

# 4

**Letting June 12, 2020**

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



**Contract No. 61G42  
COOK County  
Section 16-00199-00-RS (Wilmette)  
Routes FAU 1296 & FAU 1297 (Central Ave & Wilmette**

**Ave)**

**Project PWW7-474 ()  
District 1 Construction Funds**

Prepared by

Checked by

F





- 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 12:00 p.m. June 12, 2020 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. 61G42  
COOK County  
Section 16-00199-00-RS (Wilmette)  
Project PWW7-474 ()  
Routes FAU 1296 & FAU 1297 (Central Ave & Wilmette Ave)  
District 1 Construction Funds**

**Reconstruction of Central Avenue from the Union Pacific Railroad to Sheridan Road. Resurfacing of Wilmette Avenue from the Union Pacific Railroad to Lake Avenue, and traffic signal modernization at Central and Wilmette Avenues in Wilmette.**

- 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

Omer Osman,  
Acting Secretary

INDEX  
FOR  
SUPPLEMENTAL SPECIFICATIONS  
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2020

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

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 4-1-16) (Revised 1-1-20)

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## BDE SPECIAL PROVISIONS

The following special provisions indicated by an "X" are applicable to this contract. An \* indicates a new or revised special provision for the letting.

<u>File Name</u>	<u>Pg.</u>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
* 80099		Accessible Pedestrian Signals (APS)	April 1, 2003	April 1, 2020
80274		Aggregate Subgrade Improvement	April 1, 2012	April 1, 2016
80192		Automated Flagger Assistance Device	Jan. 1, 2008	
80173	257	X Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
80246		Bituminous Surface Treatment with Fog Seal	Jan. 1, 2020	
80241		Bridge Demolition Debris	July 1, 2009	
50261		Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50481		Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50491		Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50531		Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
80425		Cape Seal	Jan. 1, 2020	
80384	259	X Compensable Delay Costs	June 2, 2017	April 1, 2019
80198		Completion Date (via calendar days)	April 1, 2008	
80199		Completion Date (via calendar days) Plus Working Days	April 1, 2008	
80293		Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	July 1, 2016
80311		Concrete End Sections for Pipe Culverts	Jan. 1, 2013	April 1, 2016
80277		Concrete Mix Design – Department Provided	Jan. 1, 2012	April 1, 2016
80261	263	X Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
80387		Contrast Preformed Plastic Pavement Marking	Nov. 1, 2017	
80029	266	X Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Mar. 2, 2019
80402	276	X Disposal Fees	Nov. 1, 2018	
80378		Dowel Bar Inserter	Jan. 1, 2017	Jan. 1, 2018
80405		Elastomeric Bearings	Jan. 1, 2019	
80421	278	X Electric Service Installation	Jan. 1, 2020	
80415	280	X Emulsified Asphalts	Aug. 1, 2019	
80423	283	X Engineer's Field Office Laboratory	Jan. 1, 2020	
80388	286	X Equipment Parking and Storage	Nov. 1, 2017	
80229		Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
80417		Geotechnical Fabric for Pipe Underdrains and French Drains	Nov. 1, 2019	
80420		Geotextile Retaining Walls	Nov. 1, 2019	
80304		Grooving for Recessed Pavement Markings	Nov. 1, 2012	Nov. 1, 2017
80422		High Tension Cable Median Barrier Reflectors	Jan. 1, 2020	
80416		Hot-Mix Asphalt – Binder and Surface Course	July 2, 2019	Nov. 1, 2019
80398	287	X Hot-Mix Asphalt – Longitudinal Joint Sealant	Aug. 1, 2018	Nov. 1, 2019
* 80406		Hot-Mix Asphalt – Mixture Design Verification and Production (Modified for I-FIT Data Collection)	Jan. 1, 2019	Jan. 2, 2020
80347		Hot-Mix Asphalt – Pay for Performance Using Percent Within Limits – Jobsite Sampling	Nov. 1, 2014	July 2, 2019
80383		Hot-Mix Asphalt – Quality Control for Performance	April 1, 2017	July 2, 2019
80411		Luminaires, LED	April 1, 2019	
80393	291	X Manholes, Valve Vaults, and Flat Slab Tops	Jan. 1, 2018	Mar. 1, 2019
80045		Material Transfer Device	June 15, 1999	Aug. 1, 2014
80418		Mechanically Stabilized Earth Retaining Walls	Nov. 1, 2019	
80424		Micro-Surfacing and Slurry Sealing	Jan. 1, 2020	
* 80428	293	X Mobilization	April 1, 2020	
80165		Moisture Cured Urethane Paint System	Nov. 1, 2006	Jan. 1, 2010
80412		Obstruction Warning Luminaires, LED	Aug. 1, 2019	
80349		Pavement Marking Blackout Tape	Nov. 1, 2014	April 1, 2016
80371	294	X Pavement Marking Removal	July 1, 2016	
80389	295	X Portland Cement Concrete	Nov. 1, 2017	

<u>File Name</u>	<u>Pg.</u>		<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80359			Portland Cement Concrete Bridge Deck Curing	April 1, 2015	Nov. 1, 2019
80300			Preformed Plastic Pavement Marking Type D - Inlaid	April 1, 2012	April 1, 2016
34261			Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006
80157	296	X	Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	
* 80306			Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Nov. 1, 2012	Jan. 2, 2020
80407	298	X	Removal and Disposal of Regulated Substances	Jan. 1, 2019	Jan. 1, 2020
* 80419	309	X	Silt Fence, Inlet Filters, Ground Stabilization and Riprap Filter Fabric	Nov. 1, 2019	April 1, 2020
80395			Sloped Metal End Section for Pipe Culverts	Jan. 1, 2018	
80340			Speed Display Trailer	April 2, 2014	Jan. 1, 2017
80127			Steel Cost Adjustment	April 2, 2014	Aug. 1, 2017
80408			Steel Plate Beam Guardrail Manufacturing	Jan. 1, 2019	
80413			Structural Timber	Aug. 1, 2019	
80397	315	X	Subcontractor and DBE Payment Reporting	April 2, 2018	
80391	316	X	Subcontractor Mobilization Payments	Nov. 2, 2017	April 1, 2019
80317			Surface Testing of Hot-Mix Asphalt Overlays	Jan. 1, 2013	Aug. 1, 2019
80298	317	X	Temporary Pavement Marking	April 1, 2012	April 1, 2017
80403			Traffic Barrier Terminal, Type 1 Special	Nov. 1, 2018	
80409	320	X	Traffic Control Devices – Cones	Jan. 1, 2019	
80410			Traffic Spotters	Jan. 1, 2019	
20338	321	X	Training Special Provisions	Oct. 15, 1975	
80318			Traversable Pipe Grate for Concrete End Sections	Jan. 1, 2013	Jan. 1, 2018
* 80429			Ultra-Thin Bonded Wearing Course	April 1, 2020	
80288	324	X	Warm Mix Asphalt	Jan. 1, 2012	April 1, 2016
80302	326	X	Weekly DBE Trucking Reports	June 2, 2012	April 2, 2015
* 80414			Wood Fence Sight Screen	Aug. 1, 2019	April 1, 2020
* 80427	327	X	Work Zone Traffic Control Devices	Mar. 2, 2020	
80071			Working Days	Jan. 1, 2002	

The following special provisions are in the 2020 Supplemental Specifications and Recurring Special Provisions.

<u>File Name</u>	<u>Special Provision Title</u>	<u>New Location(s)</u>	<u>Effective</u>	<u>Revised</u>
80404	Coarse Aggregate Quality for Micro-Surfacing and Cape Seals	Article 1004.01(b)	Jan. 1, 2019	
80392	Lights on Barricades	Articles 701.16, 701.17(c)(2) & 603.07	Jan. 1, 2018	
80336	Longitudinal Joint and Crack Patching	Check Sheet #36	April 1, 2014	April 1, 2016
80400	Mast Arm Assembly and Pole	Article 1077.03(b)	Aug. 1, 2018	
80394	Metal Flared End Section for Pipe Culverts	Articles 542.07(c) and 542.11	Jan. 1, 2018	April 1, 2018
80390	Payments to Subcontractors	Article 109.11	Nov. 2, 2017	

The following special provisions have been deleted from use.

<u>File Name</u>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80328	Progress Payments	Nov. 2, 2013	

**STATE OF ILLINOIS**

**SPECIAL PROVISIONS**

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted April 1, 2016, (hereinafter referred to as the Standard Specifications); the latest edition of the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways" in effect on the date of invitation for bids; and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids; and the "Standard Specifications for Water & Sewer Construction in Illinois" 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 FAU Route 1296 (Central Avenue) from the Union Pacific Railroad to Sheridan Road Reconstruction, Section: 16-00199-00-RS, Project No. PWW7(474) in Cook County, Village of Wilmette and in case of conflict with any part or parts of said specifications, the said Special Provisions shall take precedence and shall govern.

**CONTRACT NO. 61G42**

**LOCATION OF PROJECT**

The project is located along Central Avenue, beginning at station 103+59.68, a point on the centerline of Central Avenue approximately 32 feet east of the centerline of the Union Pacific Railroad and extends in an easterly direction for a gross/net length of 5,625.43 feet (1.07 miles) to station 158+39.80. The project is also located along Wilmette Avenue, beginning at station 397+76.31 and extends in a northeasterly direction for a gross/net length of 232.59 feet (0.04 miles) to station 400+08.90 and from station 401+90.56 and extends in a northeasterly direction for a gross/net length of 830.33 feet (0.16 miles) to station 410+20.89. The total gross/net length of the project is 6,688.35 feet (1.27 miles) and it is within the Village of Wilmette, Cook County.

**DESCRIPTION OF PROJECT**

The work consists of roadway reconstruction on Central Avenue and milling/resurfacing on Wilmette Avenue, storm sewer and drainage structure adjustments and installation, water main installation, traffic signal installation, festoon lighting, streetscaping, landscaping, thermoplastic pavement markings, and all incidental and collateral work as necessary to complete the improvement shown herein and as described in the specifications.

**AVAILABLE REPORTS**

No project specific reports were prepared.

When applicable, the following checked reports and record information is available for Bidders' reference upon request:

Record structural plans

Preliminary Site Investigation (PSI)

Central Avenue  
Wilmette Ave

Preliminary Environmental Site Assessment (PESA)

Central Avenue  
Wilmette Ave

Soils/Geotechnical Report (includes Boring Logs / Pavement Cores)

Hydraulic Report

Other: \_\_\_\_\_

Those seeking these reports should request access from:

Daniel Manis, P.E.  
Village Engineer  
Engineering & Public Works / Village of Wilmette  
1200 Wilmette Avenue  
Wilmette, IL 60091  
847-853-7602  
[manisd@wilmette.com](mailto:manisd@wilmette.com)  
8:00 AM to 4:00 PM Monday thru Friday

## **ADJUSTING WATER MAIN**

**Description.** This work consists of adjustments of existing water mains as necessary to eliminate conflicts with proposed utilities and shall conform to the Standard Specifications for Water and Sewer Main Construction in Illinois and applicable portions of Section 561 of the Standard Specifications.

Ductile iron pipe shall conform to ANSI Specification A21.51 or AWWA C151. Class 52 minimum thickness is required.

**Method of Measurement and Basis of Payment.** This work shall be paid for at the contract unit price per FOOT for ADJUSTING WATER MAIN, of the size specified, which price shall include excavation, existing pipe removal and disposal, pipe installation, fittings, mega lugs, thrust blocks, coordination with the Village of Wilmette personnel for operation of water valves, and all other labor, equipment and materials necessary to complete the work.

TRENCH BACKFILL shall be paid for separately.

## **ANTI-GRAFFITI COATING**

This section specifies the requirements for applying a non-sacrificial, matte gloss, anti-graffiti protective coating over aluminum signage surfaces as noted in the contract documents. Anti-graffiti coating shall be a factory applied finish coordinated with all wayfinding sign and gateway entrance signs special provisions.

### **Product.**

Anti-graffiti coating shall be a coating system, including primer, sealer or densifier coats as recommended by the manufacturer. The final coat of the system shall be a urethane-based sealant in accordance with the requirements of Materials I.M. 491.23, which provides an invisible, non-sacrificial penetrating barrier. Coating shall dry as a matte or satin finish. A high gloss finish is unacceptable. The application of the coating product shall not result in yellowing or color change to the surface.

The anti-graffiti coating shall be a low volatile organic content (VOC) material, with a VOC less than 600 grams/liter. The coating shall be resistant to weather, humidity, abrasion, acid, alkali, salt spray, ultra-violet rays, and petroleum products and shall allow vapor transmission when tested in accordance with ASTM E 96.

The coating shall have the capability of having all types of paints and graffiti materials completely removed without damaging the surfaces to which the coating is applied. Removal of graffiti shall not result in "shadowing" of the base surface upon removal of graffiti. Manufacturer recommended cleaning products for removal of graffiti shall be non-toxic and biodegradable.

**Submittals.**

Submittals shall be coordinated with the gateway and wayfinding sign submittals. The coating shall be a factory applied process coordinated with the fabrication of gateway and wayfinding sign elements. The Contractor shall provide Product Data Sheets, along with Material Safety Data Sheets (MSDS) for the coating products including thinners and cleaning agents. The information submitted shall also include information verifying compliance to VOC limitations as outlined above.

Provide written application instructions from the manufacturer, which shall include recommended application equipment, application methods and rates, surface preparation requirements and other applicable manufacturer's recommendations.

**Surface Preparation.**

Ant-graffiti coating shall be a factory applied finish. Surfaces to be coated shall be clean, dry, and free of oil, dirt, grease, form release agent, efflorescence or any other coating, which may inhibit penetration and adhesion of anti-graffiti coating. If surface requires cleaning prior to applying anti-graffiti coating, clean surface in accordance with manufacturer's recommendations.

**Application.**

All exposed faces of gateway and wayfinding signs shall receive the factory-applied graffiti coating finish. Application shall be by means of brush, roller or sprayer in accordance with the manufacturer's recommendations. The number of coats applied shall be in accordance with the manufacturer's recommendations. Coating material shall not be diluted in any way.

**Spray Application.**

A low-pressure setting of approximately 40 pounds per square inch shall be used to avoid atomization of coating material. Spray equipment shall be fitted with fan tip, stainless steel or brass fittings and gaskets suitable for solvent solutions.

**Brush and Roller Application.**

Utilize nylon or other synthetic material resistant to solvent solutions. Apply sufficient product to thoroughly saturate the surface. Avoid excessive overlapping and take care to brush out runs and drips to avoid build-up.

**Inspection.**

The Engineer will inspect installed gateway and wayfinding signs as a complete installation to verify that it is in accordance with the requirements of this section. The Contractor shall facilitate this inspection as required, including providing the Engineer with advance notice of scheduled work, allowing ample time for the inspections and access to the work.

**Method of Measurement.**

Anti-graffiti coating installation will be measured in place per square foot.

**Basis of Payment.**

For the number of square feet of ANTI-GRAFFITI COATING shown on the plans, the Contractor will be paid the contract unit price per SQUARE FEET. This payment shall be full compensation for all labor, materials, equipment, services, and incidentals necessary to perform the work of this section.

**AS-BUILT DRAWINGS**

**Description.** At the completion and acceptance of the work, the CONTRACTOR shall perform a survey of the project.

The survey shall provide, at a minimum, the following information:

1. As-Built locations and elevations, including rims and inverts, of the proposed storm water improvements, using the base sheets of the of the design drawings as reference.
2. As-Built locations and elevations of the proposed public and private utilities, including rim and invert elevations at manholes and/or conduits, that were required to be relocated due to the proposed stormwater improvements.
3. The CONTRACTOR shall provide an As-Built drawing of the detention basin, with the necessary contour lines, and shall verify the detention volume of the pond with reference to the design volume.
4. The as-built drawings must be stamped by a Professional ENGINEER or Land Surveyor licensed in the State of Illinois.

The CONTRACTOR will deliver to the Village, Quantity and Format of Drawings Required

1. Upon the Village Engineer's approval of a paper (blue-line or black-line) Record Drawing Check Print, Record Drawings of the completed project shall be provided as follows:
  - a. One Electronic Drawing File(s) in DWG (AutoCAD), Shapefile or Feature Class (ArcGIS).
  - b. One Electronic ASCII Point File(s).
    - i. The ASCII Point File should be as a point number followed by the point's raw data: Northing, Easting, Elevation, and Point name (Raw Point Description) Code format – comma delimited, on

CD. Example:

- ii. Data shall be in US State Plane Coordinates System, Illinois East zone, NAD-83, NAVD-88, US Survey Feet, as opposed to an arbitrary coordinate system.

Point Number	Northing	Easting	Elevation	Description
1	1993774.448	1093275,480	480.649	193, CP

**Measurement and Basis for Payment.** This item will not be measured separately for payment but shall be considered INCLUDED in the cost for CONSTRUCTION LAYOUT.

**BENCHES**

**Description.** This work shall consist of furnishing, transporting, assembling, and placing Benches as specified herein, as shown on the plans, and as directed by the Resident Engineer.

**General.**

The following bench types and components are included in this item:

1. Circular Bench With Precast Base, Backed And Cast In Place Concrete Pad
2. Radius Bench With Precast Base, Backless And Cast In Place Concrete Pad
3. Radius Bench, Backed
4. Straight Bench, Backed

The Bench contractor shall provide evidence that his firm has specific experience meeting the following criteria:

1. Precast manufacturing plant shall be certified, category AT – Architectural Trim, by the Precast Concrete Institute (PCI) at the time of bidding.
2. Precast Concrete Manufacturer and Trade Contractor must have a minimum of 5 years of successful experience on projects of similar magnitude and complexity to that indicated project. Manufacturer and Contractor to be prequalified by Illinois Department of Transportation prior to bidding. Failure to prequalify will void bid.
3. Minimum 15 years experience in the manufacture of site seating.
4. Provide a reference list of at least ten major transportation authorities, municipalities, universities, or other high-use public environments currently using site seating fabricated by the manufacturer.

5. Manufacturer to supply a written Quality Assurance Program and Procedure Manual.

**References.**

- A. American Society for Testing and Materials (ASTM)
  1. ASTM C-150
  2. ASTM C-33
  3. ASTM C-260
  4. ASTM C-494
  5. ASTM C-128
  6. ASTM C-31
- B. Precast/Prestressed Concrete Institute (PCI) C.  
American Concrete Institute (ACI)
  1. ACI-318

**Submittals.**

- A. Shop Drawings
  1. Submit shop drawings of all bench types and components, including precast concrete, wood, and attachments showing detail sections and profile for all bench components. Details shall show all reinforcing and special hardware required for fastening. Shop drawings shall be provided for the full bench assemblies, depicting all mountings and hardware.
- B. Samples
  1. Submit full range of available standard colors for precast concrete, wood and metal frames for Engineer review and selection.
  2. Submit copy of Quality Assurance and Procedure Program.
- C. Performance Requirements
  1. Compressive Strength 5000 p.s.i.
  2. Air Content 6-8%
  3. Water-Cement Ratio. 45:1
- D. Certification
  1. Suppliers shall furnish certification attesting that materials meet specification requirements.

E. Warranty

Precast Concrete

1. Manufacturer/Installer shall warrant installed system for a period of 2 years from date of substantial completion against failure of workmanship and materials.

Bench Frame, Seat and Back

2. Manufacturer/Installer shall warrant installed system for a period of 1 year from date of substantial completion against failure of workmanship and materials.

**Materials:**

Description: Bench  
 Manufacturer: Landscape Forms  
 7800 E Michigan Ave, Kalamazoo, MI 49048  
[www.landscapeforms.com](http://www.landscapeforms.com)  
 800 430 6206 x 1334  
 Contact: Jennifer Woods  
 Email: [jenniferw@landscapeforms.com](mailto:jenniferw@landscapeforms.com)

Item: Custom Bench based on the Landscape Forms Neoliviano Bench product

Size: Varies, See plans

Mount: Varies, See plans

Color: Precast Concrete: one color, to be selected upon sample review  
 Metal Frame: black, powder coated finish  
 Wood seat and back: one standard wood type, to be selected upon sample review

A schedule of bench types follows below:

QUANTITY	PAY ITEM	DESCRIPTION
1	BENCHES	CIRCULAR BENCH WITH PRECAST BASE, BACKED AND CAST IN PLACE CONCRETE PAD
21	BENCHES	RADIUS BENCH WITH PRECAST BASE, BACKLESS AND CAST IN PLACE CONCRETE PAD
8	BENCHES	RADIUS BENCH, BACKED
3	BENCHES	STRAIGHT BENCH, BACKED

**Construction.** Benches are shop fabricated and assembled, contractor to install benches at locations as shown on the plans and in accordance with manufacturer's guidelines. Where benches are designated to be installed on cast in place concrete pads, contractor shall meet the requirements stated for concrete sidewalks.

**Method of Measurement.** The Benches shall be measured per each bench installed and shall include assembly and all hardware necessary to install as recommended by the manufacturer and as shown on the plans, including all materials, footings, labor, and equipment required to complete this work.

**Basis of Payment.** Furnishing and installing BENCHES will be paid for at the contract unit price per EACH for BENCHES.

## **BICYCLE RACKS**

**Description:** This work shall include the installation of bicycle racks as shown in the project documents. Bicycle racks shall match the Village standard bike racks with and without Village logo as specified on the plan documents.

**General Requirements:** Bicycle racks shall be installed by an experienced installer who has completed installation of similar bicycle parking racks. Bicycle racks shall match the Village standard bike racks with and without Village logo as specified on the plan documents.

### 1.1 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed installation of similar bicycle parking racks.
- B. Manufacturer Qualifications: Dero
- C. Source Limitations: For consistent quality in appearance and physical properties obtain each product from Dero
- D. Product Options: Drawings indicate size, shape and dimensional requirements of furnishings for the purpose of customer sourcing.

### 1.2 SUBMITTALS

- A. Drawings: Show details including dimensions, materials, and options for each product.
- B. Maintenance Data: For each product include the recommended methods for repairing damage to the powder coat and materials finish will be provided.

### 1.3 DELIVERY, STORAGE AND HANDLING

- A. Store product(s) in original undamaged packaging and containers until ready for installation.
- B. Handle powder coated product(s) with enough care to prevent any scratches or damage to the finish.

### 1.4 WARRANTY

- A. Bicycle parking racks carry a one-year manufacturer's limited warranty against defects in materials and workmanship. The warranty period begins the date of invoice.

## PART 2 - PRODUCTS

### 2.1 Acceptable Manufacturers

- A. Dero Bike Racks  
42 Northern Stacks Dr #100, Fridley, MN 55421  
[\(612\) 359-0689](tel:(612)359-0689)  
[www.dero.com](http://www.dero.com)

### 2.2 Materials

- A. 1.5" schedule 40 uncoated pipe (1.90" OD)
- B. Installation Methods: Flange mount has two 2.5" x 6" x .25" feet - 4 anchors.

### 2.3 Finishes

- 1. Powder coated black finish.
- 2. For powder coated/ painted racks, the following specifications are required: Part is prepared for painting with hard sandblasting. An epoxy primer is electrostatically applied. A final TGIC, UV resistant polyester powder coat is applied. Final coating mil thickness shall be no less than 6 mils.

### 2.4 Hoop Bike Rack

- A. Setbacks
  - 1. Wall Setback: For Hoops set parallel to the wall, a minimum of 24" should be left between the wall and the rack. 36" is the recommended setback. For Hoops installed

perpendicular to the wall, a 28" setback is the minimum distance. 36" is recommended.

2. Distance Between Racks: 24" is the minimum distance between racks. 36" is recommended.
3. Street Setback: 24" is the minimum distance between the street and the rack. 36" is recommended.
4. The foot-mounted Hoop Rack has a 2.5" x 6" x .25" foot which is installed onto a concrete base with 4 masonry anchors. The foot-mounted Hoop Rack is generally less expensive to install and easier to remove than the in-ground mount model, while still maintaining the same degree of security.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install in accordance with manufacturer’s instructions.
- B. Surface mounting: Location and drilling of holes for inserts included.
- C. Some assembly required.

A schedule of bicycle racks follows below:

QUANTITY	PAY ITEM	DESCRIPTION
11	BICYCLE RACKS	SURFACE MOUNTED U-RACK WITH VILLAGE LOGO
14	BICYCLE RACKS	SURFACE MOUNTED U-RACK

**Method of Measurement:** Furnishing and installing bike racks will be measured in place for each BICYCLE RACK.

**Basis of Payment:** Furnishing and installing BICYCLE RACKS will be paid for at the contract unit price per EACH for BICYCLE RACK, which price shall include all hardware, foundations, furnishing and installing the racks and all labor and all equipment and materials necessary to complete the work as specified herein.

## **BOLLARDS**

**Description.** This work shall consist of furnishing and installing lighted landscape bollards on a prepared concrete foundation as detailed on plans or as directed by the Resident Engineer. This work shall be coordinated with electrical utility improvements as defined in the engineering project documents and paid for separately.

### **General.**

The Ashbery Path Light decorative lighted bollard shall be cast aluminum, one-piece construction. The Model shall be Landscape Forms Ashbery Path Light lighted bollard.

## **PART 1 GENERAL**

### **1.1 Section Includes.**

- A. Path Lighting.

### **1.2 References.**

A. ASTM Testing Standards:

1. ASTM B 117 – Standard Practice for Operating Salt Spray (Fog) Apparatus.
2. ASTM D 522 – Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings.
3. ASTM D 523 – Standard Test Method for Specular Gloss.
4. ASTM D 2247 – Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
5. ASTM D 2794 – Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
6. ASTM D 3359 – Standard Test Methods for Measuring Adhesion by Tape Test.
7. ASTM D 3363 – Standard Test Method for Film Hardness by Pencil Test.
8. ASTM G 155 – Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.

B. ISO Testing Standards:

1. ISO 1520 – Paints and Varnishes – Cupping Test.
2. ISO 2815 – Paints and Varnishes – Buchholz Indentation Test.

C. Underwriters Laboratories (UL):

1. UL listed

D. IESNA LM-79 Testing Standard:

1. Type 4 IES file available
2. Type 5 IES file available

E. International DarkSky Association Standard (IDA):

1. Ashbery is a DarkSky approved luminaire when configured with 3000K and warmer CCTs.

### 1.3 **Submittals**

- A. **Product Data**: Submit manufacturer's product data, storage and handling requirements and recommendations, installation methods and available colors, styles, patterns and textures.
- B. **Shop Drawings**: Submit manufacturer's shop drawings, including plans and elevations, indicating overall dimensions.
- C. **Samples**: Submit manufacturer's samples of materials, finishes, and colors.
- D. **Warranty**: Manufacturer's standard warranty.

### 1.4 **Quality Assurance**

- A. **Manufacturer's Qualifications**: Manufacturer regularly engaged in manufacture of site furnishings since 1969.
- B. **Product Support**: Products are supported with complete engineering drawings and design patents.
- C. **Base Worth**: An installed base of products worth in excess of one hundred million dollars.
- D. **Assets**: Excess of twenty million dollars in assets.
- E. **Production**: Orders are filled within a 40-day schedule.
- F. **Facility Operator**: Welders and machine operators are certified.

### 1.5 **Delivery, Storage, And Handling**

- A. **Delivery**: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. **Storage**: Store materials in clean, dry area in accordance with manufacturer's instructions. Keep materials in manufacturer's original, unopened containers and packaging until installation.
- C. **Handling**: Protect materials and finish during handling and installation to prevent damage.

### 1.6 **Warranty**

- A. **Warranty Information**:
  - LED lighting products are warranted for six years.
  - The warranty does not apply to damage resulting from accident, alteration, misuse, tampering, negligence, or abuse.
  - Landscape Forms, Inc. shall, at its option, repair, replace, or refund the purchase price of any items found defective upon inspection by an authorized Landscape Forms service representative.
  - Purchasers should be aware that normal use of these high quality products can result in superficial damage affecting the finish. Scratches, nicks, and dents are to be considered normal wear and tear, and are not the responsibility of the manufacturer.

## **PART 2 PRODUCTS**

### **2.1 Manufacturer**

#### **A.**

Landscape Forms  
7800 E Michigan Ave, Kalamazoo, MI 49048  
www.landscapeforms.com  
800 430 6206 x 1334  
Contact: Jennifer Woods  
Email: [jenniferw@landscapeforms.com](mailto:jenniferw@landscapeforms.com)

### **2.2 Path Lighting**

- A. “Ashbery” Path Light:
- B. Style: Surface Mount to concrete footing. Anchoring template included. Anchoring hardware not included.
  - 1. IES Type 4 light distribution
  - 2. Color temperature:
    - a. 3000K

### **2.3 Materials**

#### **A. Frame Assembly:**

- 1. Mainframe Casting: aluminum casting; 319 ASTM B26 or 356 ASTM B108
- 2. Mounting Plate: aluminum plate; 6061-T651 ASTM B209 or 5052-H32 ASTM B209-10
- 3. Mainframe Lid: aluminum casting; 319 ASTM B26 or 356 ASTM B108
- 4. Cartridge Housing: aluminum casting; 319 ASTM B26 or 356 ASTM B108
- 5. Cover Plates, Front and Rear: aluminum casting; 319 ASTM B26 or 356 ASTM B108
- 6. Cover Plate Gasket: 1/8”way x 1/2” EPDM sponge rubber seal
- 7. Driver mounting plate: aluminum sheet; 5052-H34 ASTM B209
- 8. Lid: aluminum casting; 319 ASTM B26 or 356 ASTM B108

#### **B. Light Cartridge Assembly: cartridge is rated IP 66; RoHS compliant**

- 1. Cartridge Casting: Die cast aluminum alloy; A413 ASTM B85, S12A or A380.0 ASTM B108. Attaches to housing using (4) M4 x 0.7 x 16mm socket head cap screws.
- 2. LED boards: Cree XP-G2 LED mounted to a RoHS compliant FR4 circuit board with integrated overvoltage protection. Acrylic optics affixed to each board; 3M™ thermal interface material used to bond boards to cartridge assembly.
  - a) Type 4 luminaire has 6 LEDs per unit
- 3. Lens: Impact Modified Acrylic Diffusing Lens (85% transmission)
- 4. Wiring: Weatherproof quick disconnect

C. Driver Circuitry:

1. Driver mounting plate: formed aluminum sheet; 5052-H34 ASTM; Attached to housing using (2) M4 x 0.7 x 10mm socket button head cap screws with lock washer
2. Driver: Class 2 output; CE; IP66; Suitable for dry and damp locations; Input: 100-277VAC, 50/60Hz;  
 Type 4: Output: 12-36 VDC, 350mA max. Max 12.6 watts. Dimmable output capable with 0-10V control provided by others. Driver attached to plate with (2) M3 x 0.5 x 6mm zinc plated button head socket cap screws.  
 Type 5: Output: 10-28 VDC, 700mA max. Max 20 watts. Dimmable output capable with 0-10V control provided by others. Driver attached to plate with (2) M3 x 0.5 x 6mm zinc plated button head socket cap screws.
3. Wiring: Cartridge is connected to driver via wiring harness with weatherproof connectors; installed at factory.
4. Surge Protector: UL Recognized; input voltage 120-277. Max surge current 10kA.

2.4 Recycled Content

- A. Ashbery path light: 100% recyclable.

Description	Post-Consumer Content	Pre-Consumer Content
Ashbery pathlight	16.6%	16.4%

2.5 Finishes

- A. Finish on Metal: Landscape Forms, Inc. "Pangard II".
1. Primer: Rust inhibitor.
  2. Topcoat: Thermosetting TGIC polyester powder coat. UV, chip, and flake resistant.
  3. Test Results: "Pangard II".
    - a. Gloss Consistency, Gardner 60 Degrees, ASTM D 523: Plus or minus 5 percent from standard.
    - b. UV Resistance, Color and Gloss, ASTM G 155, Cycle 7: Delta E less than 2 at 2.0 mils and less than 20 percent loss.
    - c. Cross-Hatch Adhesion, ASTM D 3359, Method B: 100 percent pass.
    - d. Flexibility Test, Mandrel, ASTM D 522: 3 mm at 2 mils.
    - e. Erichsen Cupping, ISO 1520: 8 mm.
    - f. Impression Hardness, Buchholz, ISO 2815: 95.
    - g. Impact Test, ASTM D 2794: 60 inch-pounds at 2.5 mils.
    - h. Pencil Hardness, ASTM D 3363: 2H minimum.
    - i. Corrosion Resistance, 1,500-Hour Test, ASTM B 117: Max undercutting 1 mm.
    - j. Humidity Resistance, 1,500-Hour Test, ASTM D 2247: Max blisters 1 mm.
  4. Color: Black.

## **2.6 Concrete Foundations**

- A. The bollard light shall be installed on a PC concrete foundation in accordance with Section 836 of the Standard Specifications. The concrete mixture shall be Class SI in accordance with Section 1020 of the Standard Specifications.
- B. The foundation shall be 12-inches in diameter at a depth as specified in the plans.

## **PART 3 EXECUTION**

### **3.1 Examination**

- A. Examine areas to receive path light.
- B. Notify Resident Engineer of conditions that would adversely affect installation or subsequent use.
- C. Do not begin installation until unacceptable conditions are corrected.

### **3.2 Installation**

- A. Install path light in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Install path light plumb.
- C. Anchor path light securely in place.

### **3.3 Adjusting**

- A. Finish Damage: Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Resident Engineer.
- B. Component Damage: Remove and replace damaged components that cannot be successfully repaired as determined by Resident Engineer.

### **3.4 Cleaning**

- A. Clean path light promptly after installation in accordance with manufacturer's instructions.
- B. Do not use harsh cleaning materials or methods that could damage finish.

### **3.5 Protection**

- A. Protect installed path light to ensure that, except for normal weathering, path light will be without damage or deterioration at time of Substantial Completion.

## **END OF SECTION**

**Method of Measurement.** Furnishing and installing BOLLARDS, concrete foundation and all associated equipment and materials will be measured in place for EACH landscape bollard.

**Basis of Payment.** Furnishing and installing landscape bollard and concrete foundation will be paid for at the contract unit price per EACH for BOLLARDS.

The concrete foundation for the bollard lights will be measured separately for payment as CONCRETE FOUNDATIONS (SPECIAL), which price shall include the forming and placing the concrete, conduits, and all labor and all equipment and materials necessary to complete the work as specified herein.

### **BRICK PAVER REMOVAL AND REINSTALLATION, SPECIAL**

**Description.** This work shall consist of the removal and reinstallation of brick pavers, slate, flagstone or other similar materials on the driveways along Central Avenue. This work shall consist of removing, temporary storage, and security of the existing brick pavers, slate, flagstone or other similar materials and base material and placing the brick pavers, slate, flagstone or other similar materials as described below upon replacement of the existing base. Pavers, slate, flagstone or other similar materials shall be in accordance with Article 1041.03 of the Standard Specifications. This item includes removing and properly disposing of failed sand, aggregate, bituminous, or concrete base material after the bricks have been removed. The ENGINEER shall determine the thickness of base course to be removed and replaced in the field after the bricks have been removed. The maximum thickness of the existing base course to be removed shall be considered to be 9 inches.

Brick pavers, slate, flagstone or other similar materials that are to be reinstalled shall not be removed from the project limits. Cleaning shall consist of removing all debris, mud, markings, etc. with water and a brush. In accordance with the typical sections, a three-quarter inch (3/4") layer of sand, gradation FA- 2, shall be constructed and compacted with a hand compactor so that the finish is free of all undulations, ruts, tire mark and depressions. Prior to the placement of the brick pavers the ENGINEER shall visual inspect the driveway to receive the brick pavers. The CONTRACTOR shall repair any area deemed necessary by the ENGINEER by adding additional sand and compacting the area. The pattern of the brick pavers shall be identical to the existing driveway pattern prior to construction. Any damaged brick pavers or non-brick pavement shall be disposed of offsite.

Any brick pavers slate, flagstone or other similar materials deemed unsuitable for installation shall be properly disposed of offsite by the CONTRACTOR at no additional expense to the VILLAGE. No additional compensation will be made for transporting and installing additional brick pavers required, but it shall be included in the unit cost for BRICK PAVER REMOVAL AND REINSTALLATION, SPECIAL.

If base course removal is required by the ENGINEER, the depth of CA-6 shall be determined by the ENGINEER and placed in two lifts, or as directed by the ENGINEER, and compacted with a hand compactor so that the finish is free of all undulations, ruts, tire mark and depressions. Upon completion of the stone base layer, a three-quarter inch (3/4") layer of sand, gradation FA-2 shall be placed and compacted with a hand compactor so that the finish is free of all undulations, ruts, tire mark and depressions. Prior to the placement of the brick pavers the ENGINEER shall visually inspect the portion of driveway to receive the brick pavers. The CONTRACTOR shall repair any area deemed necessary by the ENGINEER by adding additional sand and compacting the area.

The pattern of the brick pavers, slate, flagstone or other similar materials shall be identical to the pre-existing condition of the driveway prior to construction. The CONTRACTOR shall take a minimum of two photographs of each driveway prior to removing the brick pavers. Any damaged brick pavers, slate, flagstone or other similar materials shall be disposed of and will not be permitted to be installed. If a shortfall of brick pavers, slate, flagstone or other similar materials is encountered, the CONTRACTOR shall provide additional material as necessary and install any additional required brick pavers, flagstone or other similar materials to complete the limits as noted on the plans. The additional brick pavers, slate, flagstone or other similar materials must match the existing material and be approved by the ENGINEER before installation. No additional compensation will be made for supplying and installing additional brick pavers, slate, flagstone or other similar materials required, but it shall be included in the unit cost for BRICK PAVER REMOVAL AND REINSTALLATION, SPECIAL.

After the brick pavers slate, flagstone or other similar materials have been removed, the driveway shall remain accessible at all time. Access to the existing driveways shall be maintained for the duration of the contract. The pay item TEMPORARY ACCESS, of the applicable type, has been included in the contract and shall be used for maintaining access to the existing driveways.

**Method of Measurement and Basis of Payment.** This work will be paid for at the contract unit price per SQUARE FEET for BRICK PAVER REMOVAL AND REINSTALLATION, SPECIAL, which price shall be payment in full for removing, cleaning, stacking, saw-cutting, and installing the brick pavers; supplying, transporting, and installing additional brick pavers supplied by the CONTRACTOR, if required, removing and disposing of base material, furnishing and installing the bedding layers of stone and sand, and all labor and all equipment and materials necessary to complete the work as specified herein. The payment area shall be the final installed width of only the driveway area where work was performed.

## **BRICK PAVEMENT REMOVAL AND REPLACEMENT**

**Description.** This item will include removing and replacing brick pavers at the “touchdown” points at 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> Street at the location shown in the plans and described below upon a new aggregate base course (paid for as aggregate subgrade improvement 12”) and a ¾” sand setting bed. This item includes removing and properly disposing of failed sand, aggregate, bituminous, or concrete base material after the bricks have been removed. The cost of these removals shall be included in the contract unit price for BRICK PAVEMENT REMOVAL AND REPLACEMENT.

