Nature Preserves Commission (INPC) and U.S. Coast Guard (Section 10 activities only). Additional entities may also be notified as needed. These agencies have ten (10) calendar days from the date of the ARC to contact the District and either provide comments or request an extension not to exceed fifteen (15) calendar days. The District will fully consider agency comments received within the specified time frame. If the District determines the activity complies with the terms and conditions of the RPP and impacts on aquatic resources are minimal, the District will notify the applicant in writing and include special conditions if deemed necessary. If the District determines that the impacts of the proposed activity are more than minimal, the District will notify the applicant that the project does not qualify for authorization under the RPP and instruct the applicant on the procedures to seek authorization under an Individual Permit.

23. Compliance Certification - Any permittee who has received authorization under the RPP from the District shall submit a signed certification regarding the completed work and any required mitigation. The certification will be forwarded by the District with the authorization letter and will include: a) a statement that the authorized work was done in accordance with the District's authorization, including any general or specific conditions; b) a statement that any required mitigation was completed in accordance with the permit conditions and; c) the signature of the permittee certifying the completion of the work and mitigation.

24. Multiple use of Regional Permits - In any case where a Regional Permit is combined with any other Regional Permit to cover a single and complete project (except where prohibited under specific Regional Permits), the applicant shall notify the District in accordance with General Condition 22. If multiple Regional Permits are used, the total impact may not exceed the maximum allowed by the Regional Permit with the greatest impact threshold.

25. Other Restrictions - Authorization under the RPP does not obviate the need to obtain other Federal, State or local permits, approvals, or authorizations required by law nor does it grant any property rights or exclusive privileges, authorize any injury to the property or rights of others or authorize interference with any existing or proposed Federal project.

Approved by:

//ORIGINAL SIGNED//

Frederic A. Drummond, Jr.  
Colonel, U.S. Army  
District Commander

February 24, 2012

Date

## **REVISIONS TO THE ILLINOIS PREVAILING WAGE RATES**

The Prevailing rates of wages are included in the Contract proposals which are subject to Check Sheet #5 of the Supplemental Specifications and Recurring Special Provisions. The rates have been ascertained and certified by the Illinois Department of Labor for the locality in which the work is to be performed and for each craft or type of work or mechanic needed to execute the work of the Contract. As required by Prevailing Wage Act (820 ILCS 130/0.01, et seq.) and Check Sheet #5 of the Contract, not less than the rates of wages ascertained by the Illinois Department of Labor and as revised during the performance of a Contract shall be paid to all laborers, workers and mechanics performing work under the Contract. Post the scale of wages in a prominent and easily accessible place at the site of work.

If the Illinois Department of Labor revises the prevailing rates of wages to be paid as listed in the specification of rates, the contractor shall post the revised rates of wages and shall pay not less than the revised rates of wages. Current wage rate information shall be obtained by visiting the Illinois Department of Labor web site at <http://www.state.il.us/agency/idol/> or by calling 312-793-2814. It is the responsibility of the contractor to review the rates applicable to the work of the contract at regular intervals in order to insure the timely payment of current rates. Provision of this information to the contractor by means of the Illinois Department of Labor web site satisfies the notification of revisions by the Department to the contractor pursuant to the Act, and the contractor agrees that no additional notice is required. The contractor shall notify each of its subcontractors of the revised rates of wages.