For roadways that consist of brick pavers overlaid with bituminous concrete, the bituminous concrete shall be removed and properly disposed of. In addition, any areas of bituminous pavement patching that exist within the proposed brick pavement area shall be removed full depth and properly disposed of. The cost of full depth bituminous pavement removal shall not be paid for separately, but shall be included in the contract unit price for BRICK PAVEMENT REMOVAL AND REPLACEMENT. The Contractor shall submit in writing to the Village and Engineer his/her method of bituminous removal over the brick pavers, for approval, prior to beginning the work. If the proposed method of removing the bituminous concrete over the brick pavers is unacceptable to the Village and Engineer or the method implemented in the field causes damage to the brick pavers, the Contractor shall resubmit an alternate method of removal to the Village and Engineer for approval. The Contractor is responsible for securing all approvals of his/her method of removal and no additional compensation will be made to the Contractor for any incurred delays of the work.

The brick pavers shall be cleaned and palletted after removal. The Contractor has the option of storing the brick on-site or at a secure location provided by the Contractor off-site. It is the Contractor responsibility to determine the quantity of brick pavers that can be stored on-site in the parkway within the project limits. All costs associated with storing the brick pavers on-site or removing the bricks to an off-site location will not be paid for separately, but shall be included in the contract unit price for BRICK PAVEMENT REMOVAL AND REPLACEMENT.

The Contractor will not be allowed to store brick pavers in the parkway or roadway outside of the project limits. If the brick is stored on-site it must be placed at a location determined by the Village and Engineer. Any damage to existing conditions that occurs outside of the limits determined by the Village and Engineer shall be repaired at the cost of the Contractor. Each pallet of brick stored on-site must be contained by the usage of shrink-wrap or another approved method of containing the brick. Cleaning shall consist of removing all debris, bituminous materials, mud, markings, etc. with water and a brush. Prior to brick removal, the Contractor shall cleanly saw cut the entire length of the existing curb and gutter at the edge of pavement line.

Upon completion of construction of the roadway in accordance with the detail shown in the plans, a 3/4 inch layer of sand, gradation FA-2 shall be constructed in accordance with the detail in the plans. The 3/4 inch layer of sand shall be compacted with a hand compactor so that the finish is free of all undulations, ruts, tire mark and depressions. Prior to the placement of the brick pavers the Engineer shall visually inspect the portion of roadway to receive the brick pavers. The Contractor shall repair any area deemed necessary by the Engineer by adding additional sand and compacting the area.

The pattern of the brick pavers shall be identical to the pre-existing condition of the roadway and adjacent streets prior to construction. The Contractor shall take a minimum of ten photographs of the roadway prior to removing the brick pavers. Any damaged brick pavers shall be disposed of and will not be permitted to be installed. The Engineer shall inspect the brick pavers prior to installation. Any brick pavers deemed unsuitable for installation shall be properly disposed of. If a shortfall of brick pavers is encountered, the Contractor shall transport from the Village yard and install any additional required brick pavers to complete the limits as noted on the plans. The additional brick pavers shall be furnished by the Village. No additional compensation will be made for transporting and installing additional brick pavers required, but it shall be included in the unit cost for BRICK PAVEMENT REMOVAL AND REPLACEMENT.

**Basis of Payment.** This work will be paid for at the contact unit price per SQUARE FOOT for BRICK PAVEMENT REMOVAL AND REPLACEMENT, which price shall be payment in full for:

1. Removing, cleaning, stacking, saw-cutting, transporting and installing the brick pavers;
2. Transporting and installing additional brick pavers supplied by the Village if required;
3. Removing and disposing the bituminous concrete layer over the existing brick pavers;
4. Removing and disposing any full depth bituminous pavement patches;
5. Removing and disposing of base material;
6. Furnishing and installing the 3/4" bedding layer of sand (the 12" aggregate base course will be paid for separately); and, all labor and all equipment and materials necessary to complete the work as specified herein.

### **BRICK PAVEMENT REMOVAL AND SALVAGE**

**Description.** This item will include removing and salvaging brick pavers at the "touchdown" points at 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> Street. The Contractor shall coordinate with the Village where and when to deliver the brick.

All salvaged bricks shall be utilized for the Veterans Park improvement or palette and be delivered to the Village Yard. The Contractor shall coordinate with the Village where and when to deliver the brick.

**Basis of Payment.** This work will be paid for at the contact unit price per SQUARE YARD for BRICK PAVEMENT REMOVAL AND SALVAGE, which price shall be payment in full for work as described above.

## **BUS SHELTER REMOVE AND RELOCATE**

**Description.** This work shall consist removing, salvaging and re-installing the bus shelter at the locations shown on the plans.

**Construction Requirements.** The bus shelter shall be removed in its entirety from the concrete foundation and secured in such a way to remain stable. The Contractor shall store the bus shelter at a location to protect against damage, vandalism or from Contractor's equipment.

The Contractor shall remove any foundations and fill the holes with aggregate backfill.

Once the sidewalk construction is completed the Contractor shall construct new concrete foundations (if required) with new mounting hardware. The mounting hardware will match the existing.

The Contractor will re-install the bus shelter on the new sidewalk or foundations at the location shown in the plans.

**Basis of Payment.** This work will be paid for at contract unit price per EACH for BUS SHELTER REMOVE AND RELOCATE which price includes the removal, salvaging, security, storing and reinstallation of the bus shelter, removal and disposal of the foundations, new concrete foundations (if required) and mounting hardware, and all labor, tools, equipment and incidentals to complete the work as specified.

## **CATCH BASINS, MANHOLES, OR INLETS WITH FLEXIBLE BOOTS**

**Description.** This work shall consist of constructing catch basins, manholes or inlets, of the type, size, and depth specified (20-foot maximum), together with the necessary cast iron frames and lids, in accordance with Section 602 of the "Standard Specifications for Road and Bridge Construction" and the latest IDOT Highway Standards, except as specified herein.

All catch basins, manholes, or inlets shall be provided with flexible rubber boots for all pipes (both existing and proposed) to ensure a watertight seal between the pipe and catch basin, manhole, or inlet. The flexible rubber boots shall be K or-N-Seal by National Pollution Control Systems and conform to ASTM Specification C-923. Each boot shall be included in the cost of CATCH BASINS, MANHOLES, or INLETS and will not be paid for separately.

Catch basins, manholes, or inlets constructed in a location where an existing structure was removed shall include five feet of pipe for each existing pipe location. Sewer pipe shall be PVC SDR-26, RCCP, or ductile iron in accordance with the Standard Specifications, and connections to the existing sewer shall be made using couplings with stainless steel shear rings. The pipe, couplings, and trench backfill shall be

included in the cost of CATCH BASINS, MANHOLES, or INLETS and will not be paid for separately. All half-trap pipes installed inside Catch Basins, Manholes, or Inlets shall be considered incidental to this pay item.

All closed lids shall have the words "COMBINED", "STORM", or "SANITARY" cast into them, and all frames and lids shall be IDOT Type 1 Frame and Lid (Standard 604001).

**Method of Measurement and Basis of Payment.** This work will be paid for at the contract unit price per EACH for CATCH BASINS, MANHOLES, or INLETS, of the type, size, depth specified, with the specified frame and grates or lids, which price shall include all labor, material, and equipment necessary to complete the work as specified herein.

### **CATCH BASINS, SPECIAL**

**Description.** This work shall be in accordance with the applicable portions of Section 602 of the Standard Specifications except that the catch basin shall have a trap installed in it. The type of trap shall be coordinated through the Village of Wilmette through the Engineer prior to the contractor ordering the structure.

**Method of Measurement and Basis of Payment.** This work will be paid for at the contract unit price per EACH for CATCH BASINS, SPECIAL, of the size, and depth specified, with the specified frame and grates or lids, which price shall include all labor, material, and equipment necessary to complete the work as specified herein.

### **COMBINED SEWER MANHOLE REHABILITATION**

#### **ROUTING AND SEALING CRACKS**

**Description.** This work shall consist of all necessary measures, including wall coating, external or internal grouting, and reconstruction of bench and trough, to establish structural integrity and to eliminate the potential for inflow and infiltration to Sanitary Manholes.

#### **Materials.**

Patching Material. The following are approved for patching material: Strong Seal QSR; Quadex Hyperform.

Cementitious Coat. The following are approved for cementitious coat: Strong Seal MS- 2A.

Visible Infiltration. Approved materials to stop visible infiltration are the following: Strong-Plug; Quadex Quad-Plug.

Severe Active Infiltration. Approved materials to stop severe active infiltration are the following: Hydrostop-Flex 40/500; Avanti AV-100; Deneef Denepox 40.

Grout. Grouting installation shall conform to ASTM F2414-04. Grout shall be Avanti AV- 100.

Manhole Casting. All closed lids shall have the word "SANITARY" cast into them as applicable. Casting shall be IDOT Type 1 (Standard 604001) frame and lid with seal.

Internal Chimney Seal. Sherwin Williams. Envirolastic AR530.

External Chimney Seal. Shall conform to ASTM C923 and shall be Cretex Classic.

Adjustment Rings. Shall be precast concrete. Adjustment rings of uniform thickness shall be at least two inches thick. The replacement precast grade adjustment shall provide a structural capacity equal to or greater than the existing specified manhole frame, and shall not affect the opening size or surface appearance.

Bitumastic Gasket Material shall meet or exceed Federal Specification SS-S-210A. Material shall be EZ-STIK.

Cover Insert (Inflow Dish). Shall be Cretex Inflow Dish or Rainstopper, made of HDPE conforming to ASTM D-1248, installed per manufacturer's recommendations.

**Submittals**. All materials sheets are to be submitted and approved before rehabilitation can proceed.

## CEMENTITIOUS MANHOLE SEALING

Manhole sealing shall consist of all necessary measures to internally seal the manhole including cementitious wall coating, external or internal grouting, and reconstruction of bench/trough and shall establish structural integrity for the manhole and shall eliminate inflow and infiltration.

This work shall provide for a monolithic fiber-reinforced structural cementitious spray liner applied in two ½-inch lifts intended to seal the entire manhole structure. The spray liner shall be a complete manhole reconstruction that stops inflow and infiltration, providing a leak free structure, restoring structural integrity and providing protection against corrosion.

This specification shall govern all work, materials, and equipment required for manhole rehabilitation for the purpose of eliminating infiltration, exfiltration, providing corrosion protection, repair of voids, and restoration of the structural integrity of the manhole as a result of applying a monolithic fiber-reinforced

structural cementitious liner to the adjustment, cone, wall and bench surfaces of brick, block, pre-cast or poured concrete, or other masonry construction material.

Described are procedures for cleaning, preparation, application and testing. The applicator, approved and trained by the manufacturer, shall furnish all labor, equipment and materials for applying a cementitious mix to form two coats of a structural monolithic liner of a minimum ½-inch thickness, with machinery specially designed for the application. All aspects of the installations shall be in accordance with the manufacturer's recommendation and per the following specifications, which includes:

- A. Remove loose and unsound material
- B. Clean area to be sprayed
- C. Eliminate infiltration
- D. Repair and fill voids
- E. Repair and seal bench trough/inverts
- F. Spraying the cementitious monolithic liner
- G. Remove loose and unsound material:

Loose and protruding brick, mortar and concrete shall be removed using a mason's hammer and chisel and/or a scraper. Any loose debris on the benches, inverts or walls of the manhole shall be removed by means of a scraper and vacuum machine or other approved method as long as it is taken from the manhole and not caused to go into the sewer. Any manhole steps shall be removed prior to cleaning the interior of the manhole. Place covers over invert to prevent extraneous material from entering the sewer lines before cleaning.

B. Clean area to be sprayed:

The CONTRACTOR shall clean the interior surfaces of manhole removing all debris, dirt, oil, grease, remains of old coating materials, and any other extraneous materials. The CONTRACTOR shall then pressure wash (minimum 3,000 psi) the manhole walls to remove loose mortar, concrete, roots, and debris. Heavy grease build-up or unusual conditions may require hydro-blasting or chemical cleaning. Loose and protruding brick, mortar and concrete shall be removed using a mason's hammer and chisel and or scraper.

C. Eliminate infiltration:

The following are approved for patching material: Strong Seal QSR; Quadex Hyperform. This quick setting fiber reinforced calcium aluminate corrosion resistant cementitious material, shall be used as a patching material and is to be mixed and applied according to manufacturer's recommendations and shall have the following minimum requirements:

Compressive Strength Bond  
Calcium Aluminate Cement Applied Density  
Shrinkage Placement Time Set Time

ASTM C109 ASTM C882  
ASTM C490

1400 psi, 6 hrs.  
>1600 psi, 28 days Sulfate resistant 105 lbs/ft<sup>3</sup> ± 5  
0% at 90% R.H.  
5 to 10 minutes  
15 to 30 minutes

Approved materials to stop visible infiltration are the following: Strong-Plug; Quadex Quad- Plug. This rapid setting cementitious product specifically formulated for leak control, shall be used to stop minor water infiltration and shall be mixed and applied according to manufacturer's recommendations and shall have the following minimum requirements:

Compressive Strength hrs.  
Sulfate Resistance Freeze/Thaw  
Pull Out Strength Set Time

ASTM C109 >400 psi, 1hr.>1000 psi, 24  
ASTM C267 No 'wt loss, 15 cycles @2000 ppm ASTM C666, Method A 100 cycles  
ASTM C234 14,000 lbs.  
<1.0 minute

Approved materials to stop severe active infiltration are the following: Hydrostop-Flex 40/500; Avanti AV-100; Deneef Denepox 40. Grouting installation shall conform to ASTM F2414-04. Grouting shall be performed anywhere where active infiltration cannot be stopped with the cementitious grout. All grouting work shall be considered included in the unit price bid payment item for ROUTING AND SEALING CRACKS.

- D. Repair and fill voids:  
The CONTRACTOR shall fill any large voids using one of the approved patching materials. Active Leaks shall be stopped using quick-setting, specially formulated mixes, according to manufacturer's recommendations. Some leaks may require weep holes to localize infiltration during the application. After application the weep holes shall be plugged with quick setting material. After repairing and filling voids and preparations are complete, remove all loose material and wash again. Any bench or invert repairs shall be made at this time using the quick-setting patching mix.
- E. Repair and seal bench trough/inverts:  
Invert repair shall be performed on all inverts with visible damage or where infiltration is present or when vacuum testing is specified. After blocking the flow through the manhole and thoroughly cleaning the invert, a quick-setting patch material shall be applied in an expeditious manner. The material shall be troweled uniformly onto the damaged invert at a minimum thickness of ½ inch at

the invert extending out onto the bench of the manhole sufficiently to tie into the structural monolithic liner to be spray applied. The finished invert shall be smooth and free of ridges. The flow may be re-established in the manhole within 30 minutes after placement of the material.

F. Spraying the cementitious monolithic liner:

Liner Material shall be Strong-Seal MS2-A and shall be made with a type I Portland cement base mix with alkaline resistant fiberglass reinforcement and shall be used according to manufacturer's recommendations. The cementitious liner shall be used to form a structural monolithic liner covering all interior manhole surfaces and shall have the following minimum requirements:

Compressive Strength Tensile Strength Flexural Strength Shrinkage @90% R.H. Bond  
Density, When Applied Freeze/Thaw

ASTM C109 28 days ASTM C496 28 days ASTM C293 28 days  
ASTM C596 28 days ASTM C882 28 days  
ASTM C666

>9000 psi  
>800 psi  
>1200 psi  
0%  
>2000 psi  
134 ± 5lbs/ft<sup>3</sup>  
300 cycles no vis. damage

During application the surface shall be clean and free of all foreign material and shall be damp without noticeable free water droplets or running water, but totally saturated just prior to application of material. Materials shall be spray applied in two lifts, at least 24 hours apart. Minimum total thickness for each pass shall not be less than ½ inch and shall be from the bottom of the frame to the invert of the manhole. The surface shall then be troweled to a relatively smooth finish being careful not to over trowel. A brush finish shall be applied to the trowel-finished surface. Manufacturer's recommendations shall be followed whenever more than 24 hours have elapsed between applications.

After the walls are coated, the invert covers shall be removed and the bench sprayed with excess materials applied in such a manner that a gradual slope is produced from the walls to the invert with the thickness at the invert to be no less than ½ inch. The wall/bench intersection shall be rounded to a uniform radius the full circumference of the intersection. Trough area shall be coated as required to seal all cracks and to provide a smooth surface.

The material shall have minimum of four (4) hours cure time before being subjected to active flow. Ambient conditions in the manhole are adequate for curing as long as the manhole is covered. Traffic shall not be allowed over manholes for 12 hours after reconstruction is complete. Caution shall be

taken to minimize exposure of applied product to sunlight, quick surface drying and air movement. At no time should the finished product be exposed to sunlight or air movement for longer than 15 minutes before replacing the cover. In extremely hot and arid climates, the manhole should be shaded while reconstruction is in process.

No application shall be made if ambient temperature is below 40 degrees Fahrenheit. No application shall be made to frozen surfaces or if freezing is expected to occur within the substrate within 24 hours after application. If the ambient temperatures are in excess of 95 degrees Fahrenheit, precautions shall be taken to keep the mix temperatures at time of application below 90 degrees Fahrenheit. Water temperature shall not exceed 80 degrees Fahrenheit. Chill with ice if necessary. Final acceptance shall be made upon successfully passing a vacuum test ensuring that no leaks are present.

G. Testing:

Four two-inch cubes shall be cast each day from material used during the Manhole Sealing Cementitious installation process. Cubes shall be sprayed from the nozzle, properly packaged and labeled with the date made. One 2 X 2 inch cube from each batch of four shall be sent to an independent test laboratory for compression strength testing per ASTM C109 procedure. The cost for testing the two-inch cubes shall be considered incidental to the Contract.

The CONTRACTOR shall provide a wet film thickness gauge, with a minimum of ¼ inch graduated demarcations to provide for depth measurements anywhere on the interior surface of the manhole as indicated by the ENGINEER during the Manhole Sealing Cementitious installation process. The ENGINEER may even periodically perform a confined space entry to verify the depth of thickness separately from the CONTRACTOR measurements. There shall be no additional compensation to the CONTRACTOR for performing these depth measurements.

**CURTAIN GROUT MANHOLE, GROUT WALL JOINT & MANHOLE BOTTOM**

This work shall govern all work, materials and testing required for chemical pressure grouting of manhole defects. Manhole structure grouting includes the sealing or plugging of the manhole base, walls, corbel/cone and chimney using chemical grout sealants to eliminate leakage. Chemical grout shall be injected into the soil surrounding the manhole as needed for complete sealing resulting in a grout curtain.

**Curtain Grout Manhole:** CONTRACTOR shall furnish all labor, supervision, materials, equipment and testing if required for the completion of chemical grout sealing of manhole defects in accordance with the Contract Documents. Manhole grouting shall not be performed until sealing of manhole frame and grade adjustments is complete.

**Equipment:** The basic equipment shall consist of chemical pumps, chemical containers, injection packers, hoses, valves, and all necessary equipment and tools required to seal manholes by chemical pressure grouting. The chemical injection pumps shall be equipped with pressure meters that will provide for

monitoring pressure during the injection of the chemical sealants. When necessary, liquid bypass lines equipped with pressure-regulating bypass valves will be incorporated into the pumping station.

**Chemical Sealing Materials:** The chemical grout shall be Avanti AV-100 which has a documented record of satisfactory performance in sewer usage. All grouting materials shall be delivered to the job site in the original, labeled, and unopened containers. The CONTRACTOR shall submit with his bid, the brand name manufacturer of the chemical grout(s) he intends to use. The chemical grout(s) selected by the CONTRACTOR is subject to approval of the ENGINEER.

Mixing and handling of chemical grout, which may be toxic under certain conditions, shall be in accordance with the recommendations of the manufacturer and in such manner to minimize hazard to personnel. It is the responsibility of the CONTRACTOR to provide appropriate protective measures to ensure that chemicals or gels are handled by authorized personnel in the proper manner. All equipment shall be subjected to the approval of the ENGINEER. Only personnel thoroughly familiar with the handling of the grout material and additives shall perform the grouting operations.

**Preliminary repairs:** All cracked or deteriorated material shall be removed from the manhole and the CONTRACTOR shall cut and trim all roots within the manhole. The CONTRACTOR shall seal all unsealed lifting holes, unsealed step holes, pre-cast manhole section joints, and voids larger than approximately 1/2" in thickness with a waterproof quick-setting mortar, Strong Seal QSR; Quadex Hyperform in accordance with the manufacturer's specifications.

**Drilling and Injection:** Injection holes shall be drilled through the manhole at 120-degree angles from each other at the same plane of elevation. Rows shall be separated no more than three vertical feet, and the holes shall be staggered with the holes in the rows above and below. Provide additional injection holes near observed defects, bench and trough and at pipe seals. At all visible leaks and areas with evidence of leaks within the manhole structure, a hole shall be carefully drilled from within the manhole and shall extend through the entire manhole wall. A minimum of 6 injection holes shall be provided in the walls/cone and three injection holes at each pipe seal and at the bench/trough.

Manholes shall be grouted completely from the top of the corbel or bottom of flattop to the pipe invert. Grout shall be injected through the holes under pressure with a suitable probe. Grout ports or sealant injection devices shall be placed in these previously drilled holes in such a way as to provide a watertight seal between the holes and the injection device. A hose, or hoses, shall be attached to the injection device from an injection pump. Grouting from the ground surface shall not be allowed. Grout travel shall be verified by observation of grout to defects or adjacent injection holes. Provide additional injection holes, if necessary to ensure grout travel. Care shall be taken during the pumping operation to ensure that excessive pressures do not develop and cause damage to the manhole structure or surrounding surface features. Grout shall be injected through the lowest holes first. The procedure shall be completed until the manhole is externally sealed with grout, resulting in a chemical grout curtain.

**Sealing After Grouting:** Upon completion of the injection, all chemical grout material shall be removed from interior surfaces of the manhole. After grouting is completed, the grout ports shall be removed and the remaining holes shall be cleaned with a drill and filled with quick-setting hydraulic mortar and troweled flush with the surface of the manhole walls or other surfaces. The mortar used shall be a non-shrink patching mortar such as Strong Seal QSR; Quadex Hyperform. In addition to filling the holes the interior surface of the manhole shall be patched with a ½" thick quick setting mortar such as Strong Seal QSR; Quadex Hyperform. This coating shall cover at least 6" either side of the joint sealed or where injection holes were drilled.

**Grout Wall Joint:** The procedures for Grout Wall Joint shall be the same as listed above for a complete curtain grout manhole, but shall be limited to wall joints and/or areas with evidence of infiltration for each manhole indicated on the plans. Holes shall be carefully drilled from within the manhole and shall extend through the entire manhole wall. In cases where there are multiple leaks around the circumference of the manhole, fewer holes may be drilled, providing all leakage is stopped from these holes. Grout ports or sealant injection devices shall be placed in these previously drilled holes in such a way as to provide a watertight seal between the holes and the injection device. A hose, or hoses, shall be attached to the injection device from an injection pump. Grout travel shall be verified by observation of grout to defects or adjacent injection holes. Provide additional injection holes, if necessary to ensure grout travel.

Sealing after grouting wall joints shall be the same as above and shall include patching with a ½" thick quick setting mortar such as Strong Seal QSR; Quadex Hyperform and shall cover at least 6" either side of the joint sealed or where injection holes were drilled.

**Curtain Grout Bottom 18":** The procedures for Curtain Grout Bottom, 18" shall be the same as indicated above, but shall be limited to the bottom portion of the manhole. Pipe seal grouting shall include all pipe seals in the specified manhole and grouting of the bench/trough, wall/bench joint and walls to the maximum height of 18" from the crown of the pipe. Provide additional injection holes near observed defects, bench and trough and at pipe seals. At all visible leaks, a hole shall be carefully drilled from within the manhole and shall extend through the entire manhole wall. A minimum of three injection holes at each pipe seal and at the bench/trough shall be required.

Sealing after grouting manhole bottoms shall be the same as above and shall include patching with a ½" thick quick setting mortar such as Strong Seal QSR; Quadex Hyperform and shall cover at least 6" either side of each location sealed or where injection holes were drilled.

**Final Acceptance:** After the specified sealing work has been completed, the manholes shall be visually inspected by the CONTRACTOR (as required) in the presence of the Owner and ENGINEER and found to be acceptable.

## REPAIR BENCH AND TROUGH

**Description:** Invert repair shall be performed on all inverts with visible damage or where infiltration is present or when vacuum testing is specified. After blocking the flow through the manhole and thoroughly cleaning the invert, a quick-setting patch material shall be applied in an expeditious manner. The material shall be troweled uniformly onto the damaged invert at a minimum thickness of ½ inch at the invert extending out onto the bench of the manhole sufficiently to tie into the structural monolithic liner to be spray applied. The finished invert shall be smooth and free of ridges. The flow may be re-established in the manhole within 30 minutes after placement of the material.

The trough shall then be coated with a cementitious product such as Strong Seal MS2-A in the manner specified in Manhole Sealing (Cementitious).

**Method of Measurement and Basis of Payment.** The CONTRACTOR shall provide the necessary tools and equipment to complete all work as described above. This work shall be considered included in the relative work item being paid for. The Contract unit price for all work items shall be payment in full for performing the work and for furnishing all labor, supervision, materials, equipment, and testing necessary to complete the specified work.

This work to route and seal cracks in the manhole shall be measured and paid for per FOOT for ROUTING AND SEALING CRACKS and shall include all labor and materials to complete the work as described in the above provisions for route and sealing cracks.

The work for grouting wall joints shall be measured and paid for per FOOT for SANITARY SEWER MANHOLE INTERIOR REHABILITATION.

The work to complete a curtain grouting of the manhole shall be measured for payment based on vertical height to be grouted regardless of the manhole diameter and shall be paid per FOOT for SEWER MANHOLE REHABILITATION, LEVEL B.

The work to repair the manhole bench and trough shall be measured for payment based on the actual bench/trough length along the centerline of the bench/trough per FOOT for SEWER MANHOLE REHABILITATION, LEVEL C.

**COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12 (SPECIAL)**

**Description.** This work shall consist of the construction of new Type B-6.12 or Type B-6.24 curb and gutter in variable depth resurfacing sections at locations shown on the plans. This work shall be done in accordance with Section 606 of the Standard Specifications and the plan typical section details.

All curb and gutter removed shall be formed within 2 working days of removal. New curb and gutter shall be poured within 1 working day of being formed. The forms shall be removed within 1 working day after the concrete pour and the backfilling behind the new curb shall be done within 24 hours after removal of the forms. All low areas shall be filled in to match the surrounding grades within 72 hours of the curb being poured.

After removing the existing curb and gutter by saw cutting between the existing edge of pavement and the curb and gutter, Combination Concrete Curb and Gutter, Type B-6.12 (Special) or Combination Concrete Curb and Gutter, Type B-6.24 (Special) shall be constructed so that the bottom of the proposed curb and gutter matches the bottom of the existing PCC Base Course. Due to the differences in the elevations between the existing edge of pavement and the proposed edge of pavement, the gutter depths will vary from a minimum of 10” to a maximum of 24”. When the proposed edge of pavement is between 0’ and 1’ wider than the existing edge of pavement, the contractor has the option to pour the 10” PCC base course widening monolithically with the curb and gutter but it will be paid for separately as PORTLAND CEMENT CONCRETE BASE COURSE WIDENING 10”.

The method of measurement shall conform to Article 606.14 (b) of the Standard Specifications.

**Basis of Payment.** This work shall be paid for at the contract unit price per FOOT for COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12 (SPECIAL) which price shall include all labor, materials, and equipment necessary to construct the work.

## **CONCRETE RIBBON**

**Description.** This work consists of constructing a concrete ribbon at the locations shown in accordance with the applicable portions of Sections 606 and 440 of the Standard Specifications, details in the plans and as directed by the Engineer.

The concrete ribbon shall be constructed at the elevation as shown on the plan. An expansion joint shall be constructed at each edge of pavement with one #6 epoxy coated dowel bar installed at each location where the expansion joint meets the curb. There shall be a tooled control joint at the crown (centerline of roadway). The concrete ribbon shall be constructed to match the proposed cross slope of the pavement at each location. The concrete ribbon shall be constructed to the depth of the proposed pavement section including the aggregate base course layer. If the Contractor removes or damages the existing curb, gutter or curb and gutter adjacent to the proposed concrete ribbon, the Contractor will be required to remove and replace that portion at his own expense to the satisfaction of the Engineer. All additional removal of existing pavement or subgrade materials in order to construct the concrete ribbon as specified shall be considered incidental to the price for CONCRETE RIBBON.

**Basis of Payment.** This work will be paid for at the contract unit price per FOOT for CONCRETE RIBBON which price shall include all labor, material and equipment necessary to construct this item as specified herein.

## **CONCRETE TRUCK WASHOUT**

**Description.** This work shall consist of constructing a barrier wall, earthen type, or straw bale temporary concrete truck washout facility at the locations shown on the plans or as determined in the field by the ENGINEER per the details shown in the plans.

**Method of Measurement and Basis of Payment.** This work shall be paid for at the contract unit price per EACH for CONCRETE TRUCK WASHOUT, which prices shall include, plan submittal, general cleaning and removal of all construction debris when two-thirds full or as directed by the Engineer, general maintenance or reconstruct as necessary throughout the duration of use, and all material, labor, tools, equipment, disposal of surplus material, and incidentals necessary to complete this item of work.

Payment for this item will be considered one per each construction year regardless of how many cleanings are required. The contractor with the approval of the Engineer may choose to utilize multiple truck washouts for his work operations. Regardless of how many washout basins are used during the duration of the project, the concrete truck washout(s) will be measured for payment as one for each construction year.

If an alternate design for the washout basin has been submitted and approved for use in the project there shall be no additional compensation to the original unit bid price for Concrete Truck Washout.

## **CONSTRUCTION NOISE RESTRICTIONS**

Add the following to Article 107.35 of the Standard Specifications:

In accordance with the Village Noise Ordinance 20-13.7, all Work shall be performed between the hours of 7:00 AM and 7:00 PM, Monday through Friday, and between 9:00 AM and 5:00 PM on Saturday, except in the case of urgent necessity as determined by the Director of Engineering. No work shall be performed on Sundays.

## **CONSTRUCTION VIBRATION MONITORING**

**Description.** This work consists of monitoring buildings, structures, tunnels and other locations susceptible to vibration from construction activities.

The Contractor shall furnish monitoring equipment and all equipment and labor necessary to install and monitor adjacent buildings and structures for vibration. The Contractor shall designate a minimum of two monitoring point locations for each of the structures located within the following station ranges on Central Avenue and Wilmette Avenue, at a minimum:

- Central Avenue – Station 105+00 to 112+10 Left and Station 107+00 to Station 112+25 Right
- Wilmette Avenue – Station 397+90 to Station 405+85 Right and Station 401+20 to Station 405+15 Left

**Additional Testing.** In addition to the location listed above, this work will allow for testing at two (2) additional locations as directed by the Engineer.

The Contractor is solely responsible for determining the means, methods and sequences of construction, and may identify additional locations beyond those listed above for monitoring vibration. The cost for monitoring the additional locations identified by the Contractor is included in the LUMP SUM contract unit price for CONSTRUCTION VIBRATION MONITORING.

The Contractor shall coordinate with the Engineer and building/structure owners to ensure the proposed monitoring locations are acceptable to the building owners and accessible to both the Contractor and the Engineer at all times. The proposed locations of building vibration points are to be submitted to the Engineer for approval prior to the start of construction. Selection of the building vibration monitoring points shall be coordinated during the pre-construction condition surveys with the Engineer.

**Vibration Monitoring.** The Contractor shall employ the services of a qualified vibration monitoring consultant. Monitoring point locations and frequency of data collection shall be as determined by the Contractor's Consultant and are subject to the approval of the Engineer. All vibration monitors shall be attached to the floor of the buildings or structures being monitored. Vibration monitoring shall be a

continuous and uninterrupted process and must be in place prior to the start of any construction activity. All vibration monitors for the project shall be programmed to actuate an alarm when the Threshold Value or Limiting Value is reached. The alarm notification protocol shall consist of the immediate dialing of mobile telephone numbers of the Engineer (or his/her authorized representative) and the Prime Contractor.

**Response Value.** The Contractor shall establish the response values, including both the Threshold Value and the Limiting Value, for each building and structure.

- **Threshold Value:** A Threshold Value is a warning value. If Threshold Values are achieved, the Contractor must stop the work, determine the best course of action to reduce the vibrations and implement corrective actions to the design and/or construction methods to avoid reaching Limiting Values.
- **Limiting Value:** A Limiting Value is an alarm value. If Limiting Values are achieved, construction work shall stop immediately, the Adjacent Structures shall be surveyed for signs of additional distress from pre-construction surveys, and corrective action shall be taken to revise the design and/or construction methods to protect the adjacent structures from damage.

If the Threshold Value or Limiting Value is reached, all vibration inducing work shall be stopped. The Contractor shall establish the horizontal/vertical distance limit requirements between the vibration monitoring point location and the source of the vibration-inducing work to determine which construction operations must be stopped. Work may resume upon implementation of the action plan and with the approval of the Engineer.

If the work is stopped because the Threshold Value or Limiting Value is reached there will be no additional compensation nor any additional time extensions granted. Any change in construction methods to avoid reaching the Limiting Value will not be grounds for additional compensation.

The Contractor must devise means and methods of construction that will not reach the established vibration response values. The Contractor is advised that particularly careful demolition/construction requirements may be required at locations where the property line is immediately adjacent to the area of construction.

**Action Plans.** Upon reaching or exceeding Response Values, the Contractor shall immediately notify the Engineer, and perform the following:

- **Threshold Values:** If Threshold Values are achieved, the Contractor must stop the work and evaluate the means, methods, and sequences of construction and data collection/reporting frequency. The Contractor shall provide a submittal within 24 hours of the Threshold Values being reached that summarizes the means, methods and sequences of construction to be used to preclude reaching Limiting Values, and that identifies modifications to the data collection and data reporting frequencies. Provide a summary report to the Engineer for review and approval.

- Limiting Values: Immediately stop construction work in the zone of influence of the instrument, and coordinate a meeting with the Engineer to evaluate distress, discuss corrective actions, develop alternate means, methods, and sequences of construction, and identify modifications to data collection and reporting frequencies. The Contractor shall provide an action plan submittal within 24 hours of the Limiting Values being reached providing a summary report to the Engineer for review and approval.

**Corrective Measures.** If, at any time, resulting vibrations meet or exceed the established response values, the Contractor shall stop work immediately and initiate the necessary corrective measures as approved by the Engineer. Damage to the Adjacent Structures as a result of construction activity shall be corrected by the Contractor. No additional compensation shall be due to the Contractor for repairing Adjacent Structures. The Contractor shall not be entitled to any claim of damages or delay for stopping the project construction activities to make corrective measures.

**Submittals.** Submit the following items in a timely manner to allow for review and approval by the Engineer without delaying the work. Do not order materials or start work before receiving written approval from the Engineer.

- Vibration Control Plan shall include:
  - Locations of all vibration monitoring points, including property address and property contact information.
  - Procedure and outline for how the data will be provided to the Engineer.
  - Product Data: Type of vibration monitor to be used. Include construction details, material descriptions, performance properties, dimensions of individual components and profiles.
  - List of the Contractor's equipment to be used during demolition and construction operations.
  - Contact information for the Vibration Monitoring consultant and their staff.
  - Instrumentation plans, schedules, and details, including:
    - An instrumentation plan showing the type, location, and installation details of all instruments to be installed.
    - Monitoring and reporting frequency.
    - Timetable that outlines the duration that each monitoring point will be maintained and checked.
    - Reports of all monitoring (at the required frequencies listed above) including a description of the associated construction activity. The reports shall include a tabular and graphical summary of all readings to date.
  - Submit at least fourteen (14) calendar days before construction begins.
- Qualification Data for the following:
  - Firm(s) installing instrumentation and collecting readings. Firms shall have experience installing and reading similar instrumentation on at least five projects over the last five years.

- Response Value Report establishing the response values for the Threshold Value and the Limiting Value for each building and structure. Submit at least fourteen (14) calendar days before construction begins.
  - Action Plans describing potential changes to construction activities / means and methods within 24 hours if Response Values are reached during construction.

Additional Submittals include:

- Weekly reports of all vibration monitoring locations.

**Method of Measurement.** The work under this item as described herein will not be measured separately. It will be paid for as lump sum.

**Basis of Payment.** This work will be paid at the LUMP SUM contract unit price for CONSTRUCTION VIBRATION MONITORING which payment shall be full compensation for all work described herein and as directed and approved by the Engineer.

### **CONNECTION TO EXISTING WATER MAIN**

**Description.** This work shall consist of all labor, equipment and materials required to connect the proposed water main to the existing water main at locations indicated on the plans in accordance with the Standard Specifications for Sewer and Water Main Construction in Illinois.

**Basis of Payment.** This work shall be paid for at the contract unit price per EACH for CONNECTION TO EXISTING WATER MAIN, of the size specified, which shall be payment in full for all labor, equipment, materials, and all other work required to complete the installation of the water main connection including pipe, reducer, fittings, solid sleeve, excavation, backfill and legal disposal of all excess materials.

### **CUT AND CAP EXISTING WATER MAIN**

**Description.** This work shall consist of cutting the existing water main to be abandoned at locations shown on the plans. Existing water main to be abandoned in place shall be plugged with a mechanical cap fitting.

**Basis of Payment.** Payment shall be made at the contract unit price per EACH for CUT AND CAP EXISTING WATER MAIN of the size specified, which shall be payment in full for all excavation, cutting, plugging and capping, and backfilling.

## **DETECTABLE WARNINGS**

**Description.** This work shall consist of installing detectable warnings at locations shown on the plans or as directed by the ENGINEER.

Detectable warnings shall consist of a surface of truncated domes aligned in a square pattern (parallel alignment) or triangular pattern. Dome spacing, dome size, and detectable warning locations are shown in Highway Standard 424001 "Curb Ramps for Sidewalks". Detectable warning surfaces shall contrast visually with the adjacent walking surfaces by having light on dark, or dark on light; and, shall extend 24 inches in the direction of travel and the full width of the curb ramp, landing, or sidewalk (!DOT Memo 2004-18).

The CONTRACTOR shall provide and install bright yellow, pre-stamped, fiberglass reinforced plastic panels with reinforced truncated domes on all curb ramps or as mandated by the ADAAG, or as determined by the ENGINEER. These ramp panels shall comply with Highway Standard 424001 "Curb Ramps for Sidewalks". Any ramp panel substitutions must be submitted in writing to ENGINEER for approval.

Articles 424.08 - 424.12 of the Standard Specifications shall be replaced with the following:

424.08 Curb Ramps. Curb ramps shall be constructed according to the Americans with Disabilities Act Accessibility Guidelines (ADAAG), the Illinois Accessibility Code, and as shown on the plans. Curb ramps shall be constructed to the same thickness as the adjacent sidewalk with a minimum thickness of 100 mm (5 in.).

424.09 Detectable Warnings. The detectable warning shall be installed during the construction of the PCC sidewalk, with the top of the detectable warning flush with the surface of the sidewalk. All PCC sidewalk and aggregate subbase installed below the detectable warning shall be considered incidental to the DETECTABLE WARNINGS. The detectable warning shall be installed according to the manufacturer's specifications.

The detectable warnings shall be installed at curb ramps, medians and pedestrian refuge islands, at-grade railroad crossings, transit platform edges, and other locations where pedestrians are required to cross a hazardous vehicular way. Detectable warnings shall also be installed at alleys and commercial entrances when permanent traffic control devices are present (!DOT Memo 2004-18). The installation shall be an integral part of the walking surface and only the actual domes shall project above the walking surface.

424.10 Backfill. After the concrete has been cured, the spaces along the edges of the sidewalk and ramps shall be backfilled with approved material. The material shall be compacted until firm and the surface neatly graded.

424.11 Disposal of Surplus Material. Surplus or waste material shall be disposed of according to Article 202.03.

**Method of Measurement and Basis of Payment.** This work will be measured and paid for at the contract unit price per SQUARE FOOT for DETECTABLE WARNINGS, which price shall include all materials, labor, and equipment necessary to perform the work as shown in the construction detail and specified herein. Each detectable warning shall be considered the full 2' x 5' detectable warning area.

### **DROP MANHOLE CONNECTION**

**Description:** This item shall include making proposed drop connections to existing manholes. The drop connection(s) shall be constructed at the locations shown in the plans and in accordance with the details shown on the plans and MWRD requirements contained herein.

An exterior drop pipe must be provided for a sewer entering a manhole at an elevation of 24 inches or more above the manhole invert, as provided in the State of Illinois Title 35, Part 370. The minimum diameter of any manhole shall be 48 inches. A rubber boot conforming to ASTM C-923, shall be provided for all connections between sanitary sewers and manholes, for all connections between combined sewers and manholes, and for all connections between storm sewers and storm sewer structures that are tributary to the District's collection system.

All holes required to make the drop connection shall be core drilled.

The diameter of the drop pipe shall preferably be larger than, or of the same diameter as, the entering sewer. The minimum diameter of the drop pipe shall not be smaller than the diameter of the entering sewer by more than two nominal diameters (e.g. for 12", 15" and 18" entering sewer, the drop shall be 8", 10" and 12" respectively), provided that the minimum diameter of the drop pipe shall not be less than 8". If a smaller drop pipe is desired, the Contractor shall submit for review and approval design calculations and configurations signed by a licensed professional engineer in the state of Illinois.

The drop pipe shall be encased in concrete. If the optional cleanout is not required by local requirements, the concrete encasement shall be placed a minimum of 1-foot above the top of the incoming pipe. The flow channel through manholes shall be made to conform in shape and slope to that of the sewers. A bench shall be provided which shall have a minimum slope of two (2) inches per foot. A drop manhole is required when a storm sewer discharges to a combined sewer and the change in elevation is 24 inches or more.

A steel plate dam shall be constructed for the incoming pipe at the manhole connection as detailed in the plans. The proposed sewer pipe connections shall be made to the drop connection piping with couplings suitable for dissimilar pipes and shall be approved by the Engineer.

**Method of Measurement.** Drop manhole connection(s) will be measure per each for each individual connection to the structure.

**Basis of Payment.** This work will be paid for at the contract unit price per EACH for DROP MANHOLE CONNECTION, which price shall include drop connection piping, elbows and fittings, concrete encasement, pipe connection coupling (dissimilar pipes), rubber manhole boot, trench backfill, core drilling and all materials, labor, and equipment necessary to perform the work as shown in the construction detail and specified herein. Each connection

### **DUCTILE IRON WATER MAIN**

**General.** This work shall include the furnishing of all labor and materials required for the construction of a water main and all tees, bends, reducers, crosses of the required inside diameter constructed as specified herein and in the standard specifications, and conforming in all respects to the lines, grades, and locations shown on the plans or furnished by the ENGINEER.

**Materials.** Ductile iron water mains shall conform to ANSI specifications A21.51, thickness Class 52, with cement lining conforming to specification A21.4 and shall be coated on the outside with zinc. Joints shall be push-on conforming to ANSI specification A21.11. All gaskets for push-on and mechanical joints must be lubricated prior to installation.

**Installation.** Excavation of water mains shall conform to the provisions of Section 20, 21 and 22 of the "Standard Specifications for Water and Sewer Main Construction" and as specified herein. The water main shall be laid with the minimum cover of five feet six inches (5'- 6") measured from the top of the pipe to finished grade or as indicated on the plans. The trench width shall be ample to permit the pipe to be laid and jointed properly and the backfill to be placed and compacted.

Whenever the term "granular" materials is used in the context of this article, it shall imply coarse aggregate, CA-6, meeting the requirements of the "Standard Specifications for Road and Bridge Construction", as prepared by the State of Illinois, Department of Transportation.

All backfill of water mains within two (2) feet of curb lines and under sidewalks, driveways, and pavement shall be done using granular materials in accordance with Section 20-2.21 B (3) and shall be compacted in accordance with Section 20-2.21 B (2) except to a density of 95% standard proctor. Granular backfill shall be measured for payment according to standard drawing #2 of the standard specifications and paid for at the contract unit price per cubic yard for "selected granular backfill, compacted", except as modified herein. Backfill of water mains shall otherwise be governed by section 20-2.21B (1) of the "Standard Specifications for Water and Sewer Main Construction".

No clamps are allowed on the new water main, only cut-ins.

Testing. A two- hour test combining the pressure test and leakage test shall be made in accordance with sections 41-2.13A, 41-2.13B, 41-2.13C, AND 41-2.13C of the "Standard specifications for water and sewer main construction". The test pressure shall be 150 psi for a minimum of two (2) hours.

No bell clamps are allowed during pressure testing.

**Final Connections to Existing Mains.** Water mains and appurtenances must be completely installed, flushed, disinfected, and satisfactory bacteriological sample results received prior to permanent connections being made to the active distribution system. Sanitary construction practices must be followed during installation of the final connection, so that there is no contamination of the new or existing water main with foreign material or groundwater.

a. *Connections equal to or less than one pipe length (<18 ft):* New pipe, fittings, and valve(s) required for the connection may be spray-disinfected or swabbed with a minimum 1-5% solution of chlorine just prior to being installed, if the total length of the connection from the end of a new main to the existing main is equal to or less than 18 ft.

b. *Connections greater than one pipe length (>18 ft):* Pipe required for the connection must be set up aboveground, disinfected, and bacteriological samples taken, as described in Section 5 of AWWA C651-9g if the total length of the connection from the end of a new main to the existing main is greater than 18 ft. after satisfactory bacteriological sample results have been received for the "pre-disinfected" pipe, the pipe can be used in connecting the new main to the active distribution system. Between the time the satisfactory bacteriological sample results are received and the time that the connection piping is installed, the ends of the piping must be sealed with plastic wraps, watertight plugs, or caps.

**Chlorination.** Before being placed into service, all new water mains shall be chlorinated in accordance with Sections 41-2.14B, 41-2.14C, 41-2.14C(1), 41-2.14C(2), and 41-2.14D of the "Standard specifications for water and sewer main construction".

**Method of Measurement and Basis of Payment.** This work shall be paid for at the contract unit price per FOOT for DUCTILE IRON WATER MAIN of the size indicated on the plans and as specified herein, constructed as required, including all fittings (tees, bends, reducers, crosses, etc.), and granular bedding and cradle, all in accordance with the requirements and provisions as outlined above and in the Standard Specifications.

## **DUST CONTROL, SPECIAL**

**Description.** This work shall consist of the exclusive control of dust resulting from construction operations. Dust shall be controlled by the uniform application of sprinkled calcium chloride and shall be applied only when directed by the Engineer, in a manner meeting his/her approval.

All equipment used for this work shall meet the Engineer's approval. All calcium chloride used shall be properly documented by ticket or other approved means. This work shall be measured in units of gallons of calcium chloride applied.

**Basis of Payment.** This item shall be paid for at the Contract unit price per GALLON of DUST CONTROL, SPECIAL.

## **EXISTING LIGHT POLE FOUNDATION ADJUSTMENT**

**Description.** This work shall consist of foundation adjustments of the existing light pole foundation where necessary when the existing light pole foundation is below the proposed sidewalk cross slope or as directed by the Engineer. The Contractor shall be responsible for removing the existing light pole without damage and reinstallation on the adjusted foundation. Damage to the light pole will result in the Contractor furnishing and installing a new pole at his/her own expense.

Existing wiring shall be disconnected once the existing light pole has been removed. The poles and luminaries shall be store onsite in a location approved by the Engineer. The anchor bolts shall be cut flush with the top of concrete foundation.

The bolt circle of the new anchor bolts shall be rotated a minimum of 2.5-inches away from the existing anchor bolts. New anchor bolts shall be ¾-inch diameter with minimum 12-inch embedment into the existing concrete foundation and 3-inch threaded length above the top of foundation. New anchor bolts shall be installed using a HIT-RE 500 exposed adhesive anchoring system.

Anchor bolts shall be according to Article 1006.09 and shall be hot dipped galvanized.

The conduits, both steel and plastic duct, shall be extended to an elevation above the proposed top of foundation grade. When extending the conduits, a larger pipe, 3-inch diameter, shall be placed around the conduits and the bottom sealed to avoid encasing existing conduits in concrete.

The foundation shall be raised with concrete to an elevation of at least ¾ inch above the proposed sidewalk elevation. The concrete shall be finished level with a ¾ inch chamfer around the edge. The concrete adjustment shall be of the same shape and dimension as the existing light pole foundation.

This work shall also include all necessary wiring required to reconnect the light pole including but not limited to extending raceways, duct, and wiring.

**Basis of Payment.** This work shall be paid for at the contract unit price per EACH for EXISTING LIGHT POLE FOUNDATION ADJUSTMENT which will include the all necessary equipment, labor and materials to complete the work mentioned herein.

### **FAILURE TO COMPLETE PLANT CARE AND ESTABLISHMENT WORK ON TIME**

Should the Contractor fail to complete the plant care and/or supplemental watering work within the scheduled time frame as specified in the Special Provision for “Tree Planting” and “Supplemental Watering“, or within 24 hours notification from the Engineer, or within such extended times as may have been allowed by the Department, the Contractor shall be liable to the Department in the amount of \$50.00 per tree/per day and \$40.00 per shrub/per day, not as penalty but as liquidated damages, for each calendar day or a portion thereof of overrun in the contract time or such extended time as may have been allowed.

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

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

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

Should the Contractor fail to complete the work on or before the completion date as specified in the Special Provision for "Interim Completion Dates and Completion Date Plus Working Days", or within such extended time as may have been allowed by the Department, the Contractor shall be liable to the Department in the amount of \$2,300, not as a penalty but as liquidated damages, for each calendar day or a portion thereof of overrun in the contract time or such extended time as may have been allowed.

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

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

### **FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX**

**Description.** This work shall consist of furnishing new fire hydrants of the type and size specified herein below at the locations indicated on the plans or otherwise directed by the ENGINEER.

**Materials.** Hydrants shall be of the compression or gate type conforming to the latest specifications of the American Water Works Association, C502, and shall be of a make that has been adopted by the owner as standard. Hydrants shall be designed for a 150-pound working pressure. Hydrants shall be finished with two (2), two and one-half inch (2-1/2") hose nozzles, and one (1) four and one-half (4-1/2") steamer connection. Threads on nozzles and caps shall be national standard thread and shall conform to the standard adopted by the owner. Hydrants shall open by turning to the left or counter-clockwise and shall be so marked. All new fire hydrants furnished under this contract shall be made by a Factory Painted "Safety Red" color 5-1/4 Clow Eddy Model F-2640 and shall have traffic flange construction design with a break way flange and mechanism at the ground line. A detail of the fire hydrant is shown in the plans.

Hydrants shall have a six-inch (6") pipe connection, shall be equipped with a (6") auxiliary valve, and shall have a five and one-quarter inch (5-1/4") valve opening. The auxiliary valve shall be attached to the hydrant by means of an 18" to 24" long, 6" spool piece with wedge type mechanical joint couplings. The joint for joining the auxiliary valve shall be fitted with a cast iron valve box compatible with the auxiliary valve and as detailed in the Standard Specifications for Water and Sewer Main Construction in Illinois and

the plans. The word "WATER" shall be on all valve boxes. The valve box shall be equipped with a stabilizer and shall be rubber of the type manufactured by Adapter Inc. Stabilizer and shall be installed between the valve box and the auxiliary valve. Mechanical joint bolts shall be weather resistant steel meeting the requirements for ASTM A242-HSLA, SS304 and SS316.

A hydrant and valve box grip shall be furnished and installed to hold the valve box in place during the backfilling operation.

**Installation.** Hydrants shall be set at the locations indicated on the plans and shall be such length that with the frost ring nearly at the ground level, there will be five and one-half feet (5- 1/2') of cover over the connecting pipe and the height of the nut on the cap is 18"-24" above the ground. At least four feet (4') of cover will be provided across ditches. Hydrants shall be placed on a large, flat stone, and shall have a minimum of one-half cubic yard (1/2cy.) of porous stone 3-inch in size around the base to provide drainage for the hydrant drip. This shall include a 3-4 mil. plastic barrier, between the gravel drain field and the earth cover. All hydrants shall be properly braced to prevent movement. Any mechanical joint glands required on any mechanical joint fittings necessary for the installation of the hydrants shall be retainer- type glands. All hydrants shall be placed so that the steamer connection is facing the existing roadway.

**Method of Measurement and Basis of Payment.** This work will be paid for at the contract unit price per EACH for FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX, which price for all work shall include the fire hydrant, auxiliary valve and valve box, plastic film barrier, six-inch water main between the valve and hydrant, thrust blocks and restraints, bedding and backfill, which price shall be payment in full for all labor, equipment, and material, including backfill, necessary to complete the work as specified herein.

### **FIRE HYDRANTS TO BE REMOVED**

**Description.** This work shall consist of the removal of existing fire hydrants, including auxiliary valves, and plugging and blocking of abandoned water main as indicated on the plans or required by the ENGINEER. With Village's approval, the auxiliary valve can be left in place, closed, blocked, restrained, and used as a plug, but the Village/ENGINEER must witness they have been properly closed. The existing fire hydrants are not to be removed until after the new fire hydrants have been installed and satisfactorily tested. The fire hydrants to be removed shall become the property of the Village and shall be delivered to the Public Works Facility. The hole shall be backfilled with TRENCH BACKFILL, SPECIAL, which shall be incidental to this pay item.

**Method of Measurement and Basis of Payment.** This work will be paid for at the contract unit price per EACH for FIRE HYDRANTS TO BE REMOVED, which price shall be payment in full for all labor, equipment, and material, including backfill, necessary to complete the work as specified herein.

## **FRAMES AND LIDS**

**Description.** This work shall consist of furnishing and installing structure frame and grates of the types specified as shown on the plans, in accordance with Sections 602 and 604 of the Standard Specifications, and as determined by the ENGINEER. Type 1 Frames and Lids shall be IDOT Type 1 per IDOT Standard 604001 and shall be of a 'heavy duty' type and consist of the following:

### **For Sewer Manholes and Valve Vaults**

**Frame & Closed Lid:** Shall be 'self-sealing' with neoprene gasket and 2 concealed pick holes. All closed lids shall have the words "SANITARY", "STORM", "COMBINED", or "WATER" cast into them.

**Method of Measurement and Basis of Payment.** This work will not be paid for separately, but shall be INCLUDED in the cost of the proposed structure.

## **FRAMES AND LIDS TO BE ADJUSTED (SPECIAL)**

**Description.** This work shall conform to the requirements of Section 603 of the Standard Specifications and District Detail BD-08 "Details for Frames and Lids Adjustment with Milling" for adjustment of structures in resurfacing sections of the project.

Add the following to Section 603 of the Standard Specifications:

This work shall include replacement of existing broken adjustment rings and patching inside the structures between pipes and structures with hydraulic cement at locations as directed by the engineer. If the structure is a combination sewer or sanitary manhole then chimney seals shall be provided. All drainage structure adjustments and frames and lids to be adjusted (special) shall use Portland Cement Concrete. Hot-Mix Asphalt will not be allowed. Each joint shall be sealed according to the manufacturer's specifications as directed per article 602.02 of the Standard Specifications.

**Method of Measurement and Basis of Payment.** This work will be paid for at the contract unit price per EACH for FRAMES AND LIDS TO BE ADJUSTED (SPECIAL), which price shall be payment in full for all labor, equipment, and material, necessary to complete the work as specified herein.

## **GATEWAY ENTRANCE SIGNS**

**Scope of Work:** This work shall consist of furnishing and installing the Gateway Entrance Signs as shown on plans or as directed by the Engineer.

**Description:** This work shall consist of constructing masonry seat walls with reinforced concrete foundation on a prepared subgrade, with limestone veneer, limestone cap, aluminum sign lettering and precast planter pots as specified herein, as shown on the plans, and as directed by the Engineer. Work shall include all excavation, base material, formwork, reinforcement, finishing, and cleanup necessary for construction of gateway signs.

Summary: This section includes the following:

- A. Limestone Veener
- B. Limestone Cap
- C. Metal Anchors
- D. Joint Backing and Sealant
- E. Aluminum Sign Lettering
- F. Precast Concrete Planter Pots
- G. Protection and Clean up

### **Submittals:**

- A. Product Data: For each variety of stone, stone accessory, planter, and other manufactured project specified.
- B. Shop drawings: Show fabrication and installation details for entire gateway sign assembly.
  - i) Include plans, elevations and at least 3/4" inch scale sections of typical members and other components and construction details. Show anchors, reinforcement, accessories, layout, and installation details.
- C. Samples: Prior to providing samples for items b-e below, contractor shall provide samples of the gateway sign components as follows:
  - a. Limestone veneer – provide (3) sample boards for final stone selection. Sample boards shall demonstrate the full range of stone color and texture.
    - i. Halquist Stone, Fond Du Lac Buff Stakledge
    - ii. Halquist Stone, Fond Du Lac Silver Stakledge
    - iii. Halquist Stone, Wilsey Bay Stakledge

- b. Limestone cap – following selection of the veneer stone color in ‘a’ above, provide (3) samples of limestone cap samples that are comparable in color to the selected veneer stone. Limestone cap sample shall be 4”x4” in size.
  - c. Mortar – provide full range of standard color samples for selection
  - d. Precast Concrete Planter Pot – provide (3) samples of precast color samples that are comparable in color to the selected veneer stone and limestone cap options. Precast concrete samples shall be 4”x4” in size.
  - e. Aluminum channel lettering – provide (3) samples of aluminum channel lettering. Sample colors shall be as follows:
    - i. Black
    - ii. Dark Bronze
    - iii. Dark Gray
- D. Mockups: Provide a 18” ht x 5’ length mockup of the wall assembly. The purpose of this mockup will be to review the entire assembly prior to installation of the entire wall. If approved, this mockup may become part of the final installation.
- E. Qualifications: Installer must submit evidence of a successful installation history with comparable materials and designs specified.

**Materials:**

- Description: Limestone Full Veener  
Manufacturer: Halquist Stone  
262-246-9000  
[www.halquiststone.com](http://www.halquiststone.com)  
Mike Slagle: [mikes@halquiststone.com](mailto:mikes@halquiststone.com), 262-246-3218  
Reference: Stakledge Collection, natural 3/4” – 3” heights, random lengths,  
full stone veneer 4” bed depth, final color to be determined per sample submittals.
- Description: Limestone Coping  
Manufacturer: Halquist Stone  
262-246-9000  
[www.halquiststone.com](http://www.halquiststone.com)  
Mike Slagle: [mikes@halquiststone.com](mailto:mikes@halquiststone.com), 262-246-3218  
Reference: Halquist Stone Grey Bedford (Indiana Limestone), sizing and finishes per details, 3”  
thick limestone coping, smooth top with rockfaced edges

Description: Signage  
Manufacturer: Parvin Clauss Sign Company  
(630) 510-2020 x3018  
<http://www.parvinclauss.com/>  
Brian Newton: [bnewton@parvinclauss.com](mailto:bnewton@parvinclauss.com), 630-510-2020  
Reference: Cast aluminum pin mounted lettering

Description: Precast Concrete Planter Pot  
Manufacturer: Classic Garden Ornaments, Longshadow  
(618) 893-4831  
<http://www.longshadow.com>  
Reference: Cast concrete planter pots  
Wabash 26 & Base 26 Square LS 9426  
Size: 13" high, 26" diameter, 26" square base

**Accessories:**

- A. Anchors, Stainless steel, Type 304 of sizes and configurations required for support of stone and applicable superimposed loads.
- B. Bolts, Washers and Nuts: Stainless steel, Type 304.
- C. Cleaning Solution: Type which will not harm stone, joint materials or adjacent surfaces. Consult stone supplier for recommended types.

**Preparation:**

- A. Examine subgrade for any hidden voids, obstructions or foreign matter.
- B. Ensure footings and bases are true and level and swept clean of obstructions.
- C. Clean stone surfaces that have become dirty or stained by removing soil, stains, and foreign materials before setting. Clean stone by thoroughly scrubbing with fiber brushes and then drenching with clear water. Use only mild cleaning compounds that contain no caustic or harsh materials or abrasives.
- D. On concrete footings lay first stone course in 3/4" mortar setting bed.

**Installation (Limestone Full Veener):**

- A. General: Fabricate wall as indicated on the Drawings.
  - i. For limestone, comply with recommendations of ILI's "Indiana Limestone Handbook."
- B. Form external corners to quick and head joint profile.
- C. Slope expose top surface of stone and horizontal still and cap surfaces for natural wash.
- D. Cut stone where necessary to produce pieces of thickness, size, and shape indicated and to comply with fabrication and construction tolerances recommended by applicable stone association or, if none, by stone source, for faces, edges, beds, and backs. Clean sawn backs of stone to remove rust stains and iron particles.
- E. Mortar joints to be ½” natural non-staining (rake back ½”)

**Installation (Limestone Cap):**

- A. General: Install limestone cap as indicated on the Drawings.
  - i. For limestone, comply with recommendations of ILI's "Indiana Limestone Handbook."
- B. Limestone cap to be set on cast in place concrete with ¾” mortar joint.
- C. Core (4) ½” dia x 6” stainless steel dowels into cast in place concrete and limestone cap as indicated on the Drawings.
- D. Limestone cap to have ¼” continuous dripline as indicated on the Drawings.

**Installation (Precast Concrete Planter Pot):**

- A. General: Install Precast Planter Pot as indicated on the drawings and as recommended by the manufacturer.
- B. Precast Concrete Planter Pot to be installed in limestone cap with dowels and ¾” mortar joint.
- C. Core (4) ½” dia x 6” stainless steel dowels into limestone cap as indicated on the Drawings.

**Installation (Aluminum Lettering):**

- A. General: Install pin mounted cast aluminum lettering as indicated on the drawings and as recommended by the manufacturer.
- B. Aluminum lettering to be fabricated with stainless steel dowels and installed in stone veneer with dowels and mortar infill.
- C. Core stainless steel dowels into limestone veneer as indicated on the Drawings and as recommended by the manufacturer. Adjust individual lettering as required to provide a sign text display that is parallel to grade and in an even plane.

**Method of Measurement:** Furnishing and installing the complete assembly of GATEWAY ENTRANCE SIGNS and all associated equipment and materials, including foundation, stone veneer, stone cap, aluminum lettering and precast concrete planter pots, will be measured in place per EACH.

**Basis of Payment:** This item shall be paid for at the contract unit price EACH for the GATEWAY ENTRANCE SIGNS which price shall include labor, materials, equipment and incidentals necessary to complete all incidental items associated with the work.

**GEOTECHNICAL REINFORCEMENT**

**Description.** This work shall consist of furnishing and installing integrally-formed polypropylene biaxial or multi axial geogrid reinforcement material. The geogrid shall have aperture, rib, and junction cross section sufficient to permit significant mechanical interlock with the material being reinforced. There shall be a high continuity of tensile strength through all ribs and junctions of the geogrid material to reinforce the subbase or subgrade in identified locations. The contractor shall present design calculations showing the geogrid can fulfil the project requirements as shown on the plans and other projects documents.

**Materials.**

- (a) Geogrid - The geogrid shall conform to the requirement listed in Table 1. The supplier/contactor shall provide a certification that the product meets the requirements.

Table 1 – Required Geogrid Properties

MATERIAL CHARACTERISTICS	TEST METHOD	DATA
Polymer type		polypropylene
Carbon Black Content	ASTM D 4218	0.50% (min.)

DIMENSIONAL CHARACTERISTICS	TEST METHOD	DATA
Open Area	COE-CW 02215	75 % (max.)
Aperture Area	Measured	1.3 sqin (min)
Unit Weight	ASTM D 5261	5.0 oz/yd <sup>2</sup> (min.)

TECHNICAL CHARACTERISTICS	TEST METHOD	DATA
Junction Efficiency	GRI-GG2 or ASTM D6637 and ASTM D7737	93% (min.)
Min. Radial Stiffness @ 0.5% Strain	ASTM D6637	23,989 lb/ft (min)
Resistance to UV Light and Weathering	ASTM D4355	70% at 500 Hours (min)

- (b) Aggregates - The aggregates shall conform to the AGGREGATE SUBGRADE IMPROVEMENT (D-1) Special Provision.

**Submittals.** A minimum of 60 calendar days prior to proposed installation, the Contractor shall submit the following information:

- a. Design calculations, certified by the manufacturer, identifying that the combination of the proposed geogrid material(s) and the aggregate subgrade improvement material provide an equivalent bearing capacity of 24” of aggregate subgrade improvement material meeting both installation conditions:
  - 12” of Aggregate Subgrade Improvement and geogrid reinforcement material(s) over Geotechnical Fabric for Ground Stabilization.
  - 9” of Aggregate Subgrade Improvement and geogrid reinforcement material(s) over Geotechnical Fabric for Ground Stabilization.
- b. Project specific installation plan describing subgrade preparation, the proposed layout and orientation of geogrids, loading, transportation and unloading requirements, storage requirements, requirements for field cutting and manipulation of geogrid, minimum overlap and joint treatments, requirements for securing the geogrid materials prior to and during aggregate placement, aggregate placement requirements – including minimum/maximum lift thicknesses, maximum vehicle loading and aggregate compaction requirements, and any additional manufacturer recommended data.
- c. Project specific quality control plan prepared by or approved by the manufacturer.

- d. Name and contact information of manufacturer representative responsible throughout material procurement, delivery and installation. This representative shall be available to the Engineer for all inquiries, including as needed, to be present during a portion of product installation.

**Installation.** The geogrid reinforcement shall be transported, stored, and placed as described herein and as shown on the plans. Geogrids shall meet the requirements of ASTM D 4873 "Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples."

Geogrids shall be delivered to the jobsite in such a manner as to facilitate handling and incorporation into the work without damage. Geogrids shall be stored in such a manner as to prevent exposure to direct sunlight and damage by other construction activities. During periods of shipment and storage, the geogrid shall be protected from temperatures greater than 140°F, mud, dirt, dust, and debris. Each geogrid roll shall be labeled or tagged to provide product identification. The manufacturer's recommendations shall be followed with regard to protection from direct sunlight. At the time of installation, the geogrid will be rejected if it has defects, tears, punctures, flaws, deterioration, or damage incurred during manufacture, transportation, or storage. All damaged portions of geogrid shall be replaced for the entire width of the roll. The Contractor shall furnish the product labels that clearly show the manufacture's or supplier's name, product identification, lot number, manufactured date, roll dimension and provide a document that the material is in accordance with manufacturer's or supplier's certificate.

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

The geogrid shall be placed with the "roll length" parallel to the pavement. Fabric of insufficient width or length to fully cover the specified area shall be lapped a minimum of 24 inches. The geogrid should be secured in place.

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

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

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

Geogrid which is damaged during installation or subsequent placement of granular material, due to failure of the Contractor to comply with these provisions, shall be repaired or replaced at no additional cost to the Department, including costs of removal and replacement of the granular material. Torn geogrid may be patched in-place by cutting and placing a piece of the same geogrid over the tear. The dimensions of the patch shall be at least 2 feet larger than the largest dimension of the tear and it shall be weighted or otherwise secured to prevent the granular material from causing lap separation.

**Method of Measurement.** GEOTECHNICAL REINFORCEMENT will be measured in square yards for the installed surface area below the proposed pavement, barrier base, curb and gutter, or shoulder, plus as needed along the sides of the excavation. No measurement of overlapping material will be made. If more than one layer is placed due to design considerations, only one layer will be measured for payment. All excavation and placements and compaction of the AGGREGATE SUBGRADE IMPROVEMENT shall be measured and paid for separately.

**Basis of Payment.** The work will be paid for at the contract unit price per SQUARE YARD for GEOTECHNICAL REINFORCEMENT.

### **GFCI RECEPTACLE AND RECEPTACLE IN USE COVERS**

**Description:** This work shall include placing a GFCI receptacle and decorative receptacle covers at specified locations on the project documents. This work shall be coordinated with electrical utility improvements as defined in the engineering project documents and paid for separately.

**General Requirements:** The decorative covers shall be UL Listed enclosures with clear, weatherproof-in-use covers. Covers shall have built-in stabilizers that provide rigid support and require no assembly. The posts shall be angled at the base of the unit to allow direct access to underground wires. Colorant shall be integral throughout the post. Color shall be black. Enclosure shall be 19.5” tall with a clear, durable, weatherproof-in-use cover, GFCI and duplex wall plate. Product shall be fabricated from durable UV-rated plastic. The enclosure shall meet 2011 NEC extra-duty code requirements. The receptacle shall meet the requirements for 20 amps.

**Method of Measurement:** Furnishing and placing receptacle and the receptacle in use covers will be measured per each unit installed.

**Basis of Payment:** Furnishing and placing receptacle and receptacle in use covers, which price shall include the cost of furnishing and installing shall be per EACH for RECEPTACLE IN USE COVERS and GFCI RECEPTACLES, 20AMP 125VOLT.

## **HOT-MIX ASPHALT DRIVEWAY PAVEMENT**

**Description.** This item of work shall comply with the applicable portions of Sections 406 and 440 of the Standard Specifications except as follows:

This work shall occur at locations shown on the plans and as specified by the ENGINEER and shall consist of paving with three inches (3") or four inches (4") of HMA Surface Course, Mix "D", N50 on a prepared aggregate base. The surface shall be installed in two lifts with each lift not less than 1.5".

This item shall occur within ten (10) days of the stripping of the concrete curb or sidewalk forms.

Where the asphalt driveway is an overlay of a concrete driveway, the concrete driveway shall be removed in its entirety.

Saw cutting is the only permitted method for cutting butt joints in existing or new pavement. All butt joints shall be cut vertically, straight, and shall be free of debris. Jack hammering of butt joints is not permitted.

Where new driveway will be wider than existing driveway, CONTRACTOR shall excavate existing topsoil to provide 4" of compacted CA-6 prior to placing Driveway Pavement. Payment for this work shall be included in the unit price for this pay item.

This item of work shall comply with the applicable portions of Sections 406 and 440 of the Standard Specifications except as follows:

The bituminous driveway pavement, of the specified thickness, shall be N50, Mix "D", meeting the requirements in Section 406 of the Standard Specifications. The surface shall be installed in two lifts with each lift not less than 1.5".

**Method of Measurement and Basis of Payment.** This work will be paid for at the contract unit price per SQUARE YARD for HOT-MIX ASPHALT DRIVEWAY PAVEMENT, of the thickness specified, which price shall be payment in full for constructing this item as specified herein, including any additional excavation and all saw cutting, as well as all labor, material, and equipment necessary to complete this work as specified herein. The payment area shall be the final installed width of only the driveway area where work was performed.

Driveway removal and aggregate base courses shall be measured separately for payment as DRIVEWAY PAVEMENT REMOVAL and AGGREGATE BASE COURSE of the type and thickness specified.

## **HOT-MIX ASPHALT FOR PATCHING POTHOLES (HOT MIX)**

**Description.** This item shall include all materials, labor, and equipment necessary to patch potholes or other unforeseen pavement repairs or trenches with hot mix asphalt as directed by the Engineer and shall consist of the preparation of the base, the application of bituminous priming material and the construction of the hot-mix asphalt (HMA) base course for temporary patching of trenches for roadways open to traffic during overnight hours.

The potholes shall be cleaned of debris before any asphalt can be placed in them. The patching of potholes shall be constructed in accordance with applicable portions of Sections 355 and 406 of the Standard Specifications and details in the plans except as here in specified.

A nominal quantity has been included in the plans to be used as directed by the Engineer.

**Basis of Payment.** This work will be paid for at the contract unit price per TON for HOT-MIX ASPHALT FOR PATCHING POTHOLES (HOT MIX), which price shall include payment in full for all materials, labor and equipment necessary to perform the work as here in specified.

Removal of the existing pavement for Hot-Mix Asphalt for Patching Potholes (Hot Mix) will be measured separately for payment as PAVEMENT REMOVAL.

## **INFORMATION KIOSK**

**Description:** This work shall include refurbishing the existing sign kiosk as shown in the project documents.

**General Requirements:** The existing sign kiosk and associated structure shall be refurbished by an experienced contractor who has completed refurbishment of similar sign kiosks.

- 1.01 Submittals
  - B. Shop Drawings
    - 1. Provide a shop drawing for the exterior grade decal
  - C. Samples:
    - 2. Upon approval of shop drawing, provide (1) full size sample for review and approval. If approved, the sample may become part of the work.
- 1.02 Quality Assurance
  - A. Manufacturer Qualifications:
    - 1. Manufacturing of site furnishings for a minimum of 20 years
    - 2. Manufactured in North America.
  - B. Product Support:

1. Products are supported with CAD drawings.
2. Warranty documentation is provided.

1.03 Delivery, Storage and Handling

- A. Deliver materials to site in manufacturer's original packaging, with order information and shipping documents.
- B. Store products in manufacturer's original packaging in a clean, dry environment until ready to be installed.
- C. Handle products in accordance with manufacturer's instructions.

1.04 Warranty

- A. Provide manufacturer's standard warranty.
  1. Products will be free from defects in components, standard finishes or workmanship for a period of five (5) years from date of manufacture.

**Part 2 Products**

2.01 Manufacturer

Parvin Clauss Sign Company  
Brian Newton  
[BNewton@ParvinClauss.com](mailto:BNewton@ParvinClauss.com)  
<http://www.parvinclauss.com/>  
(630) 510-2020 x3018  
165 Tubeway Drive  
Carol Stream, IL

2.03 Materials

- A. Paint: Exterior grade black painted finish
- B. Exterior Grade Decal: Permanent decal as depicted on the plans.  
Permanent decal shall be designed for permanent commercial and industrial use. The decal shall be UV-Rated and Weather resistant.

**Part 3 Execution**

3.01 Examination

- A. Do not begin installation until all surfaces are cleaned.

3.02 Cleaning

- A. Metal Components
  1. Should dirt from the environment build-up on this surface, wipe with a soft cloth and mild detergent.

2. Abrasive cleaners, brushes and steel wool should be avoided.
3. If the finish is marred by a sharp object and the steel is exposed take a fine abrasive material to the area to improve the adhesion of the primer and touch-up paint. A quality grade exterior metal primer and top coat of matching color enamel should then be applied over the prepared surface.

B. Granite Components

1. Existing granite components shall be cleaned with a soft cloth and mild detergent.

C. Glass Components

1. Existing glass sign cabinet faces shall be cleaned with a mild glass cleaner.

3.03 Installation

- A. Paint aluminum cabinet surfaces with exterior grade paint.
- B. Contractor shall ensure that functional mechanisms, such as the existing ventilation and locking mechanisms maintain their functions.
- C. Install exterior grade decal in accordance with manufacturer's installation guidelines. Contractor shall ensure that decal is straight and flat to the surface. Bubbling and warping will not be accepted.

3.04 Protection

- A. Protect installed kiosks until completion of project.

**Method of Measurement.** Refurbishing the information kiosk and all associated equipment and materials will be measured in place for each information kiosk.

**Basis of Payment.** Refurbishing the information kiosk will be paid for at the contract unit price per EACH for INFORMATION KIOSK.

**INTERIM COMPLETION DATES AND COMPLETION DATE PLUS WORKING DAYS**

Listed are the Interim Completion Dates for this project:

- Substantial completion of the water main, water main services (fully operational) and temporary pavement patching (2" HMA) work on Central Avenue between 10<sup>th</sup> Street and 7<sup>th</sup> Street by August 15, 2020 and prior to beginning of school for Central Elementary School.
- All water main and services shall be installed (fully operational) and trenches paved with temporary pavement patching (2" HMA) on Central Avenue between 7<sup>th</sup> Street and 4<sup>th</sup> Street by December 1, 2020 to allow full Central Avenue roadway access for the winter.

- Substantial completion of Stages 1 and 2 by December 1, 2020 to allow full Central Avenue roadway access for the winter. Substantial completion will consist of completing major work items which shall include, but not be limited to, sewers, Festoon Lighting conduit and cabling, sewer work, curb and gutter, aggregate base courses, HMA binder course (no surface), sidewalks, temporary pavement markings, signing, traffic signals and tree replacement in order to fully open Central Avenue to pedestrian and vehicular traffic from 11th Street and 10th Street and 7th Street and Sheridan Road.
- Substantial completion of Stages 3 and 4 by May 30, 2021 to allow full Wilmette Avenue access for the summer. Substantial completion will consist of completing major work items which shall include, but not be limited to, sewers, Festoon Lighting conduit and cabling, sewer work, curb and gutter, aggregate base courses, HMA binder course (no surface), sidewalks, temporary pavement markings, signing, traffic signals and tree replacement in order to fully open Wilmette Avenue between Green Bay Road and Lake Avenue.
- Substantial completion of remaining streetscape which shall include, but not limited to, Festoon Lighting, landscaping and plantings, benches, and wayfinding signs by June 30, 2021 to allow full downtown access for the summer.
- Substantial completion HMA surface course and backfilling behind curbs in preparation for sod placement shall be completed by August 15, 2021.

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 September 30, 2021 except as specified herein.

The Contractor will be allowed to complete all clean-up work and punch list items within 5 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 cleanup 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 the interim completion dates, completion date and the number of working days.

## **LIGHT POLE SPECIAL**

**Description:** This work shall consist of furnishing and installing festoon light poles, stainless steel cables and string lights. Festoon light poles shall be Sternberg Lighting Birmingham Style 14' aluminum light poles and foundations. Stainless steel cables shall be 3/16 in. x 125 Stainless steel wire rope, also identified as 7 x 19 wire rope. Wire rope is constructed of seven strands of nineteen wires. Rope is constructed of stainless steel and has a working load limit of 740 lbs. String lighting shall be Celestial Lighting Hydra STL Series, 120V Exterior LED Light String. Light strings shall include replaceable 120V medium-base LED lamps. Provide 1800K LED clear globes, spaced at 18" on center. Coordinate all foundation specifications, electrical wiring and controls with engineering specifications and documents. String lights shall be mounted with no drop, to stainless steel cable with black cable ties. Each festoon pole will include a duplex GFI receptacle with weatherproof in use cover. This work shall be coordinated with electrical utility improvements as defined in the engineering project documents and paid for separately.

**Wiring and Appurtenances:** The work shall include all wiring, receptacles, and connections within the pole and shall be per the detail for the "South Plaza String Lighting Handhole Wiring Diagram" shown in the plans.

**Submittals:** Provide shop drawings and product data for all specified products.

**Materials:** All materials shall be in accordance with the contract plan drawings and Sections 1065, 1066, 1067, and 1069 of the Standard Specifications.

**Construction Requirements:** All work shall be installed in accordance with Sections 821 and 830 of the Standard Specifications.

The Contractor shall be responsible for coordinating the proposed bolt circle diameter, anchor bolt size, and handhole orientation for the proposed light poles installed.

Work to be performed under this pay item is indicated in contract plan drawings and shall be in conformance with NEC, IDOT and local ordinances.

**Method of Measurement:** The work to install the Light Pole, Special will be measure per each.

**Basis of Payment:** This work shall be paid for at the contract unit price per EACH for LIGHT POLE, SPECIAL which price shall include the pole, wiring, receptacle, and for all materials, labor and equipment necessary to perform the work as here in specified.

Concrete foundation for the Light Pole, Special shall be measured separately for payment as CONCRETE FOUNDATION, TYPE A.

## **MULCH PLACEMENT FOR EXISTING WOODY PLANTS**

**Description:** This work shall consist of furnishing, transporting, and spreading an approved shredded hardwood bark mulch to the depth specified to be placed around existing trees, shrubs and planting areas in areas as shown in the plans or as directed by the Engineer. This work shall be done in accordance with the applicable portion of Section 253.02 (c) and Section 1081.06 (b) of the Standard Specifications for Road and Bridge Construction.

**Material:** Hardwood bark mulch shall be clean, finely shredded mixed-hardwood bark meeting the following requirements:

- Material shall be free of sticks, leaves, stones, dirt clods, and other debris.
- Individual wood chips shall not exceed 2 inches (50 mm) in the largest dimension.

A mulch sample and request for material inspection must be supplied to the Engineer for approval prior to performing any work 72 hours prior to application.

**Method:** The grade, depth, and condition of the area must be approved by the Engineer prior to placement.

The Contractor shall remove all weeds, litter and plant debris before mulching. Pre-emergent herbicide, if specified, shall be applied prior to the placement of shredded mulch. The Contractor shall prepare a neatly spaded edge between the landscaped bed and/or tree ring and the turf. The Contractor shall repair the grade by raking and adding topsoil as needed, before mulching.

The shredded mulch shall be placed according at the required depth as specified in the plans for planting trees, shrubs, vines and perennial plants. Care shall be taken not to bury leaves, stems, or vines under mulch material. Mulch shall not be in contact with the base of the trunk.

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.

**Method of Measurement:** Mulch placement will be measured in place to the depth specified in square yards. Areas not meeting the depth specified shall not be measured for payment.

**Basis of Payment:** This work will be paid for at the contract unit price per SQUARE YARD for MULCH PLACEMENT, of the thickness specified. Payment shall include all costs for materials, equipment and labor required to complete the work specified herein, including the cost of removing and disposing of any debris. Any mulch placement included as part of the work in other work items will not be measured separately for payment.

## **PAINTING LIGHT POLE UNIT**

**Description:** This work shall consist of providing touch up paint for existing light poles to remain. This work shall be coordinated with electrical utility improvements as defined in the engineering project documents and paid for separately.

**Submittals:** Provide product data for all specified products.

**Construction Requirements:** Clean surfaces of all light pole areas to receive touch up paint. Provide exterior grade black paint to match existing light poles. Add touch up paint to existing light pole areas as needed to achieve a uniform color appearance.

**Method of Measurement:** The work shall be measured per each unit for PAINTING LIGHT POLE UNIT.

**Basis of Payment:** This work shall be paid for at the contract unit price per EACH for PAINTING LIGHT POLE UNIT and no additional compensation will be allowed.

## **PERENNIAL PLANT CARE**

**Description:** This work shall consist of weeding, replenishing mulch, trimming and other perennial plant care work items for each work cycle as described herein and as directed by the Engineer. The work required for each work cycle shall be scheduled to be complete and acceptable at the time of inspection.

**Inspection Date:** Perennial plant care will be inspected on the date specified in the plans. The work required for each work cycle must be 100 percent complete on the inspection date. Partial inspections will not be made.

### **Work Cycle Requirements:**

- Perennial plant beds must be 100 percent weed-free and clear of litter and debris to be acceptable. Control weeds in landscaped areas by pulling the entire plant and roots. Disturbed areas shall be raked level and mulch adjusted.
- Dead flowers, stems, and leaves must be trimmed and removed.
- Monitor mulch depths to maintain a two-inch (50 mm) depth around perennial plants (no more, no less). Rake mulch any away from perennial crowns.
- Finely shredded hardwood bark mulch must be replenished to maintain a two-inch (50 mm) depth around perennial plants, if necessary. Hardwood mulch shall not exceed two (2) inches in its largest dimension, free of foreign matter, sticks, stones and clods. (Mulch must be approved by the Engineer prior to placement).

- Remove litter and other debris. All drain inlets must be kept clean and draining freely. All walls, pavement, curb and gutters, and concrete pads are to be left clean and swept free of all debris.
- Plants must be free of insect infestations and sprayed if necessary.
- Beds must have a neatly spaded edge between the mulched bed and the turf.
- Mulch must be raked out of turf surrounding the mulched bed.
- All debris that results from this operation must be removed from the right-of-way and disposed of in accordance with Article 202.03 at the end of each day.
- Trim dead tips of vines and ground covers.
- In the spring (March/April), cut back ornamental grasses to six (6) inches in height. Cut down any perennial left up over the winter to a height of six (6) inches or less and remove any dead leaves around the crowns of the plants. Rake beds free of accumulated debris, dead leaves, and other material, leaving mulch in place and being careful not to damage emerging bulb foliage and flowers. Rake back any mulch that covers plant crowns.
- Fall clean-up (October 15 – November 15; depending upon weather conditions and condition of plant material), cut back perennials leaving 3 to 4 inches height foliage as soon as foliage has died back or at discretion of the Engineer. Do not cut into plant crowns. Do not cut back any perennial with winter interest (ornamental grasses, Echinacea/Rudbeckia seed heads).

**Method of Measurement:** The work will be measured for payment of surface area cared for to the satisfaction of the Engineer on the inspection date specified in the plans. The area will be computed in square yards. Measurement for payment of this work will be performed on the inspection date specified in the plans.

If the inspection discloses any work as being unsatisfactory, the Engineer will give the Contractor the necessary instructions for correction of same, and the Contractor shall immediately comply with such instructions and correct the unsatisfactory work on the inspection date. Work that is not acceptable on the inspection date will not be measured for payment. Individual perennial plant areas within a perennial plant bed will not be measured for payment if any portion of the perennial plant bed has not been cared for to the satisfaction of the Engineer. Each perennial plant care work cycle specified in the plans will be measure separately for payment.

**Basis of Payment:** This work will be paid for at the contract unit price per SQUARE YARDS for PERENNIAL PLANT CARE, which price shall include all materials, equipment, labor, removal, disposal and incidentals required to complete the work as specified herein and to the satisfaction of the Engineer.

## **PLANTER CURB**

**Description:** This work shall consist of constructing raised concrete planter curbs with or without reinforcement, constructed on a prepared subgrade, in accordance with Section 606 of the Standard Specifications except as specified herein, as shown on the plans (identified as “Raised Planter Curb”), or as directed by the Engineer. Work shall include all excavation, base material, formwork, reinforcement, finishing, and cleanup necessary for construction of raised concrete curbs. Earth excavation and placing base material shall be in accordance with Sections 202, 301, and 351 of the Standard Specifications respectively.

### **Submittal:**

#### A. Mockups

1. Provide a mockup of one 10’ section of raised planter curb included in a 10’x10’ section of the REMOVE AND REINSTALL BRICK PAVER mockup. The recommended mockup area is to be determined by the Engineer. The purpose of this mockup will be to review the entire assembly prior to installation of the remaining streetscape areas. All components listed will need to be installed for Engineer review and approval. If approved, this mockup may become part of the final installation.

**Materials:** Materials provided for concrete curbs shall be in accordance with Section 606 and 1020 of the Standard Specifications. Use class SI Portland Cement Concrete unless otherwise directed by the Engineer.

**Construction:** This work shall be performed in accordance with Section 606 of the Standard Specifications except as modified herein. Layout all concrete curbs and obtain approval from the Engineer prior to construction. Construct concrete curbs to dimensions as shown on the plans, including chamfered edges and finish treatments at all exposed faces.

**Method of Measurement:** The work shall be measured in lineal feet of Planter Curb installed.

**Basis of Payment:** This work shall be paid for at the contract unit price per linear FOOT for PLANTER CURB and no additional compensation will be allowed.

### **PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, SPECIAL**

**Description.** This item of work shall comply with the applicable portions of Section 424 of the Standard Specifications except as follows: the sidewalk shall be poured with high early strength concrete pavement meeting applicable portions of Section 1020 of the Standard Specifications. The sidewalk special is to be used in front of the business doors for the downtown area and are shown in the plans.

**Method of Measurement and Basis of Payment.** This work will be paid for at the contract unit price per SQUARE FOOT for PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, SPECIAL, which price shall be payment in full for constructing this item as specified herein, including any additional excavation and all saw cutting, as well as all labor, material, and equipment necessary to complete this work as specified herein.

### **RECONSTRUCT SANITARY SEWER MANHOLE BENCH**

**Description:** This item is for reconstruction beyond the standard rehabilitation provided under the cementitious wall coating.

This work item shall consist of the complete removal and reconstruction of the entire manhole bench and trough. The existing deteriorated bench and trough area shall be completely removed to a minimum depth of 12 inches below the existing invert. Care must be taken to avoid damaging other areas of the manhole structure. Loose and broken concrete shall be routinely removed from the manhole to eliminate the possibility of pieces entering the sewer lines. After removal of loose and broken concrete, CA-7, (¾-inch - 1-inch) washed limestone with no fines shall be installed to a depth of (8) eight inches as a base for the new bench and trough to be formed using Portland Cement Concrete, (PCC). Sanitary sewer service shall be maintained during bench and trough replacement. Minimum bench and trough thickness shall be 4 inches in depth.

All inverts shall be formed to the diameter of the incoming and outgoing pipe diameter up to the pipe centerline and vertical beyond that point. The invert shall be formed to a depth of one-half to two-thirds the pipe diameter. Inverts shall be formed with a PCC mortar material and steel-trowel to produce a dense, smooth finish and shape to form a "U"- shaped channel connecting the pipelines. The new invert shall provide smooth transitions for pipes of different sizes, different elevations, and/or at different angles. The CONTRACTOR shall form benches to provide self-cleaning by sloping normally two (2) inches from manhole wall to edge of "U" channel with a smooth finish. The trough shall be troweled so that the wetted surface is smooth. The invert of the trough shall form a continuous conduit with the sewer pipe entering and leaving the manhole provided that the pipe was originally constructed or intended to be constructed in this manner. Care shall be taken to prevent the degradation of freshly poured benches and troughs.

The bench and trough shall be furnished in such a manner so that a watertight seal exists between the manhole walls, pipe, and bench/trough area. The finished bench and trough shall be cleaned of silt, debris or foreign matter of any kind.

**Method of Measurement and Basis of Payment.** This work shall be measured and paid for at the contract unit price per EACH for RECONSTRUCT BENCH, and shall include furnishing all labor, supervision, materials, equipment, and testing necessary to complete the work including removal of the existing defective bench and trough, and installation and sealing of the replacement bench and trough.

### **REMOVE AND REINSTALL BRICK PAVER**

**Description.** This work shall consist of the removal and reinstallation of brick pavers, slate, flagstone or other similar materials. This work includes clay brick paver removal, storage, base preparation, reinstallation of salvaged brick pavers, bedding material, finishing, and installing the brick paver or other materials in kind for carriage walks, sidewalks in the downtown and Veterans Park, and all other appurtenances as shown in the plan details and at the locations shown on the plans.

**General:** The paving contractor shall provide evidence that his firm has specific experience meeting the following criteria:

1. Experience installing pavers using IDOT CA-6 and sand bedding bed method with a minimum of 20,000 square feet per year for the past five (5) years.
2. The same experienced supervisory personnel will be made available for this project. The brick paving contractor shall submit a list of complete projects setting forth description, area, location and references with addresses and phone numbers.

### **Submittals:**

Clay Brick Pavers:

1. No samples required. Salvage and reuse existing pavers.

Joint and Setting Bed Sand:

1. Provide three representative one pound samples in containers of Joint Sand materials.
2. Provide three representative one pound samples in containers of Setting Bed Sand materials.
3. Test results from an independent testing laboratory for sieve analysis per ASTM C 136 conforming to the grading requirements of ASTM C 144.

Base and Subbase Aggregate:

1. After removing and storing existing pavers, contractor shall investigate the depth and quality of subbase. Contractor shall provide this information in writing.
2. If additional base material is required, contractor shall provide test results from an independent testing laboratory for sieve analysis per ASTM C 136.

**Installation:** Brick pavers shall be carefully removed, palletized and stored in a location to be coordinated with the Resident Engineer. Pavers shall not be stored within the driplines of existing trees to remain.

The quality, condition and depth of the existing base course shall be evaluated and confirmed with the Resident Engineer. If required, the base course may require additional material and compaction. The base shall be prepared to meet the grades and tolerances identified on the plans.

**Paver Mockup:** Contractor shall prepare a mockup for review by the Resident Engineer. The mockup shall include a 10' x 10' area that demonstrates the specified paver banding and paver field. If approved, the mockup may become an article of the work.

**Bedding:** The bedding component shall follow what is shown on the plans and details. For BRICK PAVER installation, the bedding shall conform with Section 351 of the Standard Specifications for Aggregate Base Course, the bedding shall be clean, hard sand with durable particles and free from adherent coating, lumps of clay, alkali salts, and organic material. Sand shall be uniformly graded from coarse to fine and shall meet test ASTM C33.

**Jointing:** The jointing component shall meet test ASTM C33. Contractor shall sweep larger particles away from joints until the joints are completely full. Finer sand which doesn't meet test ASTM C33 shall not be used to fill joints.

Pavers shall be installed as shown on the details shown in the plans and per best practices for brick paver installation. No paver setting work shall be performed when the underlayment has free moisture, ice or snow or when the underlayment is frozen.

To reduce dust during paver installation, pavers shall only be cut using wet saws. No dry cutting is permitted. Cut pavers shall be placed in areas shown on the details in the plans. "L" shaped pavers shall be avoided where possible. Pavers shall be cut radially when joints between pavers on curves exceed 1/8 inch. Radial cut pavers shall be created by trimming both sides of pavers. Paver edgings shall be installed per manufacturer's recommendations.

Setting bed shall be protected from damage prior to setting pavers. Setting shall be done by competent workers under adequate supervision, and in accordance with manufacturer's recommendations and best practices for brick paver installation. Pavers with chips, cracks, or other structural or aesthetic defects or those rejected by the Engineer shall not be used. Pavers shall be set true to the required lines and grades in the pattern detailed on the Plans. Pavers shall be tightly butted. Joints between pavers shall be uniform and per manufacturer's recommendations. There shall be no raised edges, either pavers or materials adjacent to pavers, that could allow someone to trip. The tolerance for such edges shall be 0" - 1/16" maximum in range.

After a sufficient area of pavers has been installed, the pavers shall be compacted by running a mechanical vibratory compactor over the paved surface until the pavers are uniformly leveled, true to grade, and totally immobilized. Where required, pavers shall be accurately cut with a masonry or concrete saw. Cut edges shall be plumb and straight. Scoring and breaking shall not be acceptable. Joints between pavers shall be filled by sweeping sharp sand into the joints. When joints are filled, paver surfaces shall be swept clean of sand. Paver edgings shall be installed per manufacturer's recommendations.

After completion of the unit pavers, paver installation areas shall be thoroughly swept clean and surface shall be left unsoiled. Where required by the Engineer, surface shall be cleaned with water or an approved cleaner.

**Method of Measurement:** The contract unit price for REMOVE AND REINSTALL BRICK PAVER shall include all removal, storage, base preparation, installation of unit pavers, bedding sand and jointing sand required to complete this work.

**Basis of Payment:** This work shall be paid for at the contract unit price per SQUARE FOOT for REMOVE AND REINSTALL BRICK PAVERS.

## **REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES**

**Description.** This work shall consist of the removal and disposal of regulated substances according to Section 669 of the Standard Specifications as revised below.

**Contract Specific Sites.** The excavated soil and groundwater within the areas listed below shall be managed as either "uncontaminated soil", hazardous waste, special waste or non-special waste. For stationing, the lateral distance is measured from centerline and the farthest distance is the offset distance or construction limit, whichever is less.

### **Site #: Central Avenue**

- Station 115+55 to Station 117+35 from 40 feet LT to 40 feet RT. This material meets the criteria of Article 669.05(a)(5) and shall be managed in accordance to Article 669.05. Potential contaminants of concern sampling parameters: VOCs, SVOCs, and Metals.

**Work Zones**

Three distinct OSHA HAZWOPER work zones (exclusion, decontamination, and support) shall apply to projects adjacent to or within sites with documented leaking underground storage tank (LUST) incidents, or sites under management in accordance with the requirements of the Site Remediation Program (SRP), Resource Conservation and Recovery Act (RCRA), or Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or as deemed necessary. For this project, the work zones apply for the following ISGS PESA Sites: None.

Additional information on the above sites are available from the Village of Wilmette.

**REQUIRED INSPECTION OF WOODY PLANT MATERIAL**

**Delete Article 1081.01(a)(5) and substitute the following:**

The place of growth for all material, and subsequent inspection, must be located within 200 miles of the project.

**Delete Article 1081.01(c)(1) and substitute the following:**

Inspection of plant material will be made at the nursery by the Engineer, or a duly authorized representative of the Department; all plant material must be in the ground of the nursery supplying the material.

The Contractor shall submit plant inspection forms and allow a minimum of 30 calendar days advance notice of the plant material to be inspected. Written certification by the Nursery will be required certifying that the plants are true to their species and/or cultivar specified in the plans.

The Department reserves the right to place identification seals on any or all plants selected. No trees shall be delivered without IDOT seal. Plant material not installed within 60 days of initial inspection will be required to be re-inspected.

## **SANITARY MANHOLE, 5' DIA**

**Description.** This item of work shall consist of supplying and installing sanitary sewer manholes in accordance with the applicable portions of Section 602 of the Standard Specification and the detail shown in the plans, except as herein modified.

### **Materials.**

All sanitary sewer manholes shall be precast concrete manholes in accordance with Section 602 of the Standard Specifications.

Sanitary sewer manholes shall have an Adaptor Inc. Internal/External Adaptor Seal Adjustment Skirt unless shallow depth prohibits, then an internal Cretex Seal will be required. New manholes shall meet the District's Standard Manhole requirements."

The contractor shall provide necessary lengths of sanitary sewer pipe to connect the manhole to the existing sewer pipe. The pipe shall be Polyvinyl Chloride (PVC SOR 26 Pressure Pipe). All pipe shall meet or exceed the performance requirements of ASTM D-2241, and shall have push-on rubber gasket joints that shall meet or exceed the performance requirements of ASTM D-3139.

The new sewer pipe shall be connected to the existing pipe with flexible couplings capable of connecting dissimilar pipe materials and as approved by the Engineer.

External Chimney Seal. Shall conform to ASTM C923 and shall be Cretex Classic.

Adjustment Rings. Shall be precast concrete. Adjustment rings of uniform thickness shall be at least two inches thick shall not exceed 3 total rings and 8-inch in height.

Bitumastic Gasket Material shall meet or exceed Federal Specification SS-S-210A. Material shall be EZ-STIK.

Cover Insert (Inflow Dish). Shall be Cretex Inflow Dish or Rainstopper, made of HDPE conforming to ASTM D-1248, installed per manufacturer's recommendations.

The sanitary sewer manhole shall be provided with rubber gasket couplings for all pipes to ensure a watertight seal between the pipe and manhole. The rubber gasket couplings shall conform to ASTM specification C-923. The manhole shall meet the requirements of the Village of Wilmette sanitary manhole details shown on the plans. The manhole shall include the frame and lid, rubber gasket couplings, chimney seal, and steps.

All lids for sanitary sewer shall be IDOT Type 1 (Standard 604001) frame and lids and have the word "SANITARY" cast into them.

**Method of Measurement and Basis of Payment.** Sanitary manhole shall be paid for at the contract unit price EACH for SANITARY, MANHOLE, 5' DIA of which price shall include all materials including frame and lid, steps, adjusting rings, chimney seals, sealer gaskets, flexible rubber boot, inflow dish, final adjustment, sanitary sewer pipe, omission pipe coupling, and all labor and equipment and other appurtenant items to complete this item as specified and detail on the plans.

Granular backfill compacted within five (5) feet and around the sanitary sewer manhole will not be measured separately for payment but shall be considered INCLUDED in the cost of the Sanitary Manhole and installation.

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

**Description.** This item of work shall also consist of the plating of the structure and then adjustment to final grade after final binder is paved and repair of the Village of Wilmette's combination sewer manholes in accordance with Section 602 of the Standard Specification and the applicable portions of the Village Detail No. 13 for Sanitary Manhole shown in the plans.

The manhole rims shall be adjusted to meet the proposed elevations. The manholes shall be thoroughly cleaned and all cracks and joints shall be sealed with mortar approved by the Engineer. Two rows of extrudible preformed mastic gasket shall be installed under the manhole frame.

The Contractor shall provide a new frame and closed lid with the word "SANITARY" cast into them, and all frames and lids shall be IDOT Type 1 Frame and Lid (Standard 604001).

**Method of Measurement and Basis of Payment.** The CONTRACTOR shall provide the necessary tools and equipment to complete all work as described above. This work shall be paid at the contract unit price per EACH for SANITARY MANHOLES TO BE ADJUSTED, which price shall include, adjusting rings, frame, external chimney seal (if required), and all labor, materials, and equipment required to complete this work.

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

**Description.** This item of work shall also consist of the plating of the structure and then reconstructing the manhole to the final grade after final binder is paved and repair of the Village of Wilmette's combination sewer manholes in accordance with Section 602 of the Standard Specification and the applicable portions of the Village Detail No. 13 for Sanitary Manhole shown in the plans.

The manhole rims shall be plated and then reconstructed to meet the proposed elevations after final binder is paved. The manholes shall be thoroughly cleaned and all cracks and joints shall be sealed with mortar approved by the Engineer. Two rows of extrudible preformed mastic gasket (7/8" x 1 3/4" Ez-Stik) shall be installed under the manhole frame and adjusting rings.

The contract shall remove the existing concrete top and frame and lid and shall provide new precast concrete barrel sections, cones or flat tops as necessary to meet the proposed elevation.

The Contractor shall provide a new frame and closed lid with the word "SANITARY" cast into them, and all frames and lids shall be IDOT Type 1 Frame and Lid (Standard 604001).

**Method of Measurement and Basis of Payment.** The CONTRACTOR shall provide the necessary tools and equipment to complete all work as described above. This work shall be paid at the contract unit price per EACH for SANITARY MANHOLES TO BE RECONSTRUCTED, which price shall include, concrete manholes sections and or flat tops, adjusting rings, frame and lid, steps, external chimney seal, and all labor, materials, and equipment required to complete this work.

### **SANITARY MANHOLES TO BE REMOVED**

**Description.** This work shall consist of removing the existing manholes at locations shown on the plans. This work shall be done in accordance with Section 605 of the Standard Specifications.

**Method of Measurement and Basis of Payment.** This work shall be measured for payment per EACH sanitary structure removed and shall be paid for at the contract unit price per EACH for SANITARY MANHOLES TO BE REMOVED, which price shall include all labor, materials, and equipment required to complete this work.

## **SANITARY SEWER SERVICE 6"**

**General:** This work shall consist of the furnishing of all labor and materials required for the construction of the type and size of sewer services specified, and construction as specified and in accordance with applicable provisions of the "Standard Specifications For Water And Sewer Main Construction In Illinois", and conforming in all respects to the lines and grades as shown on the Plans or furnished by the Engineer.

**Materials:** All sanitary sewer services shall be Polyvinyl Chloride (PVC SOR 26 Pressure Pipe). All pipe shall meet or exceed the performance requirements of ASTM D-2241, and shall have push-on rubber gasket joints that shall meet or exceed the performance requirements of ASTM D-3139.

Bedding, haunching and initial backfill materials shall consist of Coarse Aggregate CA-11 or CA-13, meeting the "Standard Specifications for Road and Bridge Construction", as prepared by the State of Illinois, Department of Transportation.

**Installation:** All pipe constructed in trench shall be laid on granular bedding having a thickness of six inches (6") of compacted granular materials to uniformly support the barrel of the pipe. After the pipe materials have been laid to the grades specified, the pipe shall be backfilled to a point **twelve inches (12")** above the top of the pipe with similar-type granular materials, and these will be compacted and spaded around the pipe to firmly support the barrel and prevent deformation due to backfill loads. These granular materials will not be measured and paid for separately, but shall be merged in the unit price bid per foot for the sewer services constructed in trench.

Trench backfill will be paid for the balance of the depth of the trench, less any pavement thicknesses.

Pipes of dissimilar materials shall be connected together with flexible couplings, as approved by the MWRDGC, for which no additional compensation will be allowed.

Sanitary sewer services shall be laid at a minimum grade of 1.00%.

**Basis of Payment:** This work will be paid for at the Contract unit price per FOOT for SANITARY SEWER SERVICE 6" which price shall be payment in full for all work as specified. Trench backfill will be paid for separately.

## **SIDEWALK REMOVAL**

**Description.** This item of work shall comply with the applicable portions of Sections 440 of the Standard Specifications except as follows: sidewalk removal shall include brick paver sidewalk removal in the downtown section of the project. The Contractor shall coordinate with the Village of Wilmette through the Engineer to see if they would like to salvage the brick pavers. If not, the Contractor may keep or take off-site to an approved site.

## **SPRINKLER SYSTEM REPAIR**

**Description.** This work shall consist of repairing lawn sprinkler systems damaged by construction operations to the full extent. The CONTRACTOR shall remove and properly dispose of damaged system materials and furnish and install sprinkler system replacement lines, fittings, and heads of the same or better quality as approved by the ENGINEER.

Sprinkler system repairs shall be made by an experienced CONTRACTOR specializing in lawn sprinkler system installation, maintenance, and repair. The CONTRACTOR shall coordinate all repairs with the ENGINEER and the Village to obtain the contact information for the individual sprinkler system owners. All of the proposed improvements are within the existing right-of-way, and there are no temporary construction easements. Repairs are expected to be within the existing right-of-way; however, the CONTRACTOR shall coordinate with the sprinkler system owner to obtain access for flushing and testing the system. Under no circumstances shall the Village or ENGINEER take responsibility for scheduling repairs. Payment will not be made for the system repairs until the ENGINEER has accepted the work.

**Method of Measurement and Basis of Payment.** This work will be paid for at the contract unit price per EACH for SPRINKLER SYSTEM HEAD and at the contract unit price per FOOT for SPRINKLER SYSTEM LINE.

**This work will only be paid for when the damaged materials are within 1-foot of a proposed improvement.** Damages that occur outside of 1-foot from proposed improvements shall be replaced by the CONTRACTOR at his/her own expense.

Payment shall include all types and sizes of sprinkler system materials. Fittings and all other components necessary to make system repairs to the full extent will not be paid for separately, but shall be considered INCLUDED in the contract unit prices for SPINKLER SYSTEM HEAD and SPRINKLER SYSTEM LINE, including all labor, material, and equipment necessary to complete this work as specified herein.

Nominal quantities for each item have been included in the plans and to be used as directed or approved by the Engineer.

## **STEEL CASING 20"**

**Description.** The work of this Pay Item consists of installing a steel casing pipe around the proposed 8" or 10" water main to protect the proposed water main underneath the existing storm/sanitary sewers by open cut method; sawcutting, and removal and disposal of existing pavements; removal and disposal of waste excavated materials; protection, repair or replacement of utilities; installation of casing; installation of pipe within casing; sandfilling of void between casing and carrier pipes; end seals; testing;.

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

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

**Basis of Payment.** The work will be paid for at the contract unit price per FOOT for STEEL CASINGS 20".

## **STREETSCAPE CONSTRUCTION PREQUALIFICATION**

**Qualifications.** At the time of the preconstruction conference, the Contractor shall provide the following documentation.

**References.** A list containing at least three projects completed within the previous eight years prior to this project's bid date, which the Contractor(s) performing this work have successfully completed. The projects shall include work within active commercial areas, quality concrete, decorative lighting, wayfinding signage, site furnishings and landscape plantings. The list of projects shall contain names and phone numbers of owner's representatives who can verify the Contractor's participation on those projects.

## **STRUCTURAL SOIL**

**Scope Of Work.** This Work shall consist of furnishing and placing Engineered Soil to meet finish grade elevations as specified on the plans or herein and be performed in accordance with Section 310 of the Standard Specifications and US Patent #5,849,069 for 'CU-Structural Soil <sup>TM</sup>' (see material specification), except as herein modified.

Structural soil is designed to function as a sub-base material under sidewalk and pavement, as well as a growing media outside the tree pits. Contractor shall coordinate placement of structural soil with tree protection, sidewalk construction and utility placements. Coordinate with engineering drawings.

**Submittals.** Shall include the following

A. Material Testing Reports certifying the materials comply with the following

1. Clay Loam

- a. Clay Loam shall be a “clay loam” based on the “USDA classification system” as determined by mechanical analysis (ASTM D-422) and it shall be of uniform composition, without admixture of subsoil.
- b. Mechanical Analysis for a Loam / Clay Loam shall be as follows

<u>Textural Class</u>	<u>% of total weight</u>
Gravel	less than 5%
Sand	20 - 45%
Silt	20 - 50%
Clay	20 - 40%

c. Chemical Analysis

- 1. pH between 7.0 and 7.5
- 2. Percent organic matter 2 -5% by dry weight.
- 3. Nutrient levels as required by the testing laboratory recommendations for the type of plants to be grown in the soil.
- 4. Toxic elements and compounds below the United States Environmental Protection Agency Standards for Exceptional Quality sludge or local standard; whichever is more stringent.
- 5. Soluble salt less than 1.0 Milliohm per cm.
- 6. ation Exchange Capacity (CEC) greater than 10
- 7. Carbon/Nitrogen Ratio less than 33:1.

d. Clay Loam shall be the product of a commercial processing facility specializing in production of stripped natural topsoil.

## 2. Crushed Stone

a. Crushed Stone shall be a DOT certified crushed stone. A non-limestone aggregate will be preferred. The maximum allowable aggregate able to pass the ½ inch sieve is 10 percent. A ratio of nominal maximum to nominal minimum particle size of 2.

b. Acceptable aggregate dimensions will not exceed 2.5:1.0 for any two dimensions chosen. Minimum 90 percent with one fractured face, minimum 75 percent with two or more fractured faces.

c. Results of Aggregate Soundness Loss test shall not exceed 18 percent.

d. Losses from LA Abrasion tests shall not exceed 40%.

## 3. Hyrogel

a. Hyrogel shall be a potassium propenoate-propenamamide copolymer Hydrogel as manufactured by Gelscape by Amereq Corporation. (800) 832-8788.

## 4. Water

a. The Contractor shall be responsible to furnish his own supply of water to the site at no extra cost. All work injured or damaged due to the lack of water, or the use of too much water, shall be the Contractor's responsibility to correct. Water shall be free from impurities injurious to vegetation.

5. Final Mix Criteria

a. A uniformly blended mixture of Crushed Stone, Clay Loam and Hydrogel, mixed to the following proportion:

MATERIAL	UNITS OF WEIGHT (either metric or English)
Crushed Stone weight	100 units or 80-84% of total weight
Loam (dry)	Approx. 20 units or 15-16% of total weight
Hydrogel	0.03 units or 12 oz./ cubic yard
Total moisture	8.5 -11.0 % of total weight (AASHTO T-99 optimum moisture)

b. Submit certification that CBR test results meet acceptance (CBR # 50).

c. Submit certification that Proctor test standard is met (> or equal to 95%.)

**Type And Quality.**

A. For purposes of designating type and quality of the product specified, drawings and specifications are based on the products of the following manufacturers:

1. Material provided shall be ‘CU-Structural Soil <sup>TM</sup>’, US Patent #5,849,069. The material shall be produced and obtained from the exclusively licensed vendor, Amereq, Inc. (800) 832-8788, or from a sub-licensed vendor such as Midwest Trading in St. Charles, IL, (847) 742-1840.

**Installation.**

A. Locate and confirm the location of all underground utility lines and structures prior to the start of any excavation. Repair any underground

utilities or foundations damaged by the Contractor during progress of work incidental to contract.

- B. Complete all walls, curb footings and utility work in the work area prior to installing Structural Soil.
- C. Verify that sub-base is adequately graded and compacted prior to placement. Sub-grade elevations shall slope parallel to the finished grade and or toward the subsurface drain lines as shown on the drawings.
- D. Excavate and compact the proposed sub-grade to depths, slopes and widths as shown on the contract plans. Confirm that the sub-grade is at the proper elevation and compacted as required.
- E. Clear the excavation of all construction debris, trash, rubble and any foreign material. In the event that fuels, oils, concrete washout, silts or other material harmful to plants have been spilled into the sub-grade material, excavate the soil sufficiently to remove the harmful material. Fill any over excavation with approved fill and compact to the required sub- grade compaction.
- F. Stockpiling of material on site will not be permitted, unless otherwise directed by the Commissioner.
- G. Protect adjacent walls, walks and utilities from damage or staining by the soil. Use 1/2" plywood and or plastic sheeting as directed to cover existing concrete, metal and masonry work and other items as directed during the progress of the work. Any damage to adjacent facilities incurred during the installation of structural soil shall be repaired incidental to this item.
- H. Install CU Soil in 6 inch lifts to the depth indicated on the contract plans and compact each lift as specified here.
- I. Compact all materials to peak dry density from a standard AASHTO compaction curve (AASHTO T 99) not less than 95% Proctor density. No compaction shall occur when moisture content exceeds maximum as listed herein. Delay compaction 24 hours if moisture content exceeds maximum allow-able and protect CU Soil during delays in compaction with plastic or plywood.
- J. Bring Structural Soils to finished grades as shown on the contract plans.

Immediately protect the Structural Soil from contamination by toxic materials, trash, debris, water containing cement, clay, silt or materials that will alter the particle size distribution of the mix with plastic or plywood.

- K. Clean up work area at the end of each working day. Do not track soil from the site onto adjacent property and the public right of way.
- L. Upon completion of the of this work, remove all excess fills, soils and mix stockpiles and legally dispose of all waste materials, trash and debris. Remove all tools and equipment and provide a clean, clear site. SWEEP,

DO NOT WASH SURFACES OF DIRT AND MUD UNTIL  
SIDEWALK HAS BEEN INSTALLED OVER THE ENGINEERED  
SOIL.

**Method of Measurement.** Furnishing and installing STRUCTURAL SOIL and all associated materials will be measured in place per CUBIC YARD for 36" DEPTH OF STRUCTURAL SOIL.

**Basis of Payment.** This item shall be paid for at the contract unit price per CUBIC YARD for STRUCTURAL SOIL which price shall include labor, materials, equipment and incidentals necessary to complete the work.

### **SUPPLEMENTAL WATERING**

**Description:** This work shall consist of supplemental watering during periods of intense heat or subnormal rain fall, when requested, after the initial and seven (7) additional waterings included in the sodding item have been performed.

**General Requirements:** Supplemental watering shall be performed only when directed by the Resident Engineer. Water shall be applied at the rate specified by the Engineer within 24 hours of notice. Supplemental watering may be performed during the period of establishment or any time prior to final acceptance of the project.

Water furnished for application shall be free from oil, acid, alkali, salts or other impurities harmful to the best development of the sod.

Watering shall be done with a spray application. An open-end hose will not be acceptable. The method of watering shall meet the approval of the Resident Engineer.

**Method Of Measurement:** Supplemental watering will be measured for payment in units of 1,000 gallons of water applied on the sodded and planting areas.

**Basis Of Payment:** Supplemental watering will be paid for at the contract unit price per unit for SUPPLEMENTAL WATERING.

### **TEMPORARY PATCHING**

**Description.** This work shall include the construction and removal of temporary pavement and necessary aggregate for the water main trench throughout the project as directed by the ENGINEER.

Temporary patching shall consist of 2 1/4 inches of Hot-Mix Asphalt Binder Course, IL-9.5, N50, and any necessary aggregate, constructed and compacted in accordance with Section 406 of the Standard Specifications. The temporary pavement shall be constructed at the same cross slope as the existing adjacent pavement. The temporary pavement may be placed and compacted in one lift.

**Measurement and Payment.** This work will be paid for at the contract unit price per SQUARE YARD for TEMPORARY PATCHING, which price shall be payment in full for labor, equipment, and material for the work as specified herein, which includes both the construction and removal of the temporary patching.

### **TEMPORARY SIDEWALK**

**Description.** Where a known pedestrian generator, such as a school, neighborhood shopping center, downtown business district, church, or a known handicapped facility such as a nursing home exists, the ENGINEER may direct the CONTRACTOR to provide temporary sidewalk for overnight or weekend access.

Temporary Sidewalk shall be a minimum of 3 feet in width. Wider sidewalks may be needed where high pedestrian or handicapped movement exists. If the Temporary Sidewalk is to remain in place for more than four (4) weeks, it shall be constructed with a minimum of 2 inches of Portland Cement Concrete or Hot-Mix Asphalt at the CONTRACTOR's option. Otherwise, the CONTRACTOR has the following options:

1. 2 inches of Portland Cement Concrete
2. 2 inches of Hot-Mix Asphalt

3. 3 inches minimum compacted aggregate (CA-6 gradation or other similar locally available aggregate approved by the ENGINEER)

**Method of Measurement and Basis of Payment.** All labor, equipment, and material necessary to complete this work as specified herein shall be paid for at the contract unit price per SQUARE FOOT for TEMPORARY SIDEWALK. This price shall include all labor, material, and equipment necessary for constructing, maintaining, and removing the temporary sidewalk per the ENGINEER.

### **TEMPORARY SEDIMENT BASIN**

**Description.** This work shall consist of constructing a sump pit as determined in the field by the ENGINEER per the details shown in the plans.

**Method of Measurement and Basis of Payment.** The work will be paid for at the contract unit price per EACH for TEMPORARY SEDIMENT BASIN.

### **TOPSOIL PLACEMENT**

**Description:** This work shall include placing a variable depth layer of topsoil ranging from 1-inch to 4-inches in thickness, raking and preparing the topsoil for seeding in all areas indicated on the project documents.

Topsoil shall be placed 1-inch thick around the drip line of existing trees in the residential areas. All other areas shall have 4-inches of topsoil placed unless otherwise noted on the plans or as directed by the Engineer.

**General Requirements:** Topsoil shall be pulverized, natural, fertile, friable soil possessing characteristics of rich productive soil in the Chicago area. It shall be obtained from naturally well drained areas, not excessively acidic or alkaline and contain no toxic substances which may be harmful to plant and lawn growth. It shall be free from clay lumps, roots, stones and other debris. Topsoil shall not be handled in a frozen or muddy condition.

The Contractor shall inform the Resident Engineer in writing, 10 days in advance of the delivery of topsoil to the job site, as to the location from which the topsoil is to be obtained, the crops or plants which have been grown in the soil during the past 5 years and the depth to which the top soil is to be taken. A minimum of three (3) samples of the topsoil proposed for this work shall be furnished a minimum of 10 days before delivery of topsoil to the jobsite. Each sample submitted shall be in a separate container, approximately one quart in

size, appropriately labeled and taken from a different location at the source. Each container shall be completely filled with uncompacted topsoil.

Existing sidewalks, curbs, structures, trees and other plant materials that are to remain in place shall be protected from damage. Any damage caused by the Contractor shall be replaced at the Contractor's expense.

Excavation and grading around tree roots and plant materials shall be done by hand.

Additional material required to bring the area to subgrade elevation will not be paid for separately but considered incidental to TOPSOIL PLACEMENT. Additional material must meet the approval of the Engineer.

The surface of the topsoil shall be free from clods, stones, sticks and debris and shall conform to the lines, grades and the minimum thickness shown on the plans. One rolling of the entire surface shall be made.

All material "tracked" down the street shall be removed each day. All sidewalks, driveways, alleys and pavements shall be left in a broom cleaned condition.

A schedule of specified topsoil depths follows below:

DEPTH	PAY ITEM	APPLICATION
1" - 4"	TOPSOIL	SEED RESTORATION AREAS

**Method of Measurement:** Furnishing and placing topsoil will be measured in place and the area computed in cubic yards. No measurement will be made of existing material removed.

**Basis of Payment:** Furnishing and placing topsoil will be paid for at the contract unit price per CUBIC YARD for TOPSOIL PLACEMENT, which price shall include the cost of removal and disposal of existing material, furnishing and placing topsoil, raking, rolling, disking or tilling if required.

## **TRASH RECEPTACLES AND RECYCLING RECEPTACLES**

**Description:** This work shall include the installation of trash and recycling receptacles as shown in the project documents.

### **1.1 Section Includes**

- A. Trash and recycling receptacles.

### **1.2 References**

- A. ASTM Testing Standards:

1. ASTM B 117 – Standard Practice for Operating Salt Spray (Fog) Apparatus.
2. ASTM D 522 – Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings.
3. ASTM D 523 – Standard Test Method for Specular Gloss.
4. ASTM D 2247 – Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
5. ASTM D 2794 – Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
6. ASTM D 3359 – Standard Test Methods for Measuring Adhesion by Tape Test.
7. ASTM D 3363 – Standard Test Method for Film Hardness by Pencil Test.
8. ASTM G 155 – Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.

- B. ISO Testing Standards:

1. ISO 1520 – Paints and Varnishes – Cupping Test.
2. ISO 2815 – Paints and Varnishes – Buchholz Indentation Test.

### **1.3 Submittals**

- A. Product Data: Submit manufacturer’s product data, storage and handling requirements and recommendations, installation methods and available colors, styles, patterns and textures.
- B. Shop Drawings: Submit manufacturer’s shop drawings, including plans and elevations, indicating overall dimensions.
- C. Samples: Submit manufacturer’s samples of materials, finishes, and colors.
- D. Warranty: Manufacturer’s standard warranty.

#### 1.4 **Quality Assurance**

- A. **Manufacturer's Qualifications**: Manufacturer regularly engaged in manufacture of site furnishings since 1969.
- B. **Product Support**: Products are supported with complete engineering drawings and design patents.
- C. **Base Worth**: An installed base of products worth in excess of one hundred million dollars.
- D. **Assets**: Excess of twenty million dollars in assets.
- E. **Production**: Orders are filled within a 40-day schedule.
- F. **Facility Operator**: Welders and machine operators are certified.

#### 1.5 **Delivery, Storage, and Handling**

- A. **Delivery**: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. **Storage**: Store materials in clean, dry area in accordance with manufacturer's instructions. Keep materials in manufacturer's original, unopened containers and packaging until installation.
- C. **Handling**: Protect materials and finish during handling and installation to prevent damage.

#### 1.6 **Warranty**

- A. **Warranty Information**:  
-Products will be free from defects in material and/or workmanship for a period of three years.

## **PART 2 PRODUCTS**

#### 2.1 **Manufacturer**

- A.  
Manufacturer: Landscape Forms  
7800 E Michigan Ave, Kalamazoo, MI 49048  
www.landscapeforms.com  
800-430-6206 x 1334  
Contact: Jennifer Woods  
Email: [jenniferw@landscapeforms.com](mailto:jenniferw@landscapeforms.com)

**2.2 Trash And Litter Receptors**

- A. “Generation 50” Litter Receptacle
- B. Style:
  - 1. Side opening unit
- C. Mounting:
  - 1. Freestanding/surface mount: Non-corrosive anchoring hardware not included.

**2.4 Material**

- A. Lid: Aluminum sheet. Welded to 3/16” thick aluminum brackets with plastic bumpers. Hinged on one side.
- B. Side panel: Constructed of 3/4” x 2” solid stock boards. Boards have eased edges. Secured to frame with Magni-coated screws.
  - 1. Exterior: wood material to be determined upon samples review.
  - 2. Interior: wood material to be determined upon samples review.
- C. Front panel: formed carbon steel sheet color to be determined upon samples review.
- D. Inner frame: formed carbon steel sheet color to be determined upon samples review.
- E. Liner: Rotationally molded linear low density polyethylene. Color is black.
- F. Base: Rotationally molded linear low density polyethylene. Color is black. Base is filled with concrete for stability.

**2.5 Recycled Content**

	<b>Post-Consumer Content</b>	<b>Pre-Consumer Content</b>
Top or Side opening litter	24%	41%

Unit is 100% recyclable.

**2.6 Fabrication**

- A. Shop assembled litter receptacles.

**2.7 Finishes**

- A. Finish on metal: Landscape Forms, Inc. “Pangard II”.
  - 1. Primer: Rust inhibitor.
  - 2. Topcoat: Thermosetting polyester powdercoat. UV, chip, and flake resistant.
  - 3. Test Results: “Pangard II”.
    - a. Gloss, Garner 60 Degrees, ASTM D 523: Plus or minus 5.

- b. UV Resistance, Color and Gloss, ASTM G 155, Cycle 7: Delta E less than 2 at 2.0 mils and less than 20 percent loss.
  - c. Cross-Hatch Adhesion, ASTM D 3359, Method B: 100 percent pass.
  - d. Flexibility Test, Mandrel, ASTM D 522: 3 mm at 2 mils.
  - e. Erichsen Cupping, ISO 1520: 8 mm.
  - f. Impression Hardness, Buchholz, ISO 2815: 95.
  - g. Impact Test, ASTM D 2794: 60 inches/pound at 2.5 mils.
  - h. Pencil Hardness, ASTM D 3363: 2H minimum.
  - i. Corrosion Resistance, 1,500-Hour Test, ASTM B 117: Max undercutting 1 mm.
  - j. Humidity Resistance, 1,500-Hour Test, ASTM D 2247: Max blisters 1 mm.
4. Color: To be determined upon samples review.
- B. Finish on Wood:
- 1. Wood for Exterior Use: Unfinished.

### **PART 3 EXECUTION**

#### **3.1 Examination**

- A. Examine areas to receive litter receptacles.
- B. Notify Engineer of conditions that would adversely affect installation or subsequent use.
- C. Do not begin installation until unacceptable conditions are corrected.

#### **3.2 Installation**

- A. Install litter receptacles in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Install litter receptacles level and plumb.
- C. Anchor litter receptacles securely in place, if required.

#### **3.3 Adjusting**

- A. Finish Damage: Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Engineer.
- B. Component Damage: Remove and replace damaged components that cannot be successfully repaired as determined by Engineer.

#### **3.4 Cleaning**

- A. Clean litter receptacles promptly after installation in accordance with manufacturer's instructions.
- B. Do not use harsh cleaning materials or methods that could damage finish.

**3.5 Protection**

- A. Protect installed litter receptacles to ensure that, except for normal weathering, receptacles will be without damage or deterioration at time of Substantial Completion.

A schedule of trash and recycling receptacle types follows below:

QUANTITY	PAY ITEM
14	TRASH RECEPTACLES
14	RECYCLING RECEPTACLES

**Method of Measurement:** Furnishing and installing TRASH RECEPTACLES and RECYCLING RECEPTACLES and all associated equipment and materials will be measured in place for each trash and recycling receptacle.

**Basis of Payment:** Furnishing and installing trash and recycling receptacles will be paid for at the contract unit price per EACH for TRASH RECEPTACLE and RECYCLING RECEPTACLE.

**TREE ROOT PRUNING**

**Scope of Work:** All trees shall be protected and cared for during the construction in accordance with the applicable Articles of Section 201 of the Illinois Department of Transportation, Standard Specifications and this Special Provision, with the following revisions. If construction is to occur within the root zone of existing plant material, root pruning will be required where directed by the Engineer and/or Village Forester, and shall be done so in the presence of the Village Engineer or Forester or qualified Arborist (hired by the Contractor), prior to digging. The root zone shall be considered as the area around a plant or tree extending at least as far from the base as the longest horizontal branches. All costs for root pruning and costs for the Arborists shall be paid for by the Contractor and shall be included in the cost of the contract. No additional compensation will be allowed for root pruning or Arborist's fees.

Every effort should be made by the Contractor when working near trees and shrubs to preserve same from harm. No trees or shrubs shall be removed unless authorized in the field by the Engineer. The Contractor shall provide the Engineer notification ten (10) working days prior to the removal of any tree or shrub. The Contractor shall be responsible for damage to or loss of any tree or shrub not specifically designated to be removed.

**Construction Requirements:** This work consists of root pruning using a trenching wheel or wheel saw matching the following criteria. The root pruner wheel shall be 60-inches diameter (188-inch circumference) carrying 28 pair (56 total) stump cutter teeth with tooth spacing at 6.7-inches on center and shall utilize a 65hp tractor. All root-pruning cuts shall be immediately backfilled with material side cast from the earth-sawing procedure, so that the ground surface is even and no tripping potential exists. All root pruning work is to be performed through the services of a certified arborist to be approved by the Engineer. The tree root pruning will occur prior to excavating around the tree and where indicated on the drawings or as directed by the ENGINEER or the Village Forester; and in such a manner as to preserve the natural growth habit of each tree complete including an equivalent amount of the top vegetative growth of the plant material within one week following root damage, the application of fertilizer nutrients, and supplemental watering. Root pruning depth to be 18” minimum and per the ENGINEER. Root pruning will be required wherever the ground is disturbed within the drip line of the tree and shall be completed both parallel and perpendicular to the roadway for locations where any water main service and concrete work (no greater than 6-inches away from existing concrete) is being completed.

The Contractor shall take special care not to disturb any trees within the construction area. Construction procedures and equipment use shall be such that a minimum of root disturbance is achieved.

To prevent damage to public trees and prevent contamination of bituminous materials, the Contractor, when so directed by the Engineer, shall cut any limbs overhanging the street which may interfere with construction operations in accordance with the requirements of Section 201 of the “Standard Specifications for Road and Bridge Construction”, latest edition, insofar as they apply. Work shall be done in accordance with ANSI A300 Pruning Standards, Part (1) (2017).

Damage to trees limbs shall be held to a minimum. Shrubs and trees limbs shall be tied back wherever necessary to prevent their loss or damage. Wherever damage by construction equipment to limbs and branches are unavoidable, they should be pruned before starting work in accordance with Articles 201.06 of the Standard Specifications. Work shall be done in accordance with ANSI A300 Pruning Standards, Part (1) (2017).

Small trees (less than 4 inches in diameter) and shrubs not indicated for removal which are removed or severely damaged during construction shall be replaced in kind and size by the Contractor at no additional cost to the Village, Engineer, or Resident. All planting shall be done in accordance with Section 1081 of the Standard Specifications and ANSI A300, Planting and Transplanting Part (6) (2012).

The protection and care of trees and shrubs as herein specified will be included in the cost of the tree root pruning.

In addition, this work shall also consist of the professional TREE ROOT PRUNING, as shown on the plans or as directed by the Engineer or Forester, in preparation for storm sewer installation, as shown on the plans and as directed by the Engineer. This work shall be performed in accordance with Section 201 of the “Standard Specifications for Road and Bridge Construction”, latest edition. All root pruning shall be completed prior to the commencing storm sewer construction.

**Method of Measurement and Basis of Payment.** The work will be paid for at the contract unit price per EACH for TREE ROOT PRUNING, which price shall include all equipment, labor, multiple mobilizations (maximum of 4) of varying quantities as required by the Engineer, and material as specified herein to complete this work.

Tree protection shall be measured separately for payment as Tree Trunk Protection or Temporary Fence as called out in the plans.

## **TREES, SHRUBS, PERENNIALS, TOPSOIL MIX**

### **Description.**

This work shall consist of furnishing, transporting, and planting woody plants such as trees, shrubs and perennials plantings. The work shall also include the preparation of subsoil, placing of topsoil, planting, mulching, fertilizing, and maintenance. Refer to Soils, Structural for structural soil specifications related to this work. This work shall be completed as detailed in the plans.

### **General Requirements.**

Trees, plants and groundcover shall be installed by an experienced installer who has completed installation of trees, plants and groundcover. Reference information regarding trees and shrubs can be obtained from ANSI Pruning Standards, A300 Part 1 (2017) and from the publication: ANSI Z60.1 - Nursery Stock (2016).

### **Submittals.**

Submit certificates of inspection as required by governmental authorities and submit manufacturer’s certified analysis for soil amendments and fertilizer materials. Submit other data substantiating that materials comply with specified requirements. Submit planting schedule showing scheduled dates for each type of planting in each are of the site. Submit typewritten instructions recommending procedures to be established for the annual maintenance of landscape work. Submit at the beginning of the maintenance period. Resident Engineer shall receive copies of all instructions when issued.

**Definitions.**

Weeds: Include Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

**Quality Assurance.**

**Conformance with Laws:** Comply with any State or Federal laws including regarding inspection of plant materials for plant diseases and insect infestation and use of agricultural chemicals. Any required inspection certificates shall accompany each shipment and on arrival, be filed with the Resident Engineer. Each shall be the Contractor's responsibility to conform to all federal, state, and local rules and regulations governing the transportation of plant materials. The Department of Agriculture, Division of Plant Industries may have such information.

**Installer Qualifications:** The landscape construction described herein shall be performed by a single pre-approved Contractor specializing in the installation and maintenance of ornamental landscape plantings and large caliper (over 6" caliper) tree installation with a minimum of five (5) years' experience on comparable projects with installation of landscape plantings of trees, shrubs, and groundcovers contained on or adjacent to major urban streets or roadways. Submit Contractor's list of past experience on comparable projects within the past five- (5) years and names and qualifications of key personnel at time of bid. Contractor shall have a current spray applicator's license and use a licensed applicator for all spraying operations. Submit at time of bid.

**Nursery Qualification:** Nursery must be a company specializing in growing and cultivating of plants with five (5) years' experience. Nursery must follow ANSI Z60.1 (2014). Tree Pruning standards are to conform with the ISA ANSI A300 Standards (2017) and Pruning Standards for Planting and Transplanting, ANSI A300 (Part 6).

**Standard and Industry Specifications:** Any materials or operations specified by reference to the published specifications of a manufacturer, supplier, American Society of Testing Materials.

**Regulatory Requirements.**

Comply with regulatory agencies for fertilizer composition.

## **Materials**

### **Delivery Storage and Handling:**

**Packaged Materials:** Deliver packaged materials in manufacturer's containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery, and while stored at the site.

**Plant Materials:** Provide freshly dug trees and shrubs. Do not use trees or shrubs which have been in cold storage or heeled-in. Provide balled and burlapped plants. Dig plants designated (B&B) in plant list with firm, natural balls of earth of sufficient diameter and depth (as shown in Plant Schedule) to encompass the fibrous and absorbing system necessary for full recovery of plant. Firmly wrap balls with burlap or similar material and bind with twine, cord, or wire mesh. Where necessary to prevent breaking or cracking of ball during process of planting, secure ball to a platform. During shipment, protect plants with tarpaulin or other suitable covering against excessive drying from sun and wind. Cover balls of (B&B) plants that cannot be planted immediately upon delivery with moist soil or mulch or other protection from drying. Water plants as necessary until planted. If planting is delayed more than six hours set plants in shaded area. Protect plant foliage of trees and shrubs with anti-desiccant prior to transportation.

**Environmental Requirements:** Do not install plant life when ambient temperatures may drop below 35 degrees Fahrenheit or rise above 90 degrees Fahrenheit. Do not install plant life when wind velocity exceeds 30 mph.

### **Job Conditions:**

**Site Observation:** Installer must examine the subgrade, including rubble conditions, verify the elevations, observe the conditions under which work is to be performed, and notify the Resident Engineer of unsatisfactory conditions. Proceeding with the work constitutes acceptance of existing or corrected conditions.

**Utilities:** Determine locations of underground utilities and perform work in a manner that will avoid damage. Hand excavate, as required, to minimize possibility of damage to underground utilities. Protect grade stakes set by others until all parties concerned mutually agree upon removal.

**Scheduling:** Proceed with and complete the landscape work as rapidly as portions of the site become available, working within the seasonal limitations for each kind of landscape work required.

**Excavation During Planting:** When conditions detrimental to the plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify the Resident Engineer before planting.

**Planting Time:** Plant or install materials during normal planting seasons for each type of landscape work required. Correlate planting with specified maintenance periods. Planting season for trees and shrubs is from August 15 to October 15 (Fall) and March 15 to May 31 (Spring). Planting season for perennials and groundcover is during spring or early summer. On the full responsibility of the Contractor, planting operations may be conducted under unseasonable conditions without additional compensation.

The specimen holiday evergreen tree shall be installed in April 2021.

**Existing Trees:** Notify the Resident Engineer immediately if the existing tree roots are encountered in the process of executing the work of this contract. Do not proceed with any work in the area of the disrupted roots until the Village Forester has been notified.

#### **Trees, Plants, and Groundcover.**

Refer to the Plant List on Plans, for specific types and quantities of plants to be furnished.

**Source:** Plants shall be nursery grown, not field collected, in accordance with good horticultural practices, root pruned within the last two years. Sources of all plant materials shall be within a 200-mile radius of the site, or if not available, from locations approved by the Engineer.

**Plant Hardiness:** All plants provided by the contractor shall be grown under climate conditions similar to those in the locality of the project for at least two years. Plants are to be from sources which are located in Hardiness Zones 5a or 4b, as interpreted by the Engineer from the United States Department of Agriculture, USDA Plant Hardiness Zone Map Miscellaneous Publication Number 1475.

**Quality:** All plants shall be true to genus, species, and variety and have a normal habit of growth. They shall be sound, healthy, and vigorous, well branched and densely foliated when in leaf, be free of disease, insect pests, eggs, or larvae, and have healthy well-developed root systems. They shall be free from physical damage or adverse conditions that would prevent thriving with the specified result. Plants shall be of specimen quality. Undergrown, overgrown or root bound plants are not acceptable quality. All plants shall show evidence of satisfactory growth prior to Final Acceptance.

**Trees:** All trees shall be in a healthy vigorous condition, free of dead or broken branches, scars that are not completely healed, frost cracks, disfiguring knots, broken or abraded bark, redundant leader or branches (no double leaders), rubbing branches or aberrations of any kind. All trees shall have full even and well developed branching with single primary leader. Trees shall be

dense foliated when in leaf, all trees shall be balled and burlapped (B&B) and shall be dug with a firm rootball of natural earth of a size in proportion to the plant size, measured by caliper, height and spread. Spaded trees shall not be acceptable.

**Shrubs:** Full plants with many branches after planting and free of objectionable disfigurements. All shrubs shall be Balled and Burlaped (B&B), except those that are labeled to be from containers on the Plans. Bare root plants are not acceptable.

**Container Plants:** Thoroughly rooted within the container but not root-bound.

**Perennials:** Vegetatively propagated to ensure the genus, species, and variety specified.

**Size:** Conform to the measurements specified in the Plant List or on the plans measured before pruning when their branches are in their normal positions. Height and spread dimensions specified refer to the main body of the plant and not from root tips to top. A cane is considered a primary stem that starts from close to the ground or at a point not higher than one-fourth (1/4) the height. Plants that meet the measurements specified, but do not possess a normal balance between height and spread, are not acceptable quality.

**Substitutions:** Substitutions may be permitted, only if proof is submitted that any plant specified is not obtainable. Such proof shall be submitted in writing and shall contain the telephone logged time of call, nursery name and telephone number, with a minimum of one dozen nurseries called. Unavailability will be subject to verification by the Engineer. If not available, a proposal will be considered for use of nearest equivalent size of variety with an equitable adjustment of contract price.

### **Soil Materials.**

Use of site topsoil as required to complete landscape work as shown on drawings. All topsoil proposed for use, whether from on-site or imported shall be tested for conformance to the specifications.

Topsoil shall be fertile, friable, natural loam, taken from a naturally well drained site where topsoil occurs in a depth of not less than 4 inches; do not obtain from bogs or marshes. Topsoil shall be suitable for vigorous plant growth and not frozen or muddy. Topsoil shall be free from subsoil, clay, brush, weeds, stones larger than one (1) inch in diameter, stalks, roots and other material that would be toxic or harmful to plant growth. Acidity range pH 6.0-7.0, not less than 3% humus as determined by loss on ignition of moisture free samples dried at 100 degrees Centigrade. The Resident Engineer reserves the right to reject topsoil in which more than 60% of material passing V.S.S. #100 sieve consists of clay as determined by the Bouyoucouous Hydrometer by dried weights of materials. Analysis for organic matter and clay made in accordance with current methods of the Association of Official Agricultural Chemists. Soil

testing should be tested by a 3<sup>rd</sup> party agency and submitted for review and approval by the Resident Engineer.

**Soil Amendment Materials.**

Commercial Fertilizer, peat, composts and other soil additives shall be used to counteract soil deficiencies as recommended by the soil test analysis.

**Peat for Soil Mix:** A natural residue of native type formed by decomposition of reed peat or sedge peat, by not peat moss, from a fresh water site, conditioned in storage piles after excavation for at least six months, including one freezing and one thawing period, and when delivered from storage piles shall contain between 35% and 65% moisture by weight, shall be free from lumps, sticks, stones, weedy roots, or other foreign matter. Organic matter shall be not less than 90% on a dry weight basis (samples dried at 110 degrees Centigrade). Ash on dry basis shall be not more than 20%, shall be low in content of woody material and iron.

**Lime:** Natural limestone containing not less than 85% of total carbonates, ground so that not less than 90% passes a 10-mesh sieve and not less than 50% passes a 100-mesh.

**Sand:** Clean, washed sand, free of toxic materials.

**Sulfur:** In a form generally accepted for landscape use, granular as specified by the Engineer, according to the soil test recommendations.

**Water:** Clean, fresh, and free of substances or matter, which could inhibit vigorous growth of plants.

**Planting Soil Mix.**

**Topsoil Mixture (5 parts) for the Tree, Shrub and Groundcover Planting:** Materials thoroughly mixed by hand or rotary mixer in the following proportions by volume: three (3) parts topsoil; one (1) part peat; one (1) part sand.

Topsoil Mixtures have a true pH value of 6.0 – 6.5. Contractor shall amend the topsoil mix as necessary, at his own expense, to bring the proper pH range, by mixing with limestone or sulfur as required by soil analysis.

Compacted Topsoil and Planting Mix thickness at the following areas:

**Shrub Beds:** (24") twenty-four inches.

**Perennial and Groundcover Beds:** (24") twenty-four inches.

**Tree Pits:** (6") six inches below tree ball and (24") twenty-four inches around tree ball circumference.

**Mulches.**

**Bark Mulch:** Clean finely shredded hardwood bark, not to exceed two (2) inches in its largest dimension, free of foreign matter, sticks, stones, and clods.

**Accessories.**

**Wrapping Materials:** Burlap of first quality at least 8 ounces in weight, not less than 6" nor more than 10" in width, or heavy crepe paper or such other material as may be approved.

**Tree Support Stakes:** Rough sawn hard wood free of knots, rot, cross grain, bark, long slivers, or other defects that impair strength. Minimum 2 inches square or 2 ½ inch diameter by 8 feet long, pointed at one end. Paint or stain wood stakes dark brown. The evergreen holiday tree requires tree supports as specified in the details.

**Guying wire:** 12 gauge galvanized steel.

**Hose Chafing Guards:** New or used 2 ply, ¾ inch diameter, reinforced rubber or plastic hose, black or dark green, all of same color.

**Flags:** White surveyor's plastic tape, 6 inches long, fastened to guying wires or cables.

**Driven Anchors:** May be used instead of guy stakes for trees with 3 to 6 inch caliper. Malleable iron, arrow shaped, galvanized.

**Turnbuckles:** Zinc coated with 6 ½" lengthwise opening and at each end 3/8" diameter threaded openings fitted with screw eyes.

**Anti-Desiccant:** Emulsion type, film-forming agent similar to Dowax by Dow Chemical Co., or Wilt-Pruf by Nursery Specialty Products, Inc., Croton Falls, New York, designed to permit transpiration but retard excessive loss of moisture from plants. Deliver in manufacturer's fully identified containers and mix and use in accordance with manufacturer's instructions.

**Source And Quality Control Tests.**

**Inspection of Plant Materials:** Trees and shrubs shall be tagged by the Village Forester.

**Testing of Topsoil:** Before preparation, topsoil is subject to acceptance. Submit written analysis and proceed only upon acceptance. Should tests show that the topsoil does not comply with specifications, treat the soil by the addition of soil to standards specified.

**Execution.**

Prior to planting, clear surfaces of trash, debris, and stones larger than 1-1/2" in diameter, and all roots, brush, wire, grade stakes and other objects which would interfere with planting and maintenance operations. Verify grades established during final soil preparation as true to finish contours shown and maintain such areas until the directive to begin planting. Level undulations or irregularities in the surface resulting from soil amendment operations prior to planting.

**Examination:** Examine the subgrade and conditions including elevations and extent of rubble under which landscape work items are to be installed. Advise Resident Engineer of problems. Do not proceed with the work until satisfactory conditions have been corrected. Verify that prepared subsoil and planters are ready to receive work. Saturate soil with water to test drainage.

**Preparation of Subsoil:** Eliminate uneven areas and low spots. Remove debris, roots, branches, and stones, in excess of 1/2 inch in size. Remove subsoil contaminated with petroleum products. Scarify subsoil to a depth of 3 inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted soil. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations and outline areas and secure Resident Engineer's acceptance before start of planting work. Make minor adjustments as may be requested.

**Excavation for Trees and Shrubs:** Excavate pits and beds with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage. Loosen hard subsoil in bottom of excavation. For balled and burlapped (B&B) trees, make excavations three times greater in diameter than the ball diameter and equal to the ball depth, plus an allowance for setting ball on a three (3) inch layer of compacted planting soil mixture. Pits for shrubs shall be at least one (1) foot greater in diameter than the ball and shall be a minimum of sixteen (16) inches deep. Contractor shall excavate additional depth, if necessary, to provide a minimum pit depth of six (6) inches deeper than the ball. Do not mix planting soil or use as backfill unless authorized to do so. Fill excavations for trees and shrubs with water and allow to percolate out before planting. If excavations indicate inadequate drainage, advise Resident Engineer immediately. Dig plant pits and have soil for planting ready before plants are delivered.

**Planting.**

**Excavation, Setting, and Planting:** Excavate soil mix for the installation of plantings. Being careful not to damage root balls, set trees and shrubs in centers of pits on layers of soil mix, plumb and straight and at such a level that, after settlement, the crown to the tree or shrub root balls shall be at finish grades. All backfill for plantings shall be done with specified soil mix. Brace plants rigidly in position until the planting soil has been tamped solidly around the ball and roots. Tamp thoroughly before installing remainders of the planting soil to the top of pits, eliminating all air pockets.

**Tree Planting:** Set trees centrally in pits so that all trunks are straight and plumb. Plant trees so that the root flare is visible and at grade or slightly above grade when installed.

**Balled and Burlapped Plants:** For balled and burlapped plants, loosen ropes and burlap wraps at the top of plant. Remove burlap from top of plant and dispose of.

**Container Plants:** Being careful not to damage root balls, set container grown stock as specified for balled and burlapped work. Remove containers from sites and legally dispose of off-site.

**Initial Watering:** Thoroughly water all plantings saturating the rootballs immediately after planting, the same day as planting. Consult with Engineer and Village Forester on watering methods.

**Relationship to Grade:** After planting and settlement, plants shall bear the same relationship to finish grade as they did in the nursery. Where soil mix exceeds 4" in depth between drainage course and bottom of root balls, install high enough to achieve this relationship after settlement.

**Mulching:** Mulch all plantings immediately after planting, as planting progresses, the same day as planted. Mulch all trees, shrubs and groundcover with a 3" layer of specified shredded hardwood mulch.

**Forming Basins:** Smooth planting areas to conform to specified grades after full settlement has occurred and mulch has been applied. Form a shallow saucer around shrubs, 3" deep capable of holding water about each plant by depressing soil slightly below finished grades. Raise basin rims above general finished grades on low sides of sloped areas by placing topsoil around the edge of each pit.

#### **Installation of Accessories.**

**Mulching:** Mulch all plantings immediately after planting, as planting progresses, the same day as planted. Mulch all trees, shrubs and perennials with a 3" layer of specified shredded hardwood bark mulch. When mulching groundcover beds, do not bury leafy stems under mulch material.

**Spray:** Spray to retard transpiration before digging of each tree, with anti-desiccant, using powder spray to apply an adequate film over trunks, branches, twigs, and foliage. If deciduous trees or shrubs are moved in full leaf, spray with anti-desiccant at nursery before moving and again 2 weeks after planting. Anti-desiccant shall be applied to all evergreen plants in late fall.

**Soil Separator:** Place soil separator fabric over gravel fill in tree pits before backfilling with topsoil mix or placing plants. Fabric shall not be installed near structural soil trench.

**Guying:** As identified in the project documents, support trees planted in lawn immediately after planting. All trees planted in lawn to be supported as described herein. Any other method preferred must first be approved by Village Forester. Use three guys equally spaced.

**Plant Support.**

Brace plants on sloped areas vertically with plant protector wrapped guy wires and stakes to the following:

<u>Tree Caliper</u>	<u>Tree Support Method</u>
1 inch (25 mm)	1 stake with one tie
1 - 2 inches (25 - 50 mm)	2 stakes with two ties
2 - 4 inches (50 - 100 mm)	3 guy wires [with eye bolts and turn buckles]
Over 4 inches (100 mm)	4 guy wires [with eye bolts and turn buckles]

**Tree Pruning and Repair.**

Upon completion of work under this contract, prune and repair injuries to all plants. Each plant shall be pruned in accordance with standard accepted practice and to preserve the natural character of the plant unless otherwise directed by the Village Forester. Never cut a leader. Make cuts flush, leaving no stubs. All dead wood or suckers and all broken or badly bruised branches shall be removed. Remove and replace excessively pruned or deformed stock resulting from improper planting.

**Field Quality Control.**

Plants will be rejected if a ball of earth surrounding roots has been disturbed or damaged prior to or during planting.

**Maintenance.**

Begin maintenance immediately after planting. Maintain trees and shrubs until final acceptance, but in no case less than one full year after planting. Neatly trim plants where necessary. Immediately remove clippings after trimming. Water to prevent soil from drying out. Control growth of weeds. Replace plants that die during the maintenance period at once, unless designated otherwise by Village Forester. Arrangement may be made for maintenance, or portions of maintenance plantings, to be performed by an approved subcontracted local maintenance company during the one-year maintenance period and until final acceptance.

**Clean Up And Protection.**

During landscape work, store materials and equipment where directed. Keep pavements clean and work area in an orderly condition. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

**Final Inspection and Acceptance.**

At the completion of all planting work, and before the beginning of the warranty period, the initial inspection shall be performed. The landscape work may be observed from acceptance in parts agreeable to the Resident Engineer, provided the work offered for observation is complete, including maintenance, and that the area comprises one complete entire area of substantial size. The Contractor shall request the Resident Engineer in writing for a formal inspection of the planting work. At the time of inspection, the Contractor shall have all planting areas under the contract free of weeds and neatly cultivated. If a number of plants are sickly or dead at the time of inspection or, if in the Resident Engineer’s opinion, workmanship is unacceptable, written notice will be given by the Resident Engineer to the Contractor in the form of a punch list, which itemizes necessary planting replacements and/or deficiencies to be fixed. The Contractor’s responsibility for maintenance of all the plants shall be extended until replacements are made or other deficiencies are corrected. All dead and unsatisfactory plants shall be removed promptly from the project. Replacements shall conform in all respects to the specifications for new plants and shall be placed in the same manner. If after the inspection the Resident Engineer is of the opinion that all work has been performed as per the Drawings and Specifications and that all the plant materials are in satisfactory growing condition, he/she will give the Contractor written notice of acceptance and commencement of the warranty period. Trees shall be approved by Village Forester.

**Final Clean Up.**

At the time of final inspection of work, and before final acceptance, clean any paved areas that are dirty or stained due to work of this section by sweeping or washing, and remove any stains. A schedule of specified topsoil mix depths follows below:

DEPTH	PAY ITEM	APPLICATION
24”	TOPSOIL MIX	IN GROUND PLANTER AREAS
36”	TOPSOIL MIX	TREE PLANTING AREAS
6”	TOPSOIL MIX	SOIL AMENDMENT AT VETERANS PARK PLANTING AREA

A schedule of specified mulch depths follows below:

DEPTH	PAY ITEM	APPLICATION
3”	MULCH	IN GROUND PLANTER AREAS

A project planting schedule follows below:

**PLANT LIST – WEST OF 11<sup>TH</sup> STREET**

QTY	SYM	BOTANICAL NAME, COMMON NAME	SIZE
<b>SHADE TREES</b>			
3	AMM	Acer miyabei ‘Morton’, State Street Miyabe Maple	2.5” cal.
2	TD	Taxodium distichum, Baldcypress	2.5” cal.
2	GBPS	Ginkgo biloba ‘Princeton Sentry’, Princeton Sentry Ginkgo	2.5” cal.
2	SRIS	Syringa reticulata ‘Ivory Silk’, Ivory Silk Japanese Tree Lilac.	2.5” cal.
<b>EVERGREEN TREES</b>			
1	AC	Abies concolor, White Fir <i>(specimen holiday tree)</i>	18’ ht.
<b>SHRUBS</b>			
17	DL	Diervilla lonicera, Dwarf Bush Honeysuckle	24” ht
15	CAB	Cornus alba ‘Bailhalo’, Ivory Halo Dogwood	24” ht
158	AUU	Arctostaphylos uva-ursi, Bearberry	24” spr.
<b>PERENNIALS</b>			
Quantity each plant (units)			
422 (4.22)	CV	Carex vulpinoidea, Fox Sedge	1 gal.
127 (1.27)	CP	Carex pensylvanica, Pennsylvania Sedge	1 gal.
136 (1.36)	SH	Sporobolus heterolepsis, Prairie Dropseed	1 gal.
27 (0.27)	GM	Geranium maculatum, Geranium	1 gal.
61 (0.61)	LS	Liatris spicata ‘Kobold’, Kobold Gayfeather	1 gal.
63 (0.63)	RH	Rudbeckia hirta, Black Eyed Susan	1 gal.
75 (0.75)	EP	Echinacea ‘Prairie Splendor’, Prairie Splendor Coneflower	1 gal.
73 (0.73)	AM	Symphotrichum ‘Woods Blue’, Wood’s Blue Aster	1 gal.
56 (0.56)	PD	Phlox divaricata, Woodland Phlox	1 gal.
22 (0.22)	MV	Mertensia virginica, Virginia Bluebells	1 gal.

PLANT LIST – EAST OF 11<sup>TH</sup> STREET

QTY	SYM	BOTANICAL NAME, COMMON NAME	SIZE
<b>SHRUBS</b>			
169	AUU	Arctostaphylos uva-ursi, Bearberry	24” spr.
<b>PERENNIALS</b>			
539	CV	Carex vulpinoidea, Fox Sedge	1 gal.
172	SH	Sporobolus heterolepsis, Prairie Dropseed	1 gal.
172	LS	Liatis spicata ‘Kobold’, Kobold Gayfeather	1 gal.
172	RH	Rudbeckia hirta, Black Eyed Susan	1 gal.

**Method of Measurement.**

TREE, TAXODIUM DISTICHUM (COMMON BALD CYPRESS), 2-1/2” CALIPER, BALLED AND BURLAPPED will be measured for payment per each.

TREE, SYRINGA RETICULATA IVORY SILK (IVORY SILK JAPANESE TREE LILAC), 2-1/2” CALIPER, BALLED AND BURLAPPED will be measured for payment per each.

TREE, ACER MIYABEI MORTON (STATE STREET MIYABE MAPLE), 2-1/2” CALIPER, BALLED AND BURLAPPED will be measured for payment per each.

TREE, GINKGO BILOBA PRINCETON SENTRY (PRINCETON SENTRY GINKGO), 2-1/2” CALIPER, BALLED AND BURLAPPED will be measured for payment per each.

TREES (SPECIAL) (Abies concolor, 18’ ht, balled and burlapped, Specimen holiday tree) will be measured for payment per each.

SHRUBS (SPECIAL) will be measured for payment per each.

PERENNIAL PLANTS, ORNAMENTAL TYPE, GALLON POT will be measured for payment per each unit (1 unit = 100 pots of plants).

TOPSOIL PLANTING MIXTURE will be measured for payment per cubic yard.

MULCH to be placed for new trees, shrubs and planting areas in accordance with this special provision and Section 253 of the Standard schedule will not be measured separately for payment but shall be considered INCLUDED in the unit cost of the tree, shrub or perennial plant being planted.

**Basis of Payment.**

The work for FURNISHING:

TREE, TAXODIUM DISTICHUM (COMMON BALD CYPRESS), 2-1/2" CALIPER, BALLED AND BURLAPPED; TREE, SYRINGA RETICULATA IVORY SILK (IVORY SILK JAPANESE TREE LILAC), 2-1/2" CALIPER, BALLED AND BURLAPPED; TREE, ACER MIYABEI MORTON (STATE STREET MIYABE MAPLE), 2-1/2" CALIPER, BALLED AND BURLAPPED; TREE, GINKGO BILOBA PRINCETON SENTRY (PRINCETON SENTRY GINKGO), 2-1/2" CALIPER, BALLED AND BURLAPPED; TREE (SPECIAL) (Abies concolor, 18' ht, balled and burlapped, Specimen holiday tree); and SHRUBS (SPECIAL); PERENNIAL PLANTS, ORNAMENTAL TYPE, GALLON POT will be measured for payment per UNIT. TOPSOIL PLANTING MIXTURE will be paid for per CUBIC YARD. These prices shall include all materials, equipment, labor and other incidentals necessary to complete this work.

**TRENCH BACKFILL, SPECIAL**

**Description.** This work shall consist of furnishing, transporting, and installing aggregate for use as backfilling material for all trenches made in the sub-grade of the proposed improvement, and all trenches outside of the sub-grade where the inner edge of the trench is closer than two feet to the edge of the proposed pavement, curb, or sidewalk. This work shall be done in accordance with Section 208 of the Standard Specifications, except as modified herein.

**Water Main:**

Material used for water main trench backfill shall be of CA-7 or CA-11 gradation from the bottom of the bedding material to one-foot *above* the proposed water main pipe; additional backfill material shall be CA-6 from one-foot *above* the proposed water main pipe to the bottom of the temporary patching. All trench backfill material shall meet the requirements of Article 1004.04 of the Standard Specifications, except crushed concrete and slag will not be allowed. The trench backfill shall be compacted in accordance with Method 1 described in Article 550.07 of the Standard Specifications. Method 2 (ponding) and Method 3 Oetting) will not be allowed.

**Storm Sewer:**

Material used for storm sewer trench backfill shall be of CA-7 or CA-11 gradation from the bottom of the bedding material to the springline of the proposed storm sewer pipe; additional backfill material shall be CA-6 from the springline of the proposed storm sewer pipe to the bottom of proposed aggregate subgrade 12". All trench backfill material shall meet the requirements of Article 1004.04 of the Standard Specifications, except crushed concrete and slag will not be allowed. The trench backfill shall be compacted in accordance with Method

1 described in Article 550.07 of the Standard Specifications. Method 2 (ponding) and Method 3 Oetting) will not be allowed.

All TRENCH BACKFILL, SPECIAL shall be paid for installation of aggregate to the pavement finished grade. This work shall also include the excavation and proper disposal of trench backfill material as needed to construct the proposed pavement.

**Method of Measurement and Basis of Payment.** This work shall be measured and paid for in accordance with Article 208.03 of the Standard Specifications at the contract unit price per CUBIC YARD for TRENCH BACKFILL, SPECIAL, which price shall include all labor, material, and equipment necessary to complete the work as specified herein, including all installation and any removal required to construct the proposed pavement.

### **USE OF FIRE HYDRANTS**

Add the following to Article 107.18 of the Standard Specifications:

The CONTRACTOR may use Village fire hydrants under the following conditions:

The CONTRACTOR must pick-up a Village issued water meter and RPZ device at the Village Yard located at 711 Laramie Avenue (847.853.7500). The Village has a limited number of meters and RPZ devices and if none are available the CONTRACTOR will be responsible for supplying its own meter and RPZ device certified in the past year. A refundable \$2,500 deposit (cash, check, Visa, MC) and a meter loan permit are required before a Village meter and RPZ device will be issued. The permits are obtained through the Village of Wilmette Engineering Department at 1200 Wilmette Ave. (847.853.7660).

### **VALVE BOXES 6”**

**Description.** This item of work shall consist of furnishing and installing a water valve box on a new 6” water valve at approximately Sta. 112+85, 15.4’ Rt on Central Avenue and as detailed on the plans or as directed by the Engineer.

Valve Box shall be set plumb and at the elevation of the proposed finished grade.

Valve boxes shall be adjustable screw type with a base sized to fit over the valve and yoke. The box lid shall be cast with “water” on the top. Valve boxes shall be constructed of cast iron. Valve boxes shall be the appropriate range of adjustment for the location of installation and the contractor should minimize the use of extensions. Valve boxes shall be provided with a valve box stabilizer.

**Method of Measurement and Basis of Payment.** This work will be paid for at the contract unit price EACH for VALVE BOXES 6” which price shall include all labor, equipment, and materials necessary to perform said work. The water valve at this location will be measured separately for payment as WATER VALVES for the size specified.

Valve boxes used for fire hydrant auxiliary valves are not part of this item.

### **VALVE VAULTS**

**Description.** This work shall conform to the requirements of Section 602 of the Standard Specifications and Village of Wilmette Standard Drawing 21. The valve vault shall include a 1” and 2” copper whip with the corporation stops on either side of the valve.

Valve Vaults shall be constructed of precast concrete sections conforming to the details shown in the plans. Frames and lids shall be IDOT Type 1 Frame, Closed Lid and the cover shall bear the marking “WATER”.

See attached Village of Wilmette details for Valve Vaults and Frames and Lids. The valve vaults shall also include 1” and 2” copper whip with the corporation stops on either side of the valve.

**Basis of Payment.** This work shall be measured and paid for at the contract unit price per EACH for VALVE VAULTS TYPE A of the diameter and with the frame and lid indicated, which payment will be full compensation for constructing this item including all excavation, materials, labor, tools, equipment and incidentals necessary, including the valve vault and frame and lid and whips.

### **VALVE VAULTS, TYPE A, TYPE 1 FRAME, CLOSED LID**

**Description.** This work shall consist of constructing valve vaults for water mains and water services in accordance with Section 44 of the latest edition of the "Standard Specifications for Water Construction in Illinois" and Section 602 of the latest edition of the "Standard Specifications for Road and Bridge Construction" except as modified herein.

In addition to the requirements of Sections 44-2.02, 44-301 and 602, valve vaults shall be constructed in accordance with IDOT Highway Standard 602501, Value Vault Type A. All lids for valve vaults shall be IDOT Type 1 (Standard 604001) frame and lids and have the word "WATER" cast into them.

All valve vaults must include a minimum of 4-inches of adjusting rings, rubber boots and MacWrap.

When valve vaults are constructed over existing valve boxes and water main, the work shall include removing existing valve boxes and making any adjustments necessary to the existing water main and appurtenances to allow for the construction of the valve vault. This work shall be incidental to the price of constructing VALVE VAULTS, TYPE A, TYPE 1 FRAME, CLOSED LID.

**Method of Measurement and Basis of Payment.** This work will be paid for at the contract unit price per EACH for VALVE VAULTS, TYPE A, TYPE 1 FRAME, CLOSED LID, of the type and diameter specified, together with the specified frames, grates and lids, which price shall include all frames, grates, lids, rubber boots, MacWrap, concrete and reinforcement for median inlets, adjusting rings, bedding stone, steps, flat slab tops, and all excavation and backfill.

### **WATER MAIN LINE STOP**

**Description.** This work shall consist of the placement of a self-contained unit as indicated on the plans for the purpose of installation of a valve and/or other connection with the existing water distribution system without interruption of service. This work shall be performed at the locations shown on the plans and as directed by the ENGINEER.

The line stop unit shall be a self-contained hydraulic (hand pump operated) ram. The line stopping device shall be of such a design, that when hydraulic pressure is applied, the rubber will expand and conform to the inside diameter of the pipe and tuberculation inside the main (if any) will be moved outside of the sealing area. The line stop shall be of the 'Short Stop' variety, which will require removing only the top of the pipe during operation. All fittings shall employ an inside diameter thread, screw-type connection. After insertion of the plug, a screw-on cap shall be used and bolted down. The system shall be capable of containing a water pressure of 150 psi. Shop drawings for line stop sleeves shall be submitted for approval by the ENGINEER prior to delivery to the job site.

**Basis of Payment.** This work will be paid for at the contract unit price per EACH for WATER MAIN LINE STOP of the diameter specified, which price shall be payment in full for all excavation, saw cutting, legal disposal off-site of all excess material, trench backfill, labor, materials and equipment necessary to perform the work as herein specified.

## WATER MAIN

### A. General

All work shall conform to the Standard Specifications for Water and Sewer Main Construction in Illinois, Latest Edition; Illinois Environmental Protection Agency; American Water Works Association Specifications; American Standards National Institute Specifications; and applicable Village special provisions.

### B. Water Main Pipe and Fittings

All water mains shall be Class 52 ductile iron pipe, American made meeting the requirements of ANSI / AWWA C151 / A21.51, with ANSI / AWWA C104 / A21.4 cement lining, and with push-on single gasket joints or mechanical joints conforming to ANSI/AWWA C111/A21.11.

Fittings shall be ductile iron with 250 psi pressure rating, cement lined in accordance with ANSI/AWWA C110/A21.10. Approved retainer glands shall be required at all connections of water main with bends, tees, crosses, reducers and other fittings.

Ductile iron pipe and fittings shall be encased with eight (8) mil thick polyethylene encasement conforming to ANSI/AWWA C105/A21.5. Encasement will not be measured and paid for separately, but shall be included in the cost for Water Main.

Water mains shall be constructed with a minimum depth of cover of 5'-6" from the existing ground or proposed grade (whichever is lower) to the top of barrel of the pipe.

All fittings including bends, tees, elbows, crosses, reducers, retainer glands, cutting in sleeves, plugs, anchor fittings, thrust block, and other appurtenances shall be American made and will not be paid for separately but shall be included in the contract unit price per lineal foot of respective size water main. Any deviation from the plans caused by field conditions will not be paid for separately, but shall be considered included in the cost of water main of the size specified.

### C. Water Main Protection Requirements

#### 1. Horizontal Separation

Whenever possible, a water main must be laid at least ten (10) feet horizontally from any existing or proposed drain or sewer line. Should local conditions exist which would prevent a lateral separation of ten (10) feet, a water main may be laid closer than ten (10) feet to a storm or sanitary sewer provided that the water main invert is at eighteen (18) inches above the crown of the sewer, and is higher in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer. If it is impossible to obtain proper horizontal and vertical

separation as described above, both the water main and sewer must be constructed of ductile iron pipe, meeting requirements of Section 40-2.02 of the Standard Specifications for Water and Sewer Main Construction in Illinois" and meeting water main standards and be pressure tested to the maximum expected surcharge head to assure water tightness before backfilling.

2. Vertical Separation

Whenever water main must cross house sewers, storm sewers, or sanitary sewers, the water main shall be laid at such an elevation that the invert of the water main is eighteen (18) inches above the crown of the drain or sewer. This vertical separation must be maintained for that portion of the water main located with ten (10) feet horizontally of any sewer or drain crossed. This must be measured as the normal distance from the water main to the drain or sewer. If it is impossible to obtain the proper vertical separation as described above, or if it is necessary for the water main to pass under a sewer or drain, both the water main and sewer must be constructed of ductile iron pipe, meeting requirements of Section 40-2.02 of the Standard Specifications for Water and Sewer Main Construction in Illinois" and meeting water main standards. This construction must extend on each side of the crossing until the normal distance from the water main to the sewer or drain line is at least ten (10) feet. In making such crossings, center a length of water main pipe over the sewer to be crossed so that the joints will be equidistant from the sewer. Where a water main must cross under a sewer, a vertical separation of (18) inches between the invert of the sewer and the crown of the water main shall be maintained, along with means to support the larger sized lines to prevent their settling and breaking the water main.

D. Trench Backfill and Bedding

Trench Backfill requirements for water main shall be in accordance with the Contract Special Provision for TRENCH BACKFILL. This work shall be paid for at the contract unit price per cubic yard for TRENCH BACKFILL.

The bedding material for the pipe shall be CA-11 or CA-13 coarse aggregate, and shall be placed from 4" below the pipe to 12" above the pipe. The cost for the bedding shall be incidental to the contract unit price per foot for the WATER MAIN of the size specified.

E. Thrust Blocking

Precast concrete thrust blocks shall be constructed at all bends, tees, fire hydrants, plugs and valves against undisturbed earth and in accordance with the plan details and Section 41-2.09 of the Standard Specifications for Water and Sewer Main Construction in Illinois. Poured concrete thrust blocks will not be allowed. This work will not be measured or paid for separately but shall be included in the cost for the water main and no additional compensation will be allowed.

F. Non-Pressure Connections

The contractor shall make connections to the existing water main by removing a portion of the existing main and connecting the proposed water main at that point, as shown on the plans. This work shall include all necessary fittings, retainer glands, labor and equipment required to complete the work. Connection of ductile iron water main to existing cast iron water main will require the use of an approved sleeve. The use of 441 Transition Couplings will not be allowed.

After pressure testing, chlorination, and all service transfers have been completed, the existing main shall be shut down and the connections shall then be completed.

G. Pressure Testing

All water mains or any valved section of a water main shall be partially backfilled so that all joints are exposed. It shall be subjected to a hydrostatic pressure of 150 psi gauged, based on the elevation of the lowest point in the line or section under test and corrected to the elevation of the test gauge for both pressure and leakage for a period of not less than one (1) hour. Any cracked or defective pipe fittings, valves, hydrants found shall be removed and replaced with satisfactory materials and the test repeated until test results are satisfactory to the Village. Joints showing visible leaks shall be tightened and made water tight. Pressure tests shall be witnessed by the Director of Public Works or his authorized representative. Allowable leakage shall not exceed a ten (10) pound loss for one (1) hour and maintain the pressure thereafter or according to the following Table:

Leakage Requirements

Main Size	Allowable Leakage
12"	1.80 / gallons / hr. 1000' of main
10"	1.50    "    "    "    "
8"	1.20    "    "    "    "
6"	0.90    "    "    "    "
4"	0.60    "    "    "    "

H. Chlorination

The water main or any valve section shall be chlorinated only after the results of the hydrostatic test are satisfactory to the Director of Public Works or his authorized representative and the valved section has been flushed. The liquid chlorine gas mixture method of procedure, as stated hereinafter shall be followed:

1. Prior to chlorination, all dirt and foreign material shall be removed from the main, or any valved section, by a thorough flushing through the hydrants at a minimum of 2.5 feet per second.
2. A chlorine gas-water mixture shall be applied by means of a solution-feed chlorinating device, or if approved by the Director of Public Works or his authorized representative, the gas shall be fed directly from a chlorine cylinder equipped for diffusion of the gas within the pipe. All taps for chlorine injection shall be provided for in the valve vault.
3. The preferable point of application of the chlorinating agent shall be through a corporation stop inserted near the horizontal axis of the pipe at the beginning of the pipe line extension of any valve section to be placed in service. The water injector for delivering the gas-water mixture into the pipe shall be supplied by a tap on the pressure side of a valve controlling the flow into the pipe to be chlorinated.
4. Water from the pressure side of the valve or other source of supply shall be controlled to flow very slowly into the newly laid pipe line during the application of chlorine. The rate of chlorine gas-water mixture flow shall be in such proportion to the rate of water entering the pipe that the chlorine dose applied to the water entering the newly laid pipe shall have a chlorine residual of not less than 50 ppm. It shall be left in contact with the main for at least twenty-four (24) hours with a 25 ppm chlorine residual remaining after the contact period.
5. Following the chlorination, all treated water shall be thoroughly flushed from the new section of main. Samples shall be collected for bacteriological analysis on two (2) successive days from various points on the new portion of the system under the supervision of the Water Department Superintendent or his/her authorized representative. The samples will be tested for potability in a laboratory approved by the State of Illinois. A report will be furnished to the Village, indicating negative bacteriological samples. The samples shall be taken at approximate twenty-four (24) hour intervals.

I. Final Inspection

The Contractor shall contact the Public Works Department of the Village of Wilmette all water main extensions are completed and installed in conformance with the specifications to set up a final inspection for Village acceptance.

J. Basis of Payment

This work will be paid for at the contract unit price per FOOT for WATER MAIN, of the diameter specified, which price shall include excavation, pipe bedding material, pipe fittings, retainer glands, joint materials, thrust blocks, polyethylene encasement, hydrostatic testing, chlorination, non-pressure connections and all labor, materials and equipment necessary to complete the work shown on the plans and specified herein.

## **WATER SERVICE REPLACEMENT**

**Description.** This work consists of water service connection in accordance with Section 562 of Standard Specifications for Road and Bridge Construction (latest edition), except as revised herein.

**The Contractor shall be required to have a licensed plumber make the tap into the water main. The Contractor shall also be required to provide an independent third-party inspection by a licensed plumber with inspection report/documentation.**

Any water service lines that are less than 5-foot in depth shall be insulated with minimum 2-foot wide by 4-inch thick insulation board meeting ASTM 578, Type VI, 40 PSI compressive strength per ASTM D1621, with 0.1% maximum water absorption per ASTM C272. All insulation board joints shall be overlapped. Backfill material around the insulation boards shall be fine sand (FA-7), free from roots, organic matter, leaves, and all other injurious materials.

Any adjustment to the installed water service lines due to proposed sewer construction shall be included in the cost of this item.

Water services shall be installed with appropriate horizontal/vertical water sewer separation in accordance with Illinois Standard Specifications for Water and Sewer Construction (latest editions). If sewer service horizontal/vertical location cannot be verified, the proposed water service shall be installed 10 feet from the existing water service.

### Water Service 2" diameter and less:

Work shall consist of complete removal of the existing curb stop and curb box, tapping the new water main, and extending new copper services perpendicularly from the new water main to the

new curb stop/ curb box to be installed in the parkway as shown on the drawings and/or as directed by the ENGINEER.

All services 1" in diameter or less shall be tapped at a 1.5" diameter with a 1.5" diameter K Copper water service line installed to the curb stop / curb box, at which point the water service line shall be reduced to the actual service diameter.

All services shall be installed using a double stainless steel strap service saddle as manufactured by Smith-Blair (No. 317). No direct taps will not allowed.

Water Service 4" or greater in diameter:

Work shall consist of installing appropriately sized tee fittings with an attached valve(s), and extending the new ductile iron service from the new water main to the new valve to be installed in the parkway, as shown on the drawings and/or as directed by the ENGINEER.

All existing water services which are 3-inch in diameter will be changed to 4-inch services and reduced to 3-inch at the point of connection to the existing service.

Ductile Iron Pipe Water Service:

All ductile iron pipe shall be thickness class 52 (zinc coated) in accordance with AWWA Standard Specifications for Ductile Iron Pipe, centrifugally cast in Metal Molds for water or other Liquids - AWWA -C151 latest revision. The whole of the above Specifications shall apply. The pipe shall be furnished with push-on joints. All pipe shall be cement-mortar lined inside and zinc and bituminous-coated outside, in accordance with Sec. 51-8 - ANSI A21.51 (AWWA C104 and C151). All ductile iron pipe must be clearly marked by the manufacturer to indicate pipe classification or pipe thickness. Unmarked pipe will not be accepted.

Copper Pipe:

Copper pipe shall be copper water tube, Type K with Ford packs, soft temper, for underground service, conforming to ASTM-B88 and ASTM-B251 of the inside diameter indicated on the Drawings. The pipe shall be marked with the manufacturer's name or trademark and a mark indicative of the type of pipe. The outside diameter of the pipe and minimum weight per foot of the pipe shall not be less than that listed in ASTM B251, Table 11.

For Existing Lead Water Service Connections; use of minimum 2.0 feet (5.0 feet max.) straight pipe of Potable Water Service Tubing (CTS) be installed prior to connecting to existing lead water service.

For connections to existing lead water services; PVC, SDR. 9, Potable water service tubing (CTS). High-density polyethylene conforming to the minimum requirements of cell classification 445574E as defined and described in ASTM D3350. The resin designation code of PE4710 by the Plastic Pipe Institute.

For Existing Lead Water Services Connections; (Installation of Min. 2' (5' max) PVC pipe)

- 1) End of tubing or pipe must be round, free of burrs and clean for both existing lead and new PVC pipes by using pipe cutter only.
- 2) For PE plastic tubing or pipe, push the appropriate size of liner in until the flare on the liner rests solidly against the end of the tubing or pipe.
- 3) Insert tubing into the body of fitting until it contacts the stop inside the fitting.
- 4) Tighten the compression nut until it makes contact with the machined shoulder of the fitting.

Contractors may only cut lead services using a tube cutter. Saws will not be allowed.

#### Stops and Fittings:

All corporation stops, curb stops, and connection couplings shall be fabricated of no-lead / low-lead bronze alloy and shall be provided with outlets suitable for connections. All connections shall be made with flare-type couplings. Stops and fittings shall be as manufactured by Mueller and shall be in accordance with AWWA Specifications. Corporation stops (Mueller B25000) shall be the non-restricting ball valve type and curb stops shall be ¼ turn restricting (Mueller H15154N).

For 1.5" to 1" connections, piggy back nut as manufactured by Ford Co. Other compression fittings as manufactured by Mueller.

Curb Stops - Mueller H-15154N

Curb Box - Mueller H10304 (Minneapolis pattern)

Corporation Stop - Mueller B25000

Service Saddles: Smith-Blair (No. 317)

#### Curb Boxes:

The curb boxes shall be cast iron Minneapolis pattern base, for rigid assembly, extension-type for 5'-6" bury or as required to make flush with the existing ground elevation. The boxes shall be complete with a lid marked 'WATER' and pentagon brass plug. Curb boxes shall be as manufactured by Mueller Co. (H10304).

Shop Drawings for water system components shall be submitted for approval as soon as possible, but not less than thirty (30) calendar days prior to the time when the components are intended to be installed.

Care should be taken in installing new water services so as to have the least interruption of service to the water customer. This work will require disruptions of water service. The CONTRACTOR shall notify the ENGINEER not less than 48-hours in advance of planned disruptions. It should be noted that the water main will not be turned off for the installation of water services. It should also be noted that the Village of Wilmette Public Works personnel are the only persons authorized to turn on and off water main valves.

All water service lines shall be augured in place and shall be a minimum of five (5) feet in depth. Provide pipe insulation if cover is less than 5-feet (included in the cost of various pay Items). The CONTRACTOR may select a boring tool, mechanical drill or jack, at his option, to form the passage through the soil for insertion of water services under existing pavements. The size of the passage shall be just large enough to accommodate the service, but not so large to cause post-construction subsidence of the pavement. The service line shall be capped or plugged during the insertion process to prevent the entrance of soil. The insertion and receiving pits shall be backfilled in accordance with Section 208 of the Standard Specifications.

The replacement service line shall be one continuous length (no couplings in the new copper tubing will be allowed) and be of sufficient length to allow for some movement for trench settling after placement of the backfill material. CONTRACTOR shall keep the existing and new water service line clean during installation. Following installation, the service pipe shall be flushed clean prior to disconnecting the existing service. After each service is reconnected, the CONTRACTOR shall verify that the water service is supplying adequate water. The CONTRACTOR will be charged for any labor and materials used by the Village of Wilmette Public Works to correct any problems that arise due to CONTRACTOR's efforts.

**Method of Measurement.** This work shall be measured per each for WATER SERVICE REPLACEMENT, of the type and diameter specified.

**Basis of Payment.** Water Service work will be paid for at the contract unit price per EACH service connection for WATER SERVICE REPLACEMENT, 2" - SHORT, up to 2 inches in diameter, less than 40 LF in length, counted in place.

Water Service work will be paid for at the contract unit price per EACH service connection for WATER SERVICE REPLACEMENT, 2" - LONG, up to 2 inches in diameter, 40 LF to 80 LF in length, counted in place.

The Contract unit price WATER SERVICE REPLACEMENT, of the short/long side and diameter specified, shall be payment in full for all materials, labor, and equipment required for:

site preparation, including removal, replacement and/or repair of fences and other site objects; excavation, including removal and disposal of existing pipes, structures, and excess excavated materials; protection, support and repair of damage to existing utilities; support of installation pit walls; shoring and bracing; dewatering of installation pits; auguring/boring/jacking of new service line, disconnection of existing water services from existing water main and extending new services from the new water main to the new service box to be installed in the parkway; new curb boxes, couplings, fittings, joint materials, corporation stops, tapping saddles, curb stops, service piping, and buffalo boxes; machine tapping of holes into new water main; supply backfill material, backfill placement, compaction and compaction testing; disinfection; testing; correction of defects; any required adjustments per the ENGINEER; furnishing and installation insulation board; and other related work required to complete the installation which is not included under other Payment Items. Additionally, for WATER SERVICE 4 inches or greater, the price shall also include all tees (no tapping saddles allowed) and two (2) 4-inch or greater resilient wedge type valves and valve boxes per each long service, and one (1) 4-inch or greater resilient wedge type valve and valve box per each short service to match the diameter of the new service. Services less than or equal to 1 inch shall be replaced with a 1-inch diameter minimum service. Services less than or equal to 2 inches and greater than or equal to 4 inches shall be replaced with the same diameter as the existing service. Existing services greater than 2 inches and less than 4 inches shall be replaced with 4-inch services.

## **WATER VALVES**

**Description.** This work shall consist of furnishing and installing gate valves of the size and type specified at the locations indicated on the plans or directed by the ENGINEER in accordance with the following provisions and the standard specifications.

**Materials.** All gate valves shall be resilient wedge type. Water gate valve shall be iron body, fully bronze mounted, and of ample strength to withstand and operate satisfactorily under 200 psi cold water working pressure, and shall be subjected to a 300 psi by hydrostatic test pressure, made in the shop. Water gate valves shall be mechanical joint and shall equal or exceed the requirements of the American Water Works Association. All valves shall be of non-rising stem type and shall be equipped with two-inch (2") square operating nuts. All valves shall open to the left or counterclockwise and shall conform to AWWA C-515 Series 2500 Waterous or Mueller A-2360 with stainless steel trim bolts, and ASTM D-429 for the rubber to metal bond on the cast iron wedge. Gates will be epoxy impregnated in accordance with AWWA C550. Cathodic anodes shall be included for all valves. Mechanical joint bolts shall be weather resistant steel meeting the requirements for ASTM A242-HSLA, SS304 and SS316.

**Method of Measurement and Basis of Payment.** This work shall be paid for at the contract unit price per EACH for WATER VALVES of the respective size listed in the "bidding schedule", which price shall be payment in full for all work as specified.

## **WAYFINDING SIGNS**

**Description.** This work shall consist of fabricating, transporting, assembling and installing wayfinding signs as specified herein, as shown on the plans, and as directed by the Engineer.

### **General.**

The following sign types and components are included in this item:

1. Single-Sheet-Type Signs
2. Aluminum Pole Assemblies
3. Brackets and Accessories

#### **A. Performance requirements**

**Structural Performance:** Provide post and panel signs capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated, determined according to ASCE 7, "Minimum Design Loads for Buildings and Other Structures":

**Thermal Movements:** Provide post and panel signs that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

**Temperature Change (Range):** 120 deg F, ambient; 180 deg F, material surfaces.

#### **B. Submittals: in accordance with Submittal Procedures**

**Product Data:** For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes. Include manufacturer's written instructions for maintaining and cleaning sign surfaces.

**Shop Drawings:** Show fabrication and installation details for all signs. All shop drawings shall be stamped and scaled by a professional structural engineer.

Include plans, elevations, and at least 3/4-inch scale sections of typical members and other components and construction details. Show anchors, reinforcement, accessories, layout, and installation details.

Include message list, with details of wording and lettering layout, at least half size. Include full-size details of graphics.

Provide Graphic layouts for each sign location and its associated message. Minimum scale: 1" = 1' - 0"

Fabricator shall provide a Structural Engineer Seal (State of Illinois) for all shop drawings indicating fasteners, construction, installation, footers or other structural components.

Samples for Verification: For 3 sets of each type of product indicated, of size below:  
Aluminum Post: For each form, finish, and color, on 6-inch-long sections.

Aluminum Sheet: Squares of sheet at least 6 inches by 6 inches.

Paint Swatches: For each painted color, provide a 4" by 4" inch aluminum sheet. Clearly indicate on the back the color specification, date and submittal number.

Reflective Vinyl Sheet: 8 by 10 inches for each color required.

Examples of all graphic image process, including materials, methods, colors and finishes, for maps, patterns, imagery, letters, numbers and other graphic devices.

Sign Components: In addition to the submittals outlined above, the following sign components will require samples and/or mock-ups for approval prior to fabrication. The mock-ups shall be fabricated of the approved materials, processes, finishes and colors.

Sign mockups: One each of the following signs require a full size mockup for review and approval prior to fabrication. Mockups shall be fabricated on a high quality rigid material:

1. Directional Sign Panel
2. Public Parking Sign Panel
3. Downtown Directional Sign Panel

The contractors bid shall include costs for a complete sign fabrication and construction including but not limited to, mobilization, product data, shop drawings, mock-ups, samples.

### **C. Quality assurance**

Installer Qualifications: An authorized representative of sign manufacturer for installation and maintenance of units required for this Project

Installer shall be capable of providing replacement message panels within 10 working days of receipt of order.

Source Limitations: Obtain each type of post and panel sign through one source from a single manufacturer.

Product Options: Drawings indicate size, profiles, and dimensional requirements of post and panel signs and are based on the specific type and model indicated.

Do not modify intended aesthetic effects, as judged solely by Designer, except with Designer's approval. If modifications are proposed, submit comprehensive explanatory data to Designer for review.

Suggested Modifications shall not increase cost or schedule of project.

Manufacturer:  
Parvin Clauss Sign Company  
Brian Newton  
[BNewton@ParvinClauss.com](mailto:BNewton@ParvinClauss.com)  
<http://www.parvinclauss.com/>  
(630) 510-2020 x3018  
165 Tubeway Drive  
Carol Stream, IL

**D. Delivery, storage and handling**

Deliver post and panel signs in protective covering and crating to protect sign components and surfaces against damage.

Coordinate delivery time so signs can be installed within 24 hours of receipt at Project site.

**E. Coordination**

Coordinate installation of anchorages for post and panel signs. Furnish setting drawings, templates, and directions for installing anchorages and other items that are to be embedded in concrete. Deliver such items to Project site in time for installation.

Coordinate delivery time so signs can be installed within 24 hours of receipt at Project site.

**F. Warranty**

Warranty Period: 10 years from date of Substantial Completion.

The post, panel, footers, sign faces, materials and fasteners shall be free of defects, including, but not limited to the following; scaling, peeling, fading, warping, vinyl shrinking, and corrosion.

**G. Materials**

Pole assemblies: POLE, POLE CAP, DECORATIVE BASE

MANUFACTURER:

TAPCO- Traffic & Parking Control Co., Inc.

5100 W Brown Deer Road,

Brown Deer, WI 53223

Telephone: 1-800-236-0112

[www.tapconet.com](http://www.tapconet.com)

POLES:

2-3/8" Diameter Smooth Aluminum Poles

Finish: Powder Coated Black

Size: Varies, See Drawings

POST CAP:

Round Dome Style

Finish: Powder Coated Black

DECORATIVE BASE:

Aluminum Mini Base for 2-3/8" Pole

Finish: Powder Coated Black

**Materials**

Aluminum Sheet: ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of alloy 5005-H15.

Aluminum Extrusions: ASTM B 221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of alloy 6063-T5.

Vinyl Film: Engineer Grade reflective vinyl film, as produced by 3M Corporation, with pressure-sensitive adhesive backing, suitable for exterior applications.

Steel: Steel material shall conform to ASTM A595.

#### Accessories

Fasteners, Brackets, and Decorative Components: Use concealed fasteners fabricated from metals that are noncorrosive to sign material and mounting surface. Where fasteners are exposed, use tamper resistant fasteners.

Anchors and Inserts: Use stainless-steel or hot-dip galvanized anchors and inserts. Use torque-controlled expansion-bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete.

#### Cast-in-place-concrete footing

This material is specified elsewhere in the Project Specifications.

#### **Fabrication, general**

General: Provide post and panel signs of configurations indicated.

Welded Connections: Comply with AWS standards for recommended practices in shop welding. Provide welds behind finished surfaces without distortion or discoloration of exposed side. Clean exposed welded surfaces of welding flux and dress exposed and contact surfaces.

Mill joints to tight, hairline fit. Form joints exposed to weather to exclude water penetration.

Preassemble signs in the shop to greatest extent possible. Disassemble signs only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation, in location not exposed to view after final assembly.

Conceal fasteners if possible; otherwise, locate fasteners where they will be inconspicuous.

#### POSTS

General: Fabricate posts to lengths required for mounting method indicated.

Direct bury: Post to be cast-in-place concrete footing. Shop drawings shall be provided by fabricator for footing detail. Shop drawings shall be stamped and sealed by a professional structural engineer

## SIGN PANELS

General: Provide smooth sign panel surfaces constructed to remain flat under installed conditions within a tolerance of plus or minus 1/16 inch measured diagonally from corner to corner.

Coordinate dimensions and attachment methods to produce message panels with closely fitting joints. Align edges and surfaces with one another in the relationship indicated.

Increase metal thickness or reinforce with concealed stiffeners or backing materials as needed to produce surfaces without distortion, buckles, warp, or other surface deformations.

Continuously weld joints and seams, unless other methods are indicated; grind, fill, and dress welds to produce smooth, flush, exposed surfaces with welds invisible after final finishing.

All signs to have removable panels to accommodate panel replacements.

Unframed Single-Sheet Panels: Provide unframed single-sheet sign panels with edges mechanically and smoothly finished.

Panel Material: 0.125 (1/8") thick aluminum sheet

Panel Finish: Surface painted, utilizing Matthew polyurethane paint's

Panel Coating: Matthews Clearcoat, Anti-Graffiti Protectant

Edge Condition: Square cut.

Corner Condition: As indicated on Drawings

Form: Bend aluminum sheet at angle indicated on drawings

Removable Panel Condition: As indicated on Drawings

Provide tamper-resistant hardware for removable panels

Formed Sign Panels and Cabinet: Provide formed sign panel and cabinet with edges mechanically and smoothly finished. Fabricator shall provide shop drawings showing aluminum square tube framework and support systems.

Panel Material: 0.125 (1/8") thick aluminum sheet

Panel Finish: Surface painted, utilizing Matthew polyurethane paint's

Panel Coating: Matthews Clearcoat, Anti-Graffiti Protectant

Edge Condition: Square cut.

Corner Condition: As indicated on Drawings

Form: Bend aluminum sheet at angle indicated on drawings

Removable Panel Condition: As indicated on Drawings

Provide tamper-resistant hardware for removable panels

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Panel Finish: Surface painted, utilizing Matthew polyurethane paint's

Panel Coating: Matthews Clearcoat, Anti-Graffiti Protectant

Edge Condition: Square cut.

Corner Condition: As indicated on Drawings

Form: Bend aluminum sheet at angle indicated on drawings

Removable Panel Condition: As indicated on Drawings

Provide tamper-resistant hardware for removable panels

## GRAPHICS

Surface-Applied Copy and Background: Provide engineer grade reflective vinyl film with pressure-sensitive adhesive backing. Apply copy to exposed face of sign panel.

## ALUMINIUM FINISHES

Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

Baked-Enamel Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Apply baked enamel complying with paint manufacturer's written instructions for cleaning, conversion coating, and painting.

Organic Coating: Thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603 except with a minimum dry film thickness of 1.5 mils, medium gloss.

Clear Coating: All exposed surfaces shall have a Mathews Polyurethane Clear Coat Protectant that provides scratch resistance, abrasion resistance, weather resistance and UV inhibitors.

Paint Color: As indicated on drawings, PMS colors as specified are to be matched according to the numbers specified from the PANTONE Color Selector. Paint to have a satin finish.

## STEEL FINISHES

All fabricated steel surfaces shall be electrostatically powder-coated with TGIC polyester powder coatings. Products are fully cleaned and pretreated, preheated and coated while hot to fill crevices and build coating film. Coated parts are fully cured to coating.

Powder coating color shall be black.

## **Execution**

### INSTALLATION

Pavement removals: Where pavement removals are required, contractor shall remove, store and reinstall unit pavers to match the patterns and elevations of adjacent pavements.

Excavation: In firm, undisturbed or compacted soil, drill or (using a post-hole digger) hand-excavate holes for each post to minimum diameter recommended by sign manufacturer, but at least four times the largest post cross-section.

Excavate footing depths approximately 48 inches below finished grade.

Install signs level, plumb, and at height indicated, with surfaces free from distortion or other defects in appearance.

Fabricator/Installer is responsible for contacting the utility companies prior to any digging. It is the responsibility of the fabricator/ installer to coordinate all calls, utility checks and footer production so that it will not delay the installation of the sign program.

Installer shall coordinate sequencing, excavation, delivery, installation and clean-up with all related construction projects. Installer shall backfill and fine grade all disturbed landscape areas so as to provide a seamless transition in grade between new and existing landscape conditions.

Installer representative will be present at all field surveys and site markings prior to installation. As part of a team including the Engineer, representatives of the design teams, the installer representative responsibilities will include;

Measuring and marking out (spray paint) final sign location number and placement

Recording measurements of sign placement from nearest intersection

Record all message, sign type and location revisions, additions or subtractions that effect the production or installation of the sign program

**CLEANING**

At completion of installation, clean soiled surfaces of sign units according to manufacturer's written instructions.

Contractor shall keep the project site free from accumulation of waste materials and debris generated by his operation, by removing debris at least once a day. Equipment shall not be left on site without prior approval of construction office.

Upon completion of work, debris and equipment are to be removed from the site leaving the area clean.

**FINAL SHOP DRAWING SUBMITTAL**

Upon approval of shop drawings the manufacturer shall provide final bound shop drawing submittal in both a paper and PDF format. A schedule of wayfinding sign types follows below:

QUANTITY	PAY ITEM	DESCRIPTION
8	WAYFINDING SIGN	DIRECTIONAL SIGN, FREESTANDING
6	WAYFINDING SIGN	DIRECTIONAL SIGN, MOUNTED TO EXISTING LIGHT POLE
2	WAYFINDING SIGN	PUBLIC PARKING DIRECTIONAL SIGN, FREE STANDING
3	WAYFINDING SIGN	PUBLIC PARKING DIRECTIONAL SIGN, MOUNTED TO EXISTING LIGHT POLE
2	WAYFINDING SIGN	DOWNTOWN DIRECTIONAL SIGN, MOUNTED TO EXISTING LIGHT POLE

**Method of Measurement.** The contract unit price for WAYFINDING SIGNS shall include fabrication, assembly and all hardware necessary to install as recommended by the manufacturer and as shown on the plans, including all materials, footings, labor, and equipment required to complete this work.

**Basis of Payment.** Furnishing and installing WAYFINDING SIGNS will be paid for at the contract unit price per EACH for WAYFINDING SIGNS.

### **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.”

### **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.

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.

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.

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:

Upon construction of the temporary access, sixty percent of the contract unit price per each, of the type constructed, will be paid.

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.”

### **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.

**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.

**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 $\pm$ 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 ± 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.”

**FRICITION AGGREGATE (D-1)**

Effective: January 1, 2011

Revised: November 1, 2019

Revise Article 1004.03(a) of the Standard Specifications to read:

**“1004.03 Coarse Aggregate for Hot-Mix Asphalt (HMA).** The aggregate shall be according to Article 1004.01 and the following.

(a) Description. The coarse aggregate for HMA shall be according to the following table.

Use	Mixture	Aggregates Allowed
Class A	Seal or Cover	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag Crushed Concrete
HMA Low ESAL	Stabilized Subbase or Shoulders	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag <sup>1/</sup> Crushed Concrete
HMA High ESAL Low ESAL	Binder IL-19.0 or IL-19.0L  SMA Binder	<u>Allowed Alone or in Combination</u> <sup>5/ 6/</sup> : Crushed Gravel Carbonate Crushed Stone <sup>2/</sup> Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Concrete <sup>3/</sup>

Use	Mixture	Aggregates Allowed	
HMA High ESAL Low ESAL	C Surface and Binder IL-9.5 or IL-9.5L	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Crushed Gravel Carbonate Crushed Stone <sup>2/</sup> Crystalline Crushed Stone Crushed Sandstone	
	SMA Ndesign 50 Surface	Crushed Slag (ACBF) Crushed Steel Slag <sup>4/</sup> Crushed Concrete <sup>3/</sup>	
HMA High ESAL	D Surface and Binder IL-9.5  SMA Ndesign 50 Surface	<u>Allowed Alone or in Combination</u> <sup>5/</sup> : Crushed Gravel Carbonate Crushed Stone (other than Limestone) <sup>2/</sup> Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag <sup>4/</sup> Crushed Concrete <sup>3/</sup>	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		25% Limestone	Dolomite
		50% Limestone	Any Mixture D aggregate other than Dolomite
		75% Limestone	Crushed Slag (ACBF) or Crushed Sandstone
HMA High ESAL	E Surface IL-9.5  SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> <sup>5/ 6/</sup> :  Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag  No Limestone.	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		50% Dolomite <sup>2/</sup>	Any Mixture E aggregate

Use	Mixture	Aggregates Allowed	
		75% Dolomite <sup>2/</sup>	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone
		75% Crushed Gravel <sup>2/</sup> or Crushed Concrete <sup>3/</sup>	Crushed Sandstone, Crystalline Crushed Stone, Crushed Slag (ACBF), or Crushed Steel Slag
HMA High ESAL	F Surface IL-9.5  SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> <sup>5/ 6/</sup> :	
		Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag No Limestone.	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		50% Crushed Gravel <sup>2/</sup> , Crushed Concrete <sup>3/</sup> , or Dolomite <sup>2/</sup>	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone

- 1/ Crushed steel slag allowed in shoulder surface only.
- 2/ Carbonate crushed stone (limestone) and/or crushed gravel shall not be used in SMA Ndesign 80. In SMA Ndesign 50, carbonate crushed stone shall not be blended with any of the other aggregates allowed alone in Ndesign 50 SMA binder or Ndesign 50 SMA surface.
- 3/ Crushed concrete will not be permitted in SMA mixes.
- 4/ Crushed steel slag shall not be used as leveling binder.
- 5/ When combinations of aggregates are used, the blend percent measurements shall be by volume.”

Combining different types of aggregate will not be permitted in SMA Ndesign 80.”

**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 $\mu$ m)	95 $\pm$ 5
No. 50 (300 $\mu$ m)	> 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  $\pm$  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.

**HOT-MIX ASPHALT BINDER AND SURFACE COURSE (D-1)**

Effective: November 1, 2019

Revised: February 2, 2020

Description. This work shall consist of constructing a hot-mix asphalt (HMA) binder and/or surface course on a prepared base. Work shall be according to Sections 406 and 1030 of the Standard Specifications, except as modified herein.

Materials. Revise Article 1004.03(c) to read:

“(c) Gradation. The coarse aggregate gradations shall be as listed in the following table.

Use	Size/Application	Gradation No.
Class A-1, A-2, & A-3	3/8 in. (10 mm) Seal	CA 16 or CA 20
Class A-1	1/2 in. (13 mm) Seal	CA 15
Class A-2 & A-3	Cover Coat	CA 14
HMA High ESAL	IL-19.0; Stabilized Subbase IL-19.0	CA 11 <sup>1/</sup>
	SMA 12.5 <sup>2/</sup>	CA 13 <sup>4/</sup> , CA 14, or CA 16
	SMA 9.5 <sup>2/</sup>	CA 13 <sup>3/4/</sup> or CA 16 <sup>3/</sup>
	IL-9.5	CA 16, CM 13 <sup>4/</sup>
	IL-9.5FG	CA 16
HMA Low ESAL	IL-19.0L	CA 11 <sup>1/</sup>
	IL-9.5L	CA 16

1/ CA 16 or CA 13 may be blended with the CA 11.

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/ The specified coarse aggregate gradations may be blended.

4/ 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.”

HMA Nomenclature. Revise the “High ESAL” portion of the table in Article 1030.01 to read:

“High ESAL	Binder Courses	IL-19.0, IL-9.5, IL-9.5FG, IL-4.75, SMA 12.5, Stabilized Subbase IL-19.0
	Surface Courses	IL-9.5, IL-9.5FG, SMA 12.5, SMA 9.5”

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 a 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 Department’s Qualified Producer List, “Technologies for the Production of Warm Mix Asphalt (WMA)”.”

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

igh ESAL, MIXTURE COMPOSITION (% PASSING) <sup>1/</sup>										
Sieve Size	IL-19.0 mm		SMA 12.5		SMA 9.5		IL-9.5mm		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>4/</sup>	16	32 <sup>4/</sup>	34 <sup>5/</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>
#635 (20 μm)			≤ 3.0		≤ 3.0					
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 N<sub>design</sub> = 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/ 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.
- 5/ 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, for IL-4.75 it shall be 3.5 percent and for Stabilized Subbase it shall be 3.0 percent at the design number of gyrations. The voids in the mineral aggregate (VMA) and voids filled with asphalt binder (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; Stabilized Subbase IL- 19.0	IL-9.5	IL-4.75 <sup>1/</sup>	
50	13.5	15.0	18.5	65 – 78 <sup>2/</sup>
70				65 - 75
90				

1/ Maximum draindown for IL-4.75 shall be 0.3 percent.

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

Revise the table in Article 1030.04(b)(3) to read:

“VOLUMETRIC REQUIREMENTS, SMA 12.5 <sup>1/</sup> and SMA 9.5 <sup>1/</sup>			
N <sub>design</sub>	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 ≥ 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.”

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.”

Quality Control/Quality Assurance (QC/QA). Revise the third paragraph of Article 1030.05(d)(3) to read:

“If the Contractor and Engineer agree the nuclear density test method is not appropriate for the mixture, cores shall be taken at random locations determined according to the QC/QA document "Determination of Random Density Test Site

Locations". Core densities shall be determined using the Illinois Modified AASHTO T 166 or T 275 procedure.”

Add the following paragraphs to the end of Article 1030.05(d)(3):

“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.

When a longitudinal joint sealant (LJS) is applied, longitudinal joint density testing will not be required on the joint(s) sealed.”

Revise the second table in Article 1030.05(d)(4) and its notes to read:

“DENSITY CONTROL LIMITS			
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-9.5FG	Ndesign = 50 - 90	93.0 – 97.4 %	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 = 80	93.5 – 97.4 %	91.0%

- 1/ Density shall be determined by cores or by correlated, approved thin lift nuclear gauge.
- 2/ 92.0 % when placed as first lift on an unimproved subgrade.”

Equipment. Add the following to Article 1101.01 of the Standard Specifications:

“(h) Oscillatory Roller. The oscillatory roller shall be self-propelled and provide a smooth operation when oscillatory roller shall be equipped with water tanks and sprinkling devices, or other approved methods, which shall be used to wet the drums to prevent material pickup. The drum(s) amplitude and frequency of the tangential and vertical impact force shall be approximately the same in each direction and meet the following requirements:

- (1) The minimum diameter of the drum(s) shall be 42 in. (1070 mm);
- (2) The minimum length of the drum(s) shall be 57 in. (1480 mm);
- (3) The minimum unit static force on the drum(s) shall be 125 lb/in. (22 N/m); and
- (4) The minimum force on the oscillatory drum shall be 18,000 lb (80 kN).”

Construction Requirements.

Add the following to Article 406.03 of the Standard Specifications:

“(j) Oscillatory Roller .....1101.01”

Revise the third paragraph of Article 406.05(a) to read:

“All depressions of 1 in. (25 mm) or more in the surface of the existing pavement shall be filled with binder. At locations where heavy disintegration and deep spalling exists, the area shall be cleaned of all loose and unsound material, tacked, and filled with binder (hand method).”

Revise Article 406.05(c) to read.

“(c) Binder (Hand Method). Binder placed other than with a finishing machine will be designated as binder (hand method) and shall be compacted with a roller to the satisfaction of the Engineer. Hand tamping will be permitted when approved by the Engineer.”

Revise the special conditions for mixture IL-4.75 in Article 406.06(b)(2)e. to read:

“e. The mixture shall be overlaid within 5 days of being placed.”

Revise Article 406.06(d) to read:

“(d) Lift Thickness. The minimum compacted lift thickness for HMA binder and surface courses shall be as follows.

MINIMUM COMPACTED LIFT THICKNESS	
Mixture Composition	Thickness, in. (mm)
IL-4.75	3/4 (19) - over HMA surfaces <sup>1/</sup> 1 (25) - over PCC surfaces <sup>1/</sup>
IL-9.5FG	1 1/4 (32)
IL-9.5, IL-9.5L	1 1/2 (38)
SMA 9.5	1 3/4 (45)
SMA 12.5	2 (51)
IL-19.0, IL-19.0L	2 1/4 (57)

1/ The maximum compacted lift thickness for mixture IL-4.75 shall be 1 1/4 in. (32 mm).”

Revise Table 1 and Note 3/ of Table 1 in Article 406.07(a) of the Standard Specifications to read:

“TABLE 1 - MINIMUM ROLLER REQUIREMENTS FOR HMA				
	Breakdown Roller (one of the following)	Intermediate Roller	Final Roller (one or more of the following)	Density Requirement
Binder and Surface <sup>1/</sup>	V <sub>D</sub> , P <sup>3/</sup> , T <sub>B</sub> , 3W, O <sub>T</sub> , O <sub>B</sub>	P <sup>3/</sup> , O <sub>T</sub> , O <sub>B</sub>	V <sub>S</sub> , T <sub>B</sub> , T <sub>F</sub> , O <sub>T</sub>	As specified in Articles: 1030.05(d)(3), (d)(4), and (d)(7).
IL-4.75 and SMA <sup>4/ 5/</sup>	T <sub>B</sub> , 3W, O <sub>T</sub>	--	T <sub>F</sub> , 3W, O <sub>T</sub>	

Bridge Decks <sup>2/</sup>	T <sub>B</sub>	- -	T <sub>F</sub>	As specified in Articles 582.05 and 582.06.
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3/ A vibratory roller (V<sub>D</sub>) or oscillatory roller (O<sub>T</sub> or O<sub>B</sub>) may be used in lieu of the pneumatic-tired roller on mixtures containing polymer modified asphalt binder.”

Add the following to EQUIPMENT DEFINITION in Article 406.07(a) contained in the Errata of the Supplemental Specifications:

“O<sub>T</sub> - Oscillatory roller, tangential impact mode. Maximum speed is 3.0 mph (4.8 km/h) or 264 ft/min (80 m/min).

O<sub>B</sub> - Oscillatory roller, tangential and vertical impact mode, operated at a speed to produce not less than 10 vertical impacts/ft (30 impacts/m).”

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).

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 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 second through the fifth paragraphs of Article 406.14 with the following:

“HMA binder and surface courses will be paid for at the contract unit price per ton (metric ton) for MIXTURE FOR CRACKS, JOINTS, AND FLANGEWAYS; HOT-MIX ASPHALT BINDER COURSE (HAND METHOD), of the  $N_{design}$  specified; HOT-MIX ASPHALT BINDER COURSE, of the mixture composition and  $N_{design}$  specified; HOT-MIX ASPHALT SURFACE COURSE, of the mixture composition, friction aggregate, and  $N_{design}$  specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE (HAND METHOD), of the  $N_{design}$  specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, of the mixture composition and  $N_{design}$  specified; POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, of the mixture composition, friction aggregate, and  $N_{design}$  specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, STONE MATRIX ASPHALT, of the mixture composition and  $N_{design}$  specified; POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, STONE MATRIX ASPHALT, of the mixture composition, friction aggregate, and  $N_{design}$  specified.”

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

Effective: January 22, 2003

Revised: August 10, 2017

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 Engineer seventy-two (72) hours in advance of all long-term (24 hrs. or longer) lane closures.

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 **6:00 AM to 8:30 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 = \$ 1,500

Two lanes blocked = \$ 3,000

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

**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 traffic control and protection required by the Engineer, will be paid for in accordance with Article 109.04 of the Standard Specifications.

**PUBLIC CONVENIENCE AND SAFETY (D-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.”

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

Effective: November 1, 2012

Revise: November 1, 2019

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 Central Bureau of Materials Policy Memorandum, “Reclaimed Asphalt Shingle (RAS) Sources”, by weight of RAS. All RAS used shall come from a Central Bureau of Materials 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, 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 mixture composition of the mix design.
- (2) Restricted FRAP (B quality) stockpiles shall consist of RAP from Class I, HMA (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, 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 HMA (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 Central Bureau of Materials 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),  $G_{mm}$ . A five test average of results from the original pile will be used in the mix designs. Individual extraction test

results run thereafter, shall be compared to the average used for the mix design, and will be accepted if within the tolerances listed below.

Parameter	FRAP
No. 4 (4.75 mm)	± 6 %
No. 8 (2.36 mm)	± 5 %
No. 30 (600 µm)	± 5 %
No. 200 (75 µm)	± 2.0 %
Asphalt Binder	± 0.3 %
G <sub>mm</sub>	± 0.03 <sup>1/</sup>

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	
	FRAP	RAS
% Passing: <sup>1/</sup>		
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%
G <sub>mm</sub>	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, HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.
  - (2) RAP from HMA (Low ESAL) IL-19.0L binder mixture is designated as Class D quality coarse aggregate.
  - (3) RAP from Class I, 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 Central Bureau of Materials 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 listed below for a given N Design.

Maximum Asphalt Binder Replacement (ABR) for FRAP with RAS Combination

HMA Mixtures <i>1/ 2/ 4/</i>	Maximum % ABR		
	Ndesign	Binder <sup>5/</sup>	Surface <sup>5/</sup>
30L	50	40	30
50	40	35	30
70	40	30	30
90	40	30	30
SMA			30
IL-4.75			40

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 %.

5/ When the mix has Illinois Flexibility Index Test (I-FIT) requirements, the maximum percent asphalt binder replacement designated on the table may be increased by 5%.

**1031.07 HMA Mix Designs.** At the Contractor's option, HMA mixtures may be constructed utilizing 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.

The RAP, FRAP and RAS stone specific gravities ( $G_{sb}$ ) shall be according to the "Determination of Aggregate Bulk (Dry) Specific Gravity ( $G_{sb}$ ) of Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)" procedure in the Department's Manual of Test Procedures for Materials.

**1031.08 HMA Production.** HMA production utilizing FRAP and/or RAS shall be as follows.

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 and agglomerated material.

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) FRAP. The coarse aggregate in all FRAP used shall be equal to or less than the nominal maximum size requirement for the HMA mixture being produced.
- (b) RAS. RAS shall be incorporated into the HMA mixture either by a separate weight depletion system or by using the RAP weigh belt. Either feed system shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes. The portion of RAS shall be controlled accurately to within  $\pm 0.5$  percent of the amount of RAS utilized. When using the weight depletion system, flow indicators or sensing devices shall be provided and interlocked with the plant controls such that the mixture production is halted when RAS flow is interrupted.

(c) 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).
- e. RAS and FRAP weight to the nearest pound (kilogram).
- f. Virgin asphalt binder weight to the nearest pound (kilogram).
- g. 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 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 Central Bureau of Materials 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.”

**RESTRICTION ON WORKING DAYS AFTER A COMPLETION DATE**

Effective: January 21, 2003

Revised: January 1, 2007

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

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

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

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

Effective: June 1, 2016

Revised: January 1, 2020

Utility companies and/or municipal owners located within the construction limits of this project have provided the following information regarding 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 below; 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.

Pre-Stage

No Conflicts to be resolved in the pre-stage.

Stage 1

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	DURATION OF TIME
122+69 Lt	Electric	The vaults need to be adjusted to final grade.	<b>ComEd</b>	1 Day Total
108+17 Lt 109+40 Lt	Gas	Valve	<b>Nicor</b>	1 Day Total
Sta. 108+80 Rt Sta. 115+75 Rt Sta. 122+65 Rt Sta. 129+59 Rt Sta. 149+77 Rt	Electric	The vaults need to be adjusted.	<b>ComEd</b>	2 Days Total
Sta. 115+89 Rt Sta. 139+02 Rt    Sta. 125+54 Rt Sta. 209+34 Rt Sta. 212+65 Rt	Telephone	The manhole/vault needs to be adjusted to final grade or relocated away from proposed curb during or before Stage 1.  The splice box needs to be relocated	<b>AT&amp;T</b>	2 Days Total

Sta. 118+62 Rt Sta. 209+34 Rt	Telephone	The manholes need to be adjusted during Stage 1.	<b>Verizon</b>	1 Day Total
Sta. 115+89 Rt	Communication	The manhole shall be adjusted to proposed grade during Stage 1.	<b>XO</b>	1 Day Total
Sta. 114+66 Rt Sta. 126+69 Rt	Telephone	The handholes shall be adjusted to proposed grade during Stage 1.	<b>Sprint</b>	1 Day Total
Sta. 114+50 to Sta. 117+66 Rt	Gas Main	Gas Main May be in conflict with the proposed roadway subgrade or drainage structures S-2-2, S-2-4 or storm sewer P-2-2. The gas main would need to be relocated/adjusted prior to Contractor moving into Stage 1.	<b>Windstream KDL</b>	3 Days Total
Aerial fiber optic Cables between power poles 133+15 Lt to Sta. 133+94 Lt to Sta. 134+97 Lt	Communication	The power poles are in conflict with the proposed curb and gutter. Windstream shall coordinate with ComEd regarding where the new locations of the power poles.  The aerial cables will need to be relocated to the relocated power poles prior to Contractor moving into Stage 1.	<b>Windstream</b>	2 Days Total

Sta. 114+14 Rt	Communication	Handhole to be adjusted to proposed finished grade. The handhole would need to be adjusted during Stage 1.	<b>MFS</b>	1 Day Total
Sta. 114+66	Communication	Handholes to be adjusted to proposed finished grade. The handholes would need to be adjusted during Stage 1.	<b>Worldcom</b>	1 Day Total
Sta. 215+86 Rt Sta. 209+34 Rt	Telephone	Manhole/Vaults to be adjusted to proposed finished grade. The MH/Vaults needs to be adjusted during Stage 1.	<b>MCI Metro</b>	1 Day Total
Sta. 212+65 Rt	Telephone	Splice box to be relocated out of conflict with the proposed curb. The relocation needs to occur prior to Stage 1.	<b>Ameritech</b>	1 Day Total
Sta. 133+28 and Sta. 133+40	Gas Main	Gas Main May be in conflict with the proposed drainage structures S-3-20, S-3-22. The gas main would need to be relocated/adjusted prior to Contractor moving into Stage 1.	<b>Nicor</b>	2 Days Total
Aerial Cables between power poles at Sta. 134+46 Rt, Sta. 135+73 Rt, Sta 136+84 Rt, and	Cable TV	The power poles are in conflict with the proposed curb and gutter. WOW shall coordinate with ComEd regarding where the new	<b>Wide Open West (WOW)</b>	1 Day Total

Sta 138+25 Rt		<p>locations of the power poles.</p> <p>The aerial cables will need to be relocated to the relocated power poles prior to Contractor moving into Stage 1.</p>		
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Stage 2

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	ACTION
Sta. 111+35 Lt Sta. 120+26 Lt Sta. 121+87 Lt Sta. 125+31 Lt Sta. 127+12 Lt Sta. 133+94 Lt	Electric	<p>The power poles are in conflict with the proposed sidewalk, curb and gutter, or roadway.</p> <p>The power poles and aerial cables will need to be relocated prior to Contractor moving into Stage 2.</p>	<b>ComEd</b>	2 Days Total
109+63 Rt 116+85 Rt	Gas	The valves need to be adjusted to final grade.	<b>AT&amp;T</b>	1 Day Total
Sta. 104+04 Rt Sta. 104+13 Rt  Sta. 104+25 Rt Sta. 104+49 Rt (2) Sta. 107+19 Rt	Telephone	<p>Handholes to be adjusted to final grade.</p> <p>Vaults to be adjusted to final grade.</p>	<b>AT&amp;T</b>	2 Days Total

Sta. 115+17 Rt				
<p>Aerial Cables between power poles at          Sta. 110+84 Lt,          Sta. 111+89 Lt,          Sta. 113+11 Lt,          Sta. 114+71 Lt,          Sta. 116+00 Lt,          Sta. 118+81 Lt,          Sta. 120+63 Lt,          and          Sta. 133+34 Lt</p>	Cable TV	<p>The power poles are in conflict with the proposed sidewalk, curb and gutter, and roadway. Comcast shall coordinate with ComEd regarding where the new locations of the power poles.</p> <p>The aerial cables will need to be relocated to the relocated power poles prior to Contractor moving into Stage 2.</p>	<b>Comcast</b>	2 Days Total
<p>Aerial Cables between power poles at          Sta. 110+84 Lt,          Sta. 111+89 Lt,          Sta. 113+11 Lt,          Sta. 114+71 Lt,          Sta. 116+00 Lt,          Sta. 118+81 Lt,          Sta. 120+63 Lt,          and          Sta. 133+34 Lt</p>	Communica tion	<p>The power poles are in conflict with the proposed sidewalk, curb and gutter, and roadway. RCN shall coordinate with ComEd regarding where the new locations of the power poles.</p> <p>The aerial cables will need to be relocated to the relocated power poles prior to Contractor moving into Stage 2.</p>	<b>RCN</b>	2 Days Total

Sta. 111+23 Lt	Gas Main	Gas Main May be in conflict with the proposed storm sewer P-1-20. The gas main would need to adjusted prior to Contractor moving into Stage 2.	<b>Nicor</b>	2 Days Total
Aerial Cables between power poles at Sta. 110+84 Lt, Sta. 111+89 Lt, Sta. 113+11 Lt, Sta. 114+71 Lt, Sta. 116+00 Lt, Sta. 118+81 Lt, Sta. 120+63 Lt, and Sta. 133+34 Lt	Cable TV	The power poles are in conflict with the proposed sidewalk, curb and gutter, and roadway. WOW shall coordinate with ComEd regarding where the new locations of the power poles.  The aerial cables will need to be relocated to the relocated power poles prior to Contractor moving into Stage 2.	<b>Wide Open West (WOW)</b>	2 Days Total

Stage 3

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	ACTION
Sta. 106+95 and Sta. 110+00 Lt	Telephone	Buried Cables May be in conflict with the proposed drainage structures S-1-8 and S-1-16. The buried cable would need to be relocated/adjusted prior to Contractor moving into Stage 3.	<b>AT&amp;T</b>	2 Days Total

Sta. 106+95 and Sta. 110+00 Lt	Cable TV	Buried Cables May be in conflict with the proposed drainage structures S-1-8 and S-1-16. The buried cable would need to be relocated/adjusted prior to Contractor moving into Stage 3.	<b>Comcast</b>	2 Days Total
Sta. 106+95 and Sta. 110+00 Lt	Gas Main	Gas Main May be in conflict with the proposed drainage structures S-1-8 and S-1-16. The gas main would need to be relocated/adjusted prior to Contractor moving into Stage 3.	<b>Nicor</b>	2 Days Total

Pre-stage: 0 Days Total Installation  
 Stage 1: 21 Days Total Installation  
 Stage 2: 19 Days Total Installation  
 Stage 3: 6 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.

Agency/Company Responsible to Resolve Conflict	Name of contact	Phone	E-mail address
<b>ComEd Public Relocation Department</b>	<b>Peter Kratzer</b>	708-518-6209	Peter.Kratzer@ComEd.com
<b>AT&amp;T</b>	<b>Bobby Akhter</b>	630-719-1483	ba3817@att.com

<b>AT&amp;T Mandate Engineering</b>	<b>Legal Bruce Robbins</b>	630-573- 6471	br1831@att.com
<b>CenturyLink</b>	<b>Kendall Williams- Zetina</b>	918-547- 0547	Kendall.Zetina@centurylink.com
<b>Comcast</b>	<b>Martha Gieras</b>	224-229- 5862	Martha_gieras@comcast.com
<b>G4S Technology</b>	<b>Douglas Gones</b>	630-343- 2826	douglas.gones@usa.g4s.com
<b>RCN</b>	<b>Hector Santos</b>		Hector.Santos@rcn.net
<b>Nicor</b>	<b>Bruce Koppang</b>	630-388- 3046	BKoppang@southernco.com
<b>Wide Open West (Wow)</b>	<b>Paul Flinkow</b>	630-536- 3139	Paul.Flinkow@wowinc.com

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

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	ACTION
Sta. 114+50 to Sta. 117+66 Rt	Gas Main	Gas Main located in the vicinity of the proposed roadway subgrade or drainage structures S-2-2, S-2-4 or storm sewer P-2-2.	<b>Windstream KDL</b>	Contractor to have JULIE locate and then shall “pot” hole as necessary to verify alignment of gas line along project limit. Utility Exploration pay item added to plans.
Aerial fiber optic Cables between power poles 133+15 Lt to Sta. 133+94 Lt to Sta. 134+97 Lt	Communication	The power poles and overhead lines are located in the vicinity of the proposed curb and gutter.	<b>Windstream</b>	Contractor shall exercise care so as not to damage the poles when working near or grading around the power poles. Contract shall store equipment away from the overhead lines
Sta. 133+28 and Sta. 133+40	Gas Main	Gas Main is located in the vicinity of proposed drainage structures S-3-20, S-3-22.	<b>Nicor</b>	Contractor to have JULIE locate and then shall “pot” hole as necessary to verify alignment of gas line along project limit. Utility Exploration pay item added to plans.
Aerial Cables between power poles at Sta. 134+46 Rt, Sta. 135+73 Rt, Sta 136+84 Rt, and Sta 138+25 Rt	Cable TV	The power poles and aerial cable are located in the vicinity of the proposed curb and gutter.	<b>Wide Open West (WOW)</b>	Contractor shall not excavate around power poles and shall store equipment away from the overhead lines

Stage 2

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
53+66 Lt 55+57 Lt 57+29 Lt 18+07 Lt	Electric	The power poles are in conflict with the proposed sidewalk, curb and gutter, or roadway.	<b>ComEd</b>	Contractor shall not excavate around power poles and shall store equipment away from the overhead lines.

Stage 3

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	ACTION
Sta. 106+95 and Sta. 110+00 Lt	Telephone	Buried cables located in the vicinity of the proposed drainage structures S-1-8 and S-1-16. .	<b>AT&amp;T</b>	Contractor to have JULIE locate and then shall “pot” hole to verify alignment of cable along project limit. Utility Exploration pay item added to plans Contractor shall not dig in any areas other than those designated for proposed drainage items.
Sta. 106+95 and Sta. 110+00 Lt	Cable TV	Buried cables located in the vicinity of the proposed drainage structures S-1-8 and S-1-16. .	<b>Comcast</b>	Contractor to have JULIE locate and then shall “pot” hole to verify alignment of cable along project limit. Utility Exploration pay item added to plans Contractor shall not dig in any areas other than those designated for proposed drainage items.

Sta. 106+95 and Sta. 110+00 Lt	Gas Main	Gas main located in the vicinity of the the proposed drainage structures S-1-8 and S-1-16. .	<b>Nicor</b>	Contractor to have JULIE locate and then shall “pot” hole as necessary to verify alignment of gas line along project limit. Utility Exploration pay item added to plans.
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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	Phone	E-mail address
<b>ComEd</b>	Tom Mahar	630-576-7094	Thomas.mahar@comed.com

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 considered 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 above 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 duration 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 when necessary. The Department’s contractor is responsible for contacting J.U.L.I.E. prior to all excavation work.

**STORM SEWER ADJACENT TO OR CROSSING WATER MAIN**

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.

**TEMPORARY INFORMATION SIGNING**

Effective: November 13, 1996

Revised: January 29, 2020

Description.

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

Materials.

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

	<b><u>Item</u></b>	<b><u>Article/Section</u></b>
a.)	Sign Base (Note 1)	1090
b.)	Sign Face (Note 2)	1091
c.)	Sign Legends	1091

d.)	Sign Supports	1093
e.)	Overlay Panels (Note 3)	1090.02

- Note 1. The Contractor may use 5/8 inch (16 mm) instead of 3/4 inch (19 mm) thick plywood.
- Note 2. The sign face material shall be in accordance with the Department's Fabrication of Highway Signs Policy.
- Note 3. The overlay panels shall be 0.08 inch (2 mm) thick.

### **GENERAL CONSTRUCTION REQUIREMENTS**

#### Installation.

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

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

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

#### Method Of Measurement.

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

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

#### Basis Of Payment.

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

### **TEMPORARY PAVEMENT**

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.

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

### **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).

SHORT TERM PAVEMENT MARKING, Temporary pavement markings will be paid for separately unless shown on a Standard.

### **TRAFFIC CONTROL PLAN**

Traffic Control shall be according to the applicable sections of the Standard Specifications, the Supplemental Specifications, the "Illinois Manual of 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 Articles 107.09 of the Standard Specifications and the following Highway Standards, Details, Quality Standard for Work Zone Traffic Control Devices, Special Provisions, and Recurring Special Provisions contained herein, relating to traffic control.

The Contractor shall contact the engineer, the District 1 Bureau of Traffic, and Village of Wilmette at least 72 hours in advance of beginning work.

STANDARDS: 701006, 701301, 701311, 701501, 701701, 701801, 701901

DETAILS: TC-10 – Traffic Control and Protection for Side Roads, Intersections, and Driveways  
TC-13 – District One Typical Pavement Markings  
TC-16 – Short Term Pavement Marking Letters and Symbols  
TC-22 – Arterial Road Information Sign  
TC-26 – Driveway Entrance Signing

SPECIAL PROVISIONS: Maintenance of Roadways  
Public Convenience and Safety (District 1)  
Temporary Information Signing  
Keeping Arterial Roadways Open to Traffic (Lane Closures Only)  
Temporary Pavement Marking (BDE)  
Pavement Marking Removal (BDE)  
Equipment Parking and Storage (BDE)  
Traffic Control Devices – Cones (BDE)  
Work Zone Traffic Control Devices (BDE)

## **TRAFFIC SIGNAL SPECIFICATIONS**

### **CONCRETE FOUNDATIONS**

Effective: May 22, 2002

Revised: July 01, 2015

878.01TS

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.

### **ELECTRIC CABLE**

Effective: May 22, 2002

Revised: July 1, 2015

873.01TS

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.

**ELECTRIC UTILITY SERVICE CONNECTION (COMED)**

Effective: January 1, 2012

**Description.** This item shall consist of payment for work performed by ComEd in providing or modifying electric service as indicated. THIS MAY INVOLVE WORK AT MORE THAN ONE ELECTRIC SERVICE. For summary of the Electrical Service Drop Locations see the schedule contained elsewhere herein.

CONSTRUCTION REQUIREMENTS

**General.** It shall be the Contractor's responsibility to contact ComEd. The Contractor shall coordinate his work fully with the ComEd both as to the work required and the timing of the installation. No additional compensation will be granted under this or any other item for extra work caused by failure to meet this requirement. **Please contact ComEd, New Business Center Call Center, at 866 NEW ELECTRIC (1-866-639-3532) to begin the service connection process. The Call Center Representatives will create a work order for the service connection. The representative will ask the requestor for information specific to the request. The representative will assign the request based upon the location of project.**

The Contractor should make particular note of the need for the earliest attention to arrangements with ComEd for service. In the event of delay by ComEd, no extension of time will be considered applicable for the delay unless the Contractor can produce written evidence of a request for electric service within 30 days of execution.

**Method of Payment.** The Contractor will be reimbursed to the exact amount of money as billed by ComEd for its services. Work provided by the Contractor for electric service will be paid separately per EACH as described under ELECTRIC SERVICE INSTALLATION. No extra compensation shall be paid to the Contractor for any incidental materials and labor required to fulfill the requirements as shown on the plans and specified herein.

For bidding purposes, this item shall be estimated as \$3,000.00.

**Basis of Payment.** This work will be paid for at the contract LUMP SUM price for ELECTRIC UTILITY SERVICE CONNECTION which shall be reimbursement in full for electric utility service charges.

**Designers Note:** The estimate of cost of service connections for bidding purposes shall be provided by the Designer or Design Consultant.

**EMERGENCY VEHICLE PRIORITY SYSTEM**

Effective: May 22, 2002

Revised: July 1, 2015

887.01TS

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 signaled 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 signaled 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.

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

Effective: January 1, 2013

Revised: July 1, 2015

873.03TS

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.

**FULL-ACTUATED CONTROLLER AND CABINET**

**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) "EAGLE" brand traffic actuated solid state controller.

The controller cabinet shall be painted black.

**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 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 Centrac, 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 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).

**GROUNDING OF TRAFFIC SIGNAL SYSTEMS**

Effective: May 22, 2002

Revised: July 1, 2015

806.01TS

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.

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.

## **HANDHOLE TO BE ADJUSTED**

This work shall consist of adjusting existing electric handholes and street lighting handholes at locations shown on the plans. The handholes shall be adjusted to the finished grade.

Basis of Payment: This work shall be paid for at the contract unit price, per EACH, for HANDHOLE TO BE ADJUSTED, of the type indicated on the plans, which price shall include all work, excavation, materials, all equipment and labor required to complete the work as specified and to restore the existing ground or pavement.

## **HANDHOLES**

### 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. Only handholes serving traffic signal equipment shall have this label. Handhole covers for Red Light Running Cameras shall be labeled "RLRC".

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).”

**LIGHT EMITTING DIODE (LED) SIGNAL HEAD AND OPTICALLY PROGRAMMED  
LED SIGNAL HEAD**

Effective: May 22, 2002

Revised: July 1, 2015

880.01TS

**Materials.**

Add the following to Section 1078 of the Standard Specifications:

1. LED modules proposed for use and not previously approved by IDOT District One will require independent testing for compliance to current VTCSH-ITE standards for the product and be Intertek ETL Verified. This would include modules from new vendors and new models from IDOT District One approved vendors.
2. The proposed independent testing facility shall be approved by IDOT District One. Independent testing must include a minimum of two (2) randomly selected modules of each type of module (i.e. ball, arrow, pedestrian, etc.) used in the District and include as a minimum Luminous Intensity and Chromaticity tests. However, complete module performance verification testing may be required by the Engineer to assure the accuracy of the vendor's published data and previous test results. An IDOT representative will select sample modules from the local warehouse and mark the modules for testing. Independent test results shall meet current ITE standards and vendor's published data. Any module failures shall require retesting of the module type. All costs associated with the selection of sample modules, testing, reporting, and retesting, if applicable, shall be the responsibility of the LED module vendor and not be a cost to this contract.
3. All signal heads shall provide 12" (300 mm) displays with glossy yellow or black polycarbonate housings. All head housings shall be the same color (yellow or black) at the intersection. For new signalized intersections and existing signalized intersections where all signals 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. Post top mounting collars are required on all posts, and shall be constructed of the same material as the brackets.
4. The LED signal modules shall be replaced or repaired if an LED signal module fails to function as intended due to workmanship or material defects within the first 7 years from the date of traffic signal TURN-ON. LED signal modules which exhibit luminous intensities less than the minimum values specified in Table 1 of the ITE Vehicle Traffic Control Signal Heads: Light Emitting Diode (LED) Circular Signal Supplement (June 27,

2005) [VTSCH], or applicable successor ITE specifications, or show signs of entrance of moisture or contaminants within the first 7 years of the date of traffic signal TURN-ON shall be replaced or repaired. The vendor's written warranty for the LED signal modules shall be dated, signed by a vendor's representative and included in the product submittal to the State.

(a) Physical and Mechanical Requirements

1. Modules can be manufactured under this specification for the following faces:
  - a. 12 inch (300 mm) circular, multi-section
  - b. 12 inch (300 mm) arrow, multi-section
2. The maximum weight of a module shall be 4 lbs. (1.8 kg).
3. Each module shall be a sealed unit to include all parts necessary for operation (a printed circuit board, power supply, a lens and gasket, etc.), and shall be weather proof after installation and connection.
5. The lens of the module shall be tinted with a wavelength-matched color to reduce sun phantom effect and enhance on/off contrast. The tinting shall be uniform across the lens face. Polymeric lens shall provide a surface coating or chemical surface treatment applied to provide abrasion resistance. The lens of the module shall be integral to the unit, convex with a smooth outer surface and made of plastic. The lens shall have a textured surface to reduce glare.
6. The use of tinting or other materials to enhance ON/OFF contrasts shall not affect chromaticity and shall be uniform across the face of the lens.
7. Each module shall have a symbol of the type of module (i.e. circle, arrow, etc.) in the color of the module. The symbol shall be 1 inch (25.4 mm) in diameter. Additionally, the color shall be written out in 1/2 inch (12.7mm) letters next to the symbol.

(b) Photometric Requirements

4. The LEDs utilized in the modules shall be AlInGaP technology for red and InGaN for green and amber indications, and shall be the ultra bright type rated for 100,000 hours of continuous operation from -40 °C to +74 °C.

(c) Electrical

1. Maximum power consumption for LED modules is per Table 2.
2. Operating voltage of the modules shall be 120 VAC. All parameters shall be measured at this voltage.
3. The modules shall be operationally compatible with currently used controller assemblies (solid state load switches, flashers, and conflict monitors).
4. When a current of 20 mA AC (or less) is applied to the unit, the voltage read across the two leads shall be 15 VAC or less.
5. 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.
6. LED arrows 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.

(d) Retrofit Traffic Signal Module

1. The following specification requirements apply to the Retrofit module only. All general specifications apply unless specifically superseded in this section.
2. Retrofit modules can be manufactured under this specification for the following faces:
  - a. 12 inch (300 mm) circular, multi-section
  - b. 12 inch (300 mm) arrow, multi-section
3. Each Retrofit module shall be designed to be installed in the doorframe of a standard traffic signal housing. The Retrofit module shall be sealed in the doorframe with a one-piece EPDM (ethylene propylene rubber) gasket.
4. The maximum weight of a Retrofit module shall be 4 lbs. (1.8 kg).
5. Each Retrofit module shall be a sealed unit to include all parts necessary for operation (a printed circuit board, power supply, a lens and gasket, etc.), and shall be weather proof after installation and connection.
6. Electrical conductors for modules, including Retrofit modules, shall be 39.4 inches (1m) in length, with quick disconnect terminals attached.

7. The lens of the Retrofit module shall be integral to the unit, shall be convex with a smooth outer surface and made of plastic or of glass.
- (e) The following specification requirements apply to the 12 inch (300 mm) arrow module only. All general specifications apply unless specifically superseded in this section.
1. The arrow module shall meet specifications stated in Section 9.01 of the Equipment and Material Standards of the Institute of Transportation Engineers (November 1998) [ITE Standards], Chapter 2 (Vehicle Traffic Control Signal Heads) or applicable successor ITE specifications for arrow indications.
  2. The LEDs arrow indication shall be a solid display with a minimum of three (3) outlining rows of LEDs and at least one (1) fill row of LEDs.
- (f) The following specification requirement applies to the 12 inch (300 mm) programmed visibility (PV) module only. All general specifications apply unless specifically superseded in this section.
1. The LED module shall be a module designed and constructed to be installed in a programmed visibility (PV) signal housing without modification to the housing.

Basis of Payment.

Add the following to the first paragraph of Article 880.04 of the Standard Specifications:

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

Revise the second paragraph of Article 880.04 of the Standard Specifications to read:

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

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

Effective: May 22, 2002

Revised: July 1, 2015

881.01TS

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 AlInGaP 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.

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

Effective: May 22, 2002

Revised: July 1, 2015

850.01TS

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 EXISTING FLASHING BEACON INSTALLATION. Each flashing beacon will be paid for separately.

### **MAST ARM ASSEMBLY AND POLE**

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.

Add the following to Article 1077.03 of the Standard Specifications:

The Steel Mast Arm Assembly and Pole and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 9322STFP / 4BCC / BK with a black finish. See Steel Mast Arm Assembly and Pole details provided in the plans.

The bottom of the signal housing and any related attachments to a vehicular signal face located over any portion of a highway that can be used by motor vehicles shall be a minimum of 16 feet and maximum of 18 feet above the roadway pavement per Highway Standard 877001-08.

### **MAST ARM SIGN PANELS**

Effective: May 22, 2002

Revised: July 1, 2015

720.01TS

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.

**REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT**

Effective: May 22, 2002

Revised: July 1, 2015

895.02TS

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.

### **REMOVE EXISTING SIGNAL CABLE**

Revise Article 895.08 Paragraph 6 of the Standard Specifications to read:

#### **Basis of Payment:**

Removal of existing signal electric cable and interconnect tracer cable shall be included in the contract unit cost for REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT. The salvage value of the removed cables shall be reflected in the contract bid price.

### **REMOVE EXISTING CONCRETE FOUNDATION**

Add the following to Article 895.05 of the Standard Specifications

**Description:** The existing concrete foundation which is to be removed shall be disposed of at the Contractor's expense. This work shall include all of the necessary work to remove the existing concrete foundation from the ground and to restore the existing pavement or ground to match the adjacent conditions at the site. Holes created should be filled or barricade immediately to prevent safety hazards.

**Basis of Payment:** This work shall be paid for at the contract unit price, per EACH, for REMOVE EXISTING CONCRETE FOUNDATION, which shall be payment in full which includes all work, excavation, materials to remove and dispose of an existing concrete traffic signal foundation, as well as all equipment and labor required to complete the work specified and to restore the existing ground or pavement.

### **REMOVE EXISTING HANDHOLE**

Add the following to Article 895.05 of the Standard Specifications:

**Description:** The existing handhole which is to be removed and is to become the property of the Contractor shall be disposed of at the Contractor's expense. This work shall include all of the necessary work to remove the existing handholes from the ground and to restore the existing pavement or ground to match the adjacent conditions at the site. Holes created should be filled or barricaded immediately to prevent safety hazards.

**Basis of Payment:** This work shall be paid for at the contract unit price, per EACH, for REMOVE EXISTING HANDHOLE, of the type indicated on the plans, which price shall include all work, excavation, materials, all equipment and labor required to complete the work as specified and to restore the existing ground or pavement.

**SERVICE INSTALLATION (TRAFFIC SIGNALS)**

Effective: May 22, 2002

Revised: June 15, 2016

805.01TS

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. The contractor is to coordinate the work to be performed and the materials required with the utility company to make the final connection at the power source. 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.

**SIGNAL TIMING**

This work shall consist of preparing a signal timing plan for approval and programming the permanent traffic signal controller accordingly.

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

Particular attention shall be paid to any traffic operation impacts to or from adjacent intersections at Central Avenue & Greenbay Road and Wilmette Avenue and Greenbay Road.

Signal timing plans for the AM Peak, PM Peak, and Off Peak shall be prepared for approval by the Village of Wilmette.

- 1) The following tasks are associated with SIGNAL TIMING.
  - a) Collect Existing Traffic Count Data.
  - b) Appropriate signal timings shall be developed for the intersection and appropriate cycle lengths shall be developed.
  - c) Proposed signal timing plan for the new or modified intersection shall be forwarded to Village of Wilmette for review prior to implementation.
  - d) 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 Village of Wilmette

comments and public complaints for a minimum period of 90 days from date of timing plan implementation.

- 2) The following deliverables shall be provided for SIGNAL TIMING.
  - a) Consultant shall furnish to the Village of Wilmette one (1) copy each of a SCAT Report for the optimized intersection. The SCAT Report shall include the following elements:

<b>Table of Contents</b>
<b>Tab 1: Final Report</b> 1. Project Overview 2. System and Location Description (Project specific) 3. Methodology 4. Data Collection 5. Data Analysis and Timing Plan Development 6. Implementation <ul style="list-style-type: none"> <li>a. TOD</li> </ul>
<b>Tab 2: Turning Movement Counts</b> 1. Turning Movement Counts (Showing turning movement counts in the intersection diagram for each period, including truck percentage)
<b>Tab 3: Synchro Analysis</b> 1. AM: Intersection Synchro report (Timing report) summarizing the implemented timings. 2. Midday: same as AM 3. PM: same as AM
<b>Tab 5: Environmental Report</b> 1. Environmental impact report including gas consumption, NO2, HCCO, improvements.
<b>Tab 6: Electronic Files</b> 1. Two (2) CDs for the optimized system. The CDs shall include the following elements: <ul style="list-style-type: none"> <li>a. Electronic copy of the SCAT Report in PDF format</li> <li>b. Copies of the Synchro files for the optimized system</li> <li>c. Traffic counts for the optimized system</li> <li>d. New or updated intersection graphic display files for each of the system intersections and the system graphic display file including system detector locations and addresses.</li> </ul>

**Basis of Payment:**

The work shall be paid for at the contract unit price per LUMP SUM for SIGNAL TIMING, which price shall be payment in full for performing all work described herein for the intersection of Central Avenue & Wilmette Avenue. Following the completion of the Synchro analysis, 50 percent of the bid price will be paid. Following the setup and fine-tuning of the timings, 25 percent of the bid price will be paid. The remaining 25 percent will be paid when the system is working to the satisfaction of the engineer.

**SIGN SHOP DRAWING SUBMITTAL**

Effective: January 22, 2013

Revised: July 1, 2015

720.02TS

Add the following paragraph to Article 720.03 of the Standard Specifications:

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

**TRAFFIC SIGNAL GENERAL REQUIREMENTS (D1 LR)**

Effective: April 1, 2016

Revised: July 20, 2016

LR800.01TS

These Traffic Signal Special Provisions and the "District One Standard Traffic Signal Design Details" supplement the requirements of the State of Illinois "Standard Specifications for Road and Bridge Construction." The intent of these Special Provisions is to prescribe the materials and construction methods commonly used for traffic signal installations.

- All material furnished shall be new unless otherwise noted herein.
- Traffic signal construction and maintenance work shall be performed by personnel holding current IMSA Traffic Signal Technician Level II certification. A copy of the certification shall be immediately available upon request of the Engineer.
- The work to be done under this contract consists of furnishing, installing and maintaining all traffic signal work and items as specified in the Plans and as specified herein in a manner acceptable and approved by the Engineer.

**Definitions of Terms.**

Add the following to Section 101 of the Standard Specifications:

101.56 Vendor. Company that sells a particular type of product directly to the contractor or the Equipment Supplier.

101.57 Equipment supplier. Company that supplies, represents and provides technical support for IDOT District One approved traffic signal controllers and other related equipment. The Equipment Supplier shall be located within IDOT District One and shall:

- Be full service with on-site facilities to assemble, test and trouble-shoot traffic signal controllers and cabinet assemblies.
- Maintain an inventory of IDOT District One approved controllers and cabinets.

- Be staffed with permanent sales and technical personnel able to provide traffic signal controller and cabinet expertise and support.
- Technical staff shall hold current IMSA Traffic Signal Technician Level III certification and shall attend traffic signal turn-ons and inspections with a minimum 14 calendar day notice.

Submittals.

Revise Article 801.05 of the Standard Specifications to read:

All material approval requests shall be submitted to the Resident Engineer, who will then forward the submittal on to the IDOT Local Agency Area Engineer and the Local Agency. Electronic material submittals shall follow the District's Traffic Operations Construction Submittals guidelines. General requirements include:

1. All material approval requests shall be made prior to or no later than one week after the date of the preconstruction meeting. A list of major traffic signal items can be found in Article 801.05. Material or equipment which is similar or identical shall be the product of the same manufacturer, unless necessary for system continuity. Traffic signal materials and equipment shall bear the U.L. label whenever such labeling is available.
2. Product data and shop drawings shall be assembled by pay item. Only the top sheet of each pay item submittal will be stamped by the Department with the review status, except shop drawings for mast arm pole assemblies and the like will be stamped with the review status on each sheet.
3. Original manufacturer published product data and shop drawing sheets with legible dimensions and details shall be submitted for review.
4. When hard copy submittals are requested by the Bureau of Local Roads and Streets, the number of requested sets of the manufacturer's descriptive literatures and technical data for the traffic signal materials shall be submitted.
5. For hard copy or electronic submittals, the descriptive literature and technical data shall be adequate for determining whether the materials meet the requirements of the plans and specifications. If the literature contains more than one item, the Contractor shall indicate which item or items will be furnished.
6. When hard copy submittals are necessary for structural elements, four complete copies of the shop drawings for the mast arm assemblies and poles, and the combination mast arm assemblies and poles showing, in detail, the fabrication thereof and the certified mill analyses of the materials used in the fabrication, anchor rods, and reinforcing materials shall be submitted.
7. Partial or incomplete submittals will be returned without review.
8. Certain non-standard mast arm poles and special structural elements will require additional review from IDOT's Central Office. Examples include ornamental/decorative,

- non-standard length mast arm pole assemblies and monotube structures. The Contractor shall account for the additional review time in his schedule.
9. The contract number, the name of the lead local agency (as indicated on the cover sheet of the plans), section number, project location/limits and corresponding pay code number must be on each sheet of correspondence, catalog cuts and mast arm poles and assemblies drawings.
  10. Where certifications and/or warranties are specified, the information submitted for approval shall include certifications and warranties. Certifications involving inspections, and/or tests of material shall be complete with all test data, dates, and times.
  11. After the Engineer reviews the submittals for conformance with the design concept of the project, the Engineer will stamp the drawings indicating their status as 'Approved', 'Approved-As-Noted', 'Disapproved', or 'Information Only'. Since the Engineer's review is for conformance with the design concept only, it is the Contractor's responsibility to coordinate the various items into a working system as specified. The Contractor shall not be relieved from responsibility for errors or omissions in the shop, working, layout drawings, or other documents by the Department's approval thereof. The Contractor must still be in full compliance with contract and specification requirements.
  12. The Contractor shall secure approved materials in a timely manner to assure construction schedules are not delayed.
  13. All submitted items reviewed and marked 'APPROVED AS NOTED' or 'DISAPPROVED' are to be resubmitted in their entirety, unless otherwise indicated within the submittal comments or transmittal accompanying the documents, with a disposition of previous comments to verify contract compliance at no additional cost to the contract.
  14. Exceptions to and deviations from the requirements of the Contract Documents will not be allowed. It is the Contractor's responsibility to note any deviations from Contract requirements at the time of submittal and to make any requests for deviations in writing to the Engineer. In general, substitutions will not be acceptable. Requests for substitutions must demonstrate that the proposed substitution is superior to the material or equipment required by the Contract Documents. No exceptions, deviations or substitutions will be permitted without the approval of the Engineer.
  15. The Contractor shall not order major equipment such as mast arm assemblies prior to Engineer approval of the Contractor marked proposed traffic signal equipment locations to assure proper placement of contract required traffic signal displays, push buttons and other facilities. Field adjustments may require changes in proposed mast arm length and other coordination.

Marking Proposed Locations.

Revise "Marking Proposed Locations for Highway Lighting System" of Article 801.09 to read "Marking Proposed Locations for Highway Lighting System and Traffic Signals."

Add the following to Article 801.09 of the Standard Specifications:

It shall be the contractor's responsibility to verify all dimensions and conditions existing in the field prior to ordering materials and beginning construction. This shall include locating the mast arm foundations and verifying the mast arms lengths.

Inspection of Electrical Systems.

Add the following to Article 801.10 of the Standard Specifications:

- (c) All cabinets including temporary traffic signal cabinets shall be assembled by an approved equipment supplier in District One. The Department reserves the right to request any controller and cabinet to be tested at the equipment supplier's facility prior to field installation, at no extra cost to this contract.

Maintenance and Responsibility.

Revise Article 801.11 of the Standard Specifications to read:

- a. Existing traffic signal installations and/or any electrical facilities at all or various locations may be altered or reconstructed totally or partially as part of the work on this Contract. The Contractor is hereby advised that all traffic control equipment, presently installed at these locations, may be the property of the State of Illinois, Department of Transportation, Division of Highways, County, Private Developer, Municipality or Transit Agency in which they are located. Once the Contractor has begun any work on any portion of the project, all traffic signals within the limits of this contract or those which have the item "Maintenance of Existing Traffic Signal Installation," "Temporary Traffic Signal Installation(s)" and/or "Maintenance of Existing Flashing Beacon Installation," shall become the full responsibility of the Contractor. The Contractor shall supply the Resident Engineer, IDOT Local Agency Area Engineer, Local Agency, the Owner of the traffic signal, and/or their Electrical Maintenance Contractor with two 24-hour emergency contact names and telephone numbers.
- b. Automatic Traffic Enforcement equipment such as red lighting running and railroad crossing camera systems are owned and operated by others and the Contractor shall not be responsible for maintaining this equipment.
- c. 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 and other devices that shall be included with traffic signal maintenance at no additional cost to the contract.
- d. When the project has a pay item for "Maintenance of Existing Traffic Signal Installation," "Temporary Traffic Signal Installation(s)" and/or "Maintenance of

Existing Flashing Beacon Installation,” the Contractor must notify the Resident Engineer, the Local Agency, the Owner of the traffic signal, and/or their Electrical Maintenance Contractor of their intent to begin any physical construction work on the Contract or any portion thereof. This notification must be made a minimum of seven (7) working days prior to the start of construction to allow sufficient time for inspection of the existing traffic signal installation(s) and transfer of maintenance to the Contractor. The Department will attempt to fulfill the Contractor’s inspection date request(s); however workload and other conditions may prevent the Department from accommodating specific dates or times. The Contractor shall not be entitled to any other compensation if the requested inspection date(s) cannot be scheduled by the Department. If work is started prior to an inspection, maintenance of the traffic signal installation(s) will be transferred to the Contractor without an inspection. The Contractor will become responsible for repairing or replacing all equipment that is not operating properly or is damaged at no cost to the owner of the traffic signal. Final repairs or 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.

- e. The Contractor is advised that the existing and/or temporary 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.
- f. The Contractor shall be fully responsible for the safe and efficient operation of the traffic signals and other equipment noted herein. Any inquiry, complaint or request by the Department, the Local Agency, the Owner of the traffic signal, and/or their Electrical Maintenance Contractor, or the public, shall be investigated and repairs begun within one hour. Failure to provide this service will result in liquidated damages of \$1000 per day per occurrence. In addition, the Department reserves the right to assign any work not completed within this timeframe to the Electrical Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Electrical Maintenance Contractor within one month after the incident will result in additional liquidated damages of \$1000 per month per occurrence. Unpaid bills will be deducted from the cost of the Contract. The Department, the Local Agency, the Owner of the traffic signal, and/or their Electrical Maintenance Contractor may inspect any signaling device under their jurisdiction at any time without notification.

- g. 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.
- h. 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.
- i. 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 for separately but shall be included in the contract.

Damage to Traffic Signal System.

Add the following to Article 801.12(b) of the Standard Specifications to read:

Any traffic signal control equipment damaged or not operating properly from any cause shall be replaced with new equipment meeting current District One traffic signal specifications and/or applicable Local Agency 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 are only allowed at the bases of post and mast arms.

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.

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.

Traffic Signal Inspection (TURN-ON).

Revise Article 801.15(b) of the Standard Specifications to read:

It is the intent to have all electric work completed and equipment field tested by the Equipment Supplier prior to the Department's "turn-on" field inspection. If in the event the Engineer determines work is not complete and the inspection will require more than two (2) hours to complete, the inspection shall be canceled and the Contractor will be required to reschedule at another date. The maintenance of the traffic signals will not be accepted until all punch list work is corrected and re-inspected.

When the road is open to traffic, except as otherwise provided in Section 850 of the Standard Specifications, the Contractor may request a turn-on and inspection of the completed traffic signal installation at each separate location. This request must be made to the Bureau of Local Roads and Streets at (847) 705-4487 a minimum of seven (7) working days prior to the time of the requested inspection. The Department will attempt to fulfill the Contractor's turn-on and inspection date request(s); however workload and other conditions may prevent the Department from accommodating specific dates or times. The Contractor shall not be entitled to any other compensation if the requested turn-on and inspection date(s) cannot be scheduled by the Department. The Department will not grant a field inspection until written or electronic notification is provided from the Contractor that the equipment has been field tested and the intersection is operating according to Contract requirements. The Contractor must invite local fire department personnel to the turn-on when Emergency Vehicle Preemption (EVP) is included in the project. When the contract includes the item RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM, OPTIMIZE TRAFFIC SIGNAL SYSTEM, or TEMPORARY TRAFFIC SIGNAL TIMINGS, the Contractor must notify the SCAT Consultant of the turn-on/detour implementation schedule, as well as stage changes and phase changes during construction.

The Contractor must have all traffic signal work completed and the electrical service installation connected by the utility company prior to requesting an inspection and turn-on of the traffic signal installation. The Contractor shall be responsible to provide a police officer to assist with traffic control at the time of testing.

The Contractor shall provide a representative from the control equipment vendor's office who is knowledgeable of the cabinet design and controller functions to attend the traffic signal inspection for both permanent and temporary traffic signal turn-ons.

Upon demonstration that the signals are operating and all work is completed in accordance with the Contract and to the satisfaction of the Engineer, the Engineer will then allow the signals to be placed in continuous operation. The Agency that is responsible for the maintenance of each traffic signal installation will assume the maintenance upon successful completion of this inspection.

The District requires the following Final Project Documentation from the Contractor at traffic signal turn-ons in electronic format in addition to hard copies where noted. A CD/DVD shall be submitted with separate folders corresponding to each numbered title below. The CD/DVD shall be labelled with date, project location, company and contract or permit number. Record Drawings, Inventory and Material Approvals shall be submitted prior to traffic signal turn-on for review by the Department as described here-in.

Final Project Documentation:

1. Record Drawings. Signal plans of record with field revisions marked in red ink. One hard copy set of 11"x17" record drawings shall also be provided.
2. Inventory. Inventory of new and existing traffic signal equipment including cabinet types and devices within cabinets in an Excel spread sheet format. One hard copy shall also be provided.
3. Pictures. Digital pictures of a minimum 12M pixels of each intersection approach showing all traffic signal displays and equipment. Pictures shall include controller cabinet equipment in enough detail to clearly identify manufacture and model of major equipment.
4. Field Testing. Written notification from the Contractor and the equipment vendor of satisfactory field testing with corresponding material performance measurements, such as for detector loops and fiber optic systems (see Article 801.13). One hard copy of all contract required performance measurement testing shall also be provided.
5. Materials Approval. The material approval letter. A hard copy shall also be provided.
6. Manuals. Operation and service manuals of the signal controller and associated control equipment. One hard copy shall also be provided.
7. Cabinet Wiring Diagram and Cable Logs. Five (5) hard copies 11" x 17" of the cabinet wiring diagrams shall be provided along with electronic pdf and dgn files of the cabinet wiring diagram. Five hard copies of the cable logs and electronic excel files shall be provided with cable #, number of conductors and spares, connected device/signal head and intersection location.
8. Controller Programming Settings. The traffic signal controller's timings; backup timings; coordination splits, offsets, and cycles; TBC Time of Day, Week and Year Programs; Traffic Responsive Program, Detector Phase Assignment, Type and Detector Switching; and any other functions programmable from the keyboard. The controller manufacturer shall also supply a printed form, not to

exceed 11" x 17" for recording that data noted above. The form shall include a location, date, manufacturer's name, controller model and software version. The form shall be approved by the Engineer and a minimum of three (3) copies must be furnished at each turn-on. The manufacturer must provide all programming information used within the controller at the time of turn-on.

9. Warrantees and Guarantees. All manufacturer and contractor warrantees and guarantees required by Article 801.14.
10. GPS coordinate of traffic signal equipment as describe in the Record Drawings section herein.

Acceptance of the traffic signal equipment by the Department shall be based upon inspection results at the traffic signal "turn on", completeness of the required documentation and successful operation during a minimum 72 hour "burn-in" period following activation of the traffic signal. If approved, traffic signal acceptance shall be verbal at the "turn on" inspection followed by written correspondence from the Engineer. The Contractor shall be responsible for all traffic signal equipment and associated maintenance thereof until Departmental acceptance is granted.

All equipment and/or parts to keep the traffic signal installation operating shall be furnished by the Contractor. No spare traffic signal equipment is available from the Department.

All punch list work shall be completed within two (2) weeks after the final inspection. The Contractor shall notify the Electrical Maintenance Contractor to inspect all punch list work. Failure to meet these time constraints shall result in liquidated damage charges of \$500 per month per incident.

All cost of work and materials required to comply with the above requirements shall be included in the pay item bid prices, 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 shall be subject to removal and disposal at the Contractor's expense.

#### Record Drawings.

The requirements listed for Electrical Installation shall apply for Traffic Signal Installations in Article 801.16. Revise the 2<sup>nd</sup> paragraph of Article 801.16 of the Standard Specifications to read:

"When the work is complete, and seven days before the request for a final inspection, the reduced-size set of contract drawings, stamped "RECORD DRAWINGS", shall be submitted to the Engineer for review and approval and shall be stamped with the date and the signature of the Contractor's supervising Engineer or electrician. The record drawings shall be submitted in PDF format on CDROM as well as hardcopy for review and approval. If the contract consists of multiple intersections, each intersection shall be saved as an individual PDF file with TS# and location name in its file name.

In addition to the record drawings, copies of the final catalog cuts which have been Approved or Approved as Noted shall be submitted in PDF format along with the record drawings. The PDF files shall clearly indicate the pay item either by filename or PDF Table of Contents referencing the respective pay item number for multi-item PDF files. Specific part or model numbers of items which have been selected shall be clearly visible.”

As part of the record drawings, the Contractor shall inventory all traffic signal equipment, new or existing, on the project and record information in an Excel spreadsheet. The inventory shall include equipment type, model numbers, software manufacturer and version and quantities.

Add the following to Article 801.16 of the Standard Specifications:

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

- All Mast Arm Poles and Posts
- Traffic Signal Wood Poles
- Rail Road Bungalow
- UPS
- Handholes
- Conduit roadway crossings
- Controller Cabinets
- Communication Cabinets
- Electric Service Disconnect locations
- CCTV Camera installations
- Fiber Optic Splice Locations
- Conduit Crossings

Datum to be used shall be North American 1983.

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

- File shall be named: TSXXX-YY-MM-DD (i.e. TS22157\_15-01-01)
- Each intersection shall have its own file
- Row 1 should have the location name (i.e. IL 31 @ Klausen)
- Row 2 is blank

- Row 3 is the headers for the columns
- Row 4 starts the data
- Column A (Date) – should be in the following format: M/DD/YYYY
- Column B (Item) – as shown in the table below
- Column C (Description) – as shown in the table below
- Column D and E (GPS Data) – should be in decimal form, per the IDOT special provisions

Examples:

Date	Item	Description	Latitude	Longitude
01/01/2015	MP (Mast Arm Pole)	NEQ, NB, Dual, Combination Pole	41.580493	-87.793378
01/01/2015	HH (Handhole)	Heavy Duty, Fiber, Intersection, Double	41.558532	-87.792571
01/01/2015	ES (Electrical Service)	Ground mount, Pole mount	41.765532	-87.543571
01/01/2015	CC (Controller Cabinet)		41.602248	-87.794053
01/01/2015	RSC (Rigid Steel Crossing)	IL 31 east side crossing south leg to center HH at Klausen	41.611111	-87.790222
01/01/2015	PTZ (PTZ)	NEQ extension pole	41.593434	-87.769876
01/01/2015	POST (Post)		41.651848	-87.762053
01/01/2015	MCC (Master Controller Cabinet)		41.584593	-87.793378
01/01/2015	COMC (Communication Cabinet)		41.584600	-87.793432
01/01/2015	BBS (Battery Backup System)		41.558532	-87.792571
01/01/2015	CNCR (Conduit Crossing)	4-inch IL 31 n/o of Klausen	41.588888	-87.794440

Prior to the collection of data, the contractor shall provide a sample data collection of at least six data points of known locations to be reviewed and verified by the Engineer to be accurate within 1 foot. Upon verification, data collection can begin. Data collection can be made as construction progresses, or can be collected after all items are installed. If the data is unacceptable the contractor shall make corrections to the data collection equipment and or process and submit the data for review and approval as specified.

Accuracy. Data collected is to be mapping grade. A handheld mapping grade GPS device shall be used for the data collection. The receiver shall support differential correction and data shall have a minimum 1-foot accuracy after post processing.

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

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

Delete the last sentence of the 3<sup>rd</sup> paragraph of Article 801.16.

Locating Underground Facilities.

Revise Section 803 to the Standard Specifications to read:

IDOT traffic signal facilities are not part of any of the one-call locating service such as J.U.L.I.E or Digger. If this Contract requires the services of an Electrical Contractor, the Contractor shall be responsible at his/her own expense for locating existing IDOT electrical facilities prior to performing any work. If this Contract does not require the services of an Electrical Contractor, the Contractor may request one free locate for existing IDOT electrical facilities from the District One Electrical Maintenance Contractor prior to the start of any work. Additional requests may be at the expense of the Contractor. For non-IDOT signals, the Contractor shall coordinate with the agency owning the traffic signals for locating the existing electrical facilities. The location of underground traffic facilities does not relieve the Contractor of their responsibility to repair any facilities damaged during construction at their expense.

The exact location of all utilities shall be field verified by the Contractor before the installation of any components of the traffic signal system. For locations of utilities, locally owned equipment, and leased enforcement camera system facilities, the local Counties or Municipalities may need to be contacted: in the City of Chicago contact Digger at (312) 744-7000 and for all other locations contact J.U.L.I.E. at 1-800-892-0123 or 811.

Restoration of Work Area.

Add the following article to Section 801 of the Standard Specifications:

801.17 Restoration of work area. Restoration of the traffic signal work area shall be included in the related pay items such as foundation, conduit, handhole, underground raceways, etc. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded. All brick pavers disturbed in the work area shall be restored to their original configuration as directed by the Engineer. All damaged brick pavers shall be replaced with a comparable material approved by the Engineer. Restoration of the work area shall be included in the contract without any extra compensation allowed to the Contractor.

Bagging Signal Heads.

Light tan colored traffic and pedestrian signal reusable covers shall be used to cover dark/un-energized signal sections and visors. Covers shall be made of outdoor fabric with urethane coating for repelling water, have elastic fully sewn around the cover ends for a tight fit over the

visor, and have a minimum of two straps with buckles to secure the cover to the backplate. A center mesh strip allows viewing without removal for signal status testing purposes. Covers shall include a message indicating the signal is not in service.

### **TEMPORARY TRAFFIC SIGNAL TIMING**

Effective: May 22, 2002

Revised: July 1, 2015

890.02TS

#### **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.

**TEMPORARY TRAFFIC SIGNAL INSTALLATION**

Effective: May 22, 2002

Revised: January 1, 2017

890.01TS

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 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 aerially 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. The controller and cabinet shall be NEMA type designed for NEMA TS2 Type 1 operation. Controller and LED signal displays shall meet the applicable Standard Specifications and all other requirements in this TEMPORARY TRAFFIC SIGNAL INSTALLATION special provision.
  2. Work shall be according to Article 701.18(b) of the Standard Specifications except as noted herein.
  3. 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 non-operating equipment according to Article 701.11.

#### 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.

### **TRAFFIC SIGNAL PAINTING**

Effective: May 22, 2002

Revised: July 1, 2015

851.01TS

#### **Description.**

This work shall include surface preparation, powder coated finish application and packaging of new galvanized steel traffic signal mast arm poles and posts assemblies. All work associated with applying the painted finish shall be performed at the vendor's facility for the pole assembly or post or at a painting facility approved by the Engineer. Traffic signal mast arm shrouds and post bases shall also be painted the same color as the pole assemblies and posts.

#### **Surface Preparation.**

All weld flux and other contaminates shall be mechanically removed. The traffic mast arms and post assemblies shall be degreased, cleaned, and air dried to assure all moisture is removed.

#### **Painted Finish.**

All galvanized exterior surfaces shall be coated with a urethane or triglycidyl isocyanurate (TGIC) polyester powder to a dry film thickness of 2.0 mils. Prior to application, the surface shall be mechanically etched by brush blasting (Ref. SSPC-SP7) and the zinc coated substrate preheated to 450 °F for a minimum one (1) hour. The coating shall be electrostatically applied and cured by elevating the zinc-coated substrate temperature to a minimum of 400 °F.

The finish paint color shall be one of the vendor's standard colors and shall be as selected by the local agency responsible for paint costs. The Contractor shall confirm, in writing, the color selection with the local responsible agency and provide a copy of the approval to the Engineer and a copy of the approval shall be included in the material catalog submittal.

Painting of traffic signal heads, pedestrian signal heads and controller cabinets is not included in this pay item.

Any damage to the finish after leaving the vendor's facility shall be repaired to the satisfaction of the Engineer using a method recommended by the vendor and approved by the Engineer. If while at the vendor's facility the finish is damaged, the finish shall be re-applied at no cost to the contract.

Warranty.

The Contractor shall furnish in writing to the Engineer, the paint vendor's standard warranty and certification that the paint system has been properly applied.

Packaging.

Prior to shipping, the poles and posts shall be wrapped in ultraviolet-inhibiting plastic foam or rubberized foam.

Basis of Payment.

This work shall be paid for at the contract unit price EACH for PAINT NEW MAST ARM AND POLE, UNDER 40 FEET (12.19 METER), PAINT NEW MAST ARM AND POLE, 40 FEET (12.19 METER) AND OVER, PAINT NEW COMBINATION MAST ARM AND POLE, UNDER 40 FEET (12.19 METER), PAINT NEW COMBINATION MAST ARM AND POLE, 40 FEET (12.19 METER) AND OVER, or PAINT NEW TRAFFIC SIGNAL POST of the length specified, which shall be payment in full for painting and packaging the traffic signal mast arm poles and posts described above including all shrouds, bases and appurtenances.

**TRAFFIC SIGNAL POST**

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.

Add the following to Article 1077.01 of the Standard Specifications:

The Traffic Signal Post and associated ornamental bases shall be manufactured and/or supplied by Sternberg Vintage Lighting according to Catalog Number 6216FP5 / BCC / BK with a black finish. See Traffic Signal Post details provided in the plans.

**TRAFFIC SIGNAL BACKPLATE**

Effective: May 22, 2002

Revised: July 1, 2015

882.01TS

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.

**UNDERGROUND RACEWAYS**

Effective: May 22, 2002

Revised: July 1, 2015

810.02TS

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."

#### **UNINTERRUPTABLE POWER SUPPLY, SPECIAL**

Effective: January 1, 2013

Revised: May 19, 2016

862.01TS

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.

## **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 3.

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.

State of Illinois  
Department of Transportation  
Bureau of Local Roads and Streets

SPECIAL PROVISION  
FOR  
INSURANCE

Effective: February 1, 2007  
Revised: August 1, 2007

All references to Sections or Articles in this specification shall be construed to mean specific Section or Article of the Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation.

The Contractor shall name the following entities as additional insured under the Contractor's general liability insurance policy in accordance with Article 107.27:

Village of Wilmette

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The entities listed above and their officers, employees, and agents shall be indemnified and held harmless in accordance with Article 107.26.



# Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

## Division of Water Pollution Control Notice of Intent (NOI) for General Permit to Discharge Storm Water Associated with Construction Site Activities

*This fillable form may be completed online, a copy saved locally, printed and signed before it is submitted to the Permit Section at the above address.*

For Office Use Only

### OWNER INFORMATION

Permit No. ILR10 \_\_\_\_\_

Company/Owner Name: Village of Wilmette

Mailing Address: 1200 Wilmette Avenue

Phone: 847-853-7602

City: Wilmette State: IL Zip: 60091

Fax: 847-853-7705

Contact Person: Daniel Manis, Village Engineer E-mail: manisd@wilmette.com

Owner Type (select one) City

### CONTRACTOR INFORMATION

MS4 Community:  Yes  No

Contractor Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_ Phone: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ Fax: \_\_\_\_\_

### CONSTRUCTION SITE INFORMATION

Select One:  New  Change of information for: ILR10 \_\_\_\_\_

Project Name: Central Avenue Reconstruction County: Cook

Street Address: UPRR to Sheridan Road City: Wilmette IL Zip: 60091

Latitude: 42 4 36 Longitude: 87 41 50 34,35 42N 13E  
(Deg) (Min) (Sec) (Deg) (Min) (Sec) Section Township Range

Approximate Construction Start Date Jul 1, 2020 Approximate Construction End Date Aug 30, 2021

Total size of construction site in acres: 10.28

If less than 1 acre, is the site part of a larger common plan of development?

Yes  No

Fee Schedule for Construction Sites:  
Less than 5 acres - \$250  
5 or more acres - \$750

### STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Has the SWPPP been submitted to the Agency?  Yes  No

(Submit SWPPP electronically to: [epa.constilr10swppp@illinois.gov](mailto:epa.constilr10swppp@illinois.gov))

Location of SWPPP for viewing: Address: 1200 Wilmette Avenue City: Wilmette, IL

SWPPP contact information:

Inspector qualifications:

Contact Name: Daniel Manis P.E.

Phone: 847-853-7602 Fax: 847-853-7705 E-mail: manisd@wilmette.com

Project inspector, if different from above

Inspector qualifications:

Inspector's Name: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed \$50,000 for the violation and an additional civil penalty of not to exceed \$10,000 for each day during which the violation continues (415 ILCS 5/42) and may also prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

**TYPE OF CONSTRUCTION (select one)**

Construction Type Transportation

SIC Code: \_\_\_\_\_

Type a detailed description of the project:

The project is located in the Village of Wilmette, Cook County, IL on Central Avenue. The project limits extend from the Union Pacific Railroad, beginning at station 102+14.37, and extends in a easterly direction for a gross/net length of 5,625 feet (1.07 miles) to Sheridan Road at station 158+39.80, within the Village of Wilmette, Cook County. (42°04'36"N, 87°41'50"W). Township 42N, Range 13E, Sections 26, 27, 34 and 35. The project includes the reconstruction of Central Avenue, new water main and streetscaping in the downtown area.

**HISTORIC PRESERVATION AND ENDANGERED SPECIES COMPLIANCE**

Has the project been submitted to the following state agencies to satisfy applicable requirements for compliance with Illinois law on:

Historic Preservation Agency       Yes       No

Endangered Species                       Yes       No

**RECEIVING WATER INFORMATION**

Does your storm water discharge directly to:     Waters of the State    or     Storm Sewer

Owner of storm sewer system: Village of Wilmette

Name of closest receiving water body to which you discharge: MWRD Interceptor Sewer

Mail completed form to: Illinois Environmental Protection Agency  
Division of Water Pollution Control  
Attn: Permit Section  
Post Office Box 19276  
Springfield, Illinois 62794-9276  
or call (217) 782-0610  
FAX: (217) 782-9891

Or submit electronically to: [epa.constilr10swppp@illinois.gov](mailto:epa.constilr10swppp@illinois.gov)

I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage this 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. In addition, I certify that the provisions of the permit, including the development and implementation of a storm water pollution prevention plan and a monitoring program plan, will be complied with.

**Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))**

\_\_\_\_\_  
Owner Signature:

\_\_\_\_\_  
Date:

\_\_\_\_\_  
Printed Name:

\_\_\_\_\_  
Title:

## INSTRUCTIONS FOR COMPLETION OF CONSTRUCTION ACTIVITY NOTICE OF INTENT (NOI) FORM

Submit original, electronic or facsimile copies. Facsimile and/or electronic copies should be followed-up with submission of an original signature copy as soon as possible. Please write "copy" under the "For Office Use Only" box in the upper right hand corner of the first page.

***This fillable form may be completed online, a copy saved locally, printed and signed before it is submitted to the Permit Section at:***

Illinois Environmental Protection Agency  
Division of Water Pollution Control  
Permit Section  
Post Office Box 19276  
Springfield, Illinois 62794-9276  
or call (217) 782-0610

FAX: (217) 782-9891

Or submit electronically to: [epa.constilr10swppp@illinois.gov](mailto:epa.constilr10swppp@illinois.gov)

### **Reports must be typed or printed legibly and signed.**

Any facility that is not presently covered by the General NPDES Permit for Storm Water Discharges From Construction Site Activities is considered a new facility.

If this is a change in your facility information, renewal, etc., please fill in your permit number on the appropriate line, changes of information or permit renewal notifications do not require a fee.

### **NOTE: FACILITY LOCATION IS NOT NECESSARILY THE FACILITY MAILING ADDRESS, BUT SHOULD DESCRIBE WHERE THE FACILITY IS LOCATED.**

Use the formats given in the following examples for correct form completion.

	Example	Format
Section	12	1 or 2 numerical digits
Township	12N	1 or 2 numerical digits followed by "N" or "S"
Range	12W	1 or 2 numerical digits followed by "E" or "W"

For the Name of Closest Receiving Waters, do not use terms such as ditch or channel. For unnamed tributaries, use terms which include at least a named main tributary such as "Unnamed Tributary to Sugar Creek to Sangamon River."

Submission of initial fee and an electronic submission of Storm Water Pollution Prevention Plan (SWPPP) for Initial Permit prior to the Notice of Intent being considered complete for coverage by the ILR10 General Permits. Please make checks payable to: Illinois EPA at the above address.

Construction sites with less than 5 acres of land disturbance - fee is \$250.

Construction sites with 5 or more acres of land disturbance - fee is \$750.

SWPPP should be submitted electronically to: [epa.constilr10swppp@illinois.gov](mailto:epa.constilr10swppp@illinois.gov). When submitting electronically, use Project Name and City as indicated on NOI form.



Storm Water Pollution Prevention Plan



Route Central Avenue	Marked Route FAU 1296	Section Number 16-00199-00-RS
Project Number PWW7(474)	County Cook	Contract Number 61G42

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.

Signature 	Date 1/15/2020
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Print Name Daniel Manis, P.E.	Title Village Engineer	Agency Village of Wilmette
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Note: Guidance on preparing each section of BDE 2342 can be found in Chapter 41 of the IDOT Bureau of Design and Environment (BDE) Manual. Chapter 41 and this form also reference the IDOT Drainage Manual which should be readily available.

I. Site Description:

A. Provide a description of the project location; include latitude and longitude, section, town, and range:

The project is located in the Village of Wilmette, Cook County, IL on Central Avenue. The project limits extend from the Union Pacific Railroad, beginning at station 102+14.37, and extends in a easterly direction for a gross/net length of 5,625.43 feet (1.07 miles) to to Sheridan Road at station 158+39.80, within the Village of Wilmette, Cook County. (42°04'36"N, 87°41'50"W). Township 42N, Range 13E, Sections 26, 27, 34 and 35. The project includes the reconstruction of Central Avenue in the same footprint and the milling and resurfacing of Central Avenue. The project also consists of new 10"/8" water main and appurtenances and minor sewers connecting to existing mainline combination sewers and streetscape work.

B. Provide a description of the construction activity which is the subject of this plan. Include the number of construction stages, drainage improvements, in-stream work, installation, maintenance, removal of erosion measures, and permanent stabilization:

Earth excavation, proposed drainage, modernization of traffic signals, proposed lighting, proposed streetscaping, and landscaping. No in-stream work. Installation and maintenance of inlet filters and temporary seeding. Removal of all erosion measures shall not occur until permanent seeding/sodding has been installed.

C. Provide the estimated duration of this project:

18 months

D. The total area of the construction site is estimated to be 10.28 acres.

The total area of the site estimated to be disturbed by excavation, grading or other activities is 7.71 acres.

E. The following are weighted averages of the runoff coefficient for this project before and after construction activities are completed; see Section 4-102 of the IDOT Drainage Manual:

C=0.80

F. List all soils found within project boundaries; include map unit name, slope information, and erosivity:

Urban Land (533), Alfic Udarents, clayey-urban land-Elliott complex (2822A)

G. If wetlands were delineated for this project, provide an extent of wetland acreage at the site; see Phase I report:

There are no wetlands within the project limits.

H. Provide a description of potentially erosive areas associated with this project:

Stripping of topsoil as well as earthwork (earth excavation) for roadway reconstruction throughout the project limits is potentially erosive.

I. The following is a description of soil disturbing activities by stages, their locations, and their erosive factors (e.g., steepness of slopes, length of slopes, etc.):

Topsoil stripping throughout project increases potential erosion on steeper longitudinal slopes.

J. See the erosion control plans and/or drainage plans for this contract for information regarding drainage patterns, approximate slopes anticipated before and after major grading activities, locations where vehicles enter or exit the site and controls to prevent offsite sediment tracking (to be added after contractor identifies locations), areas of soil disturbance, the location of major structural and non-structural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands) , and locations where storm water is discharged to surface water including wetlands.

K. Identify who owns the drainage system (municipality or agency) this project will drain into:

Village of Wilmette

L. The following is a list of General NPDES ILR40 permittees within whose reporting jurisdiction this project is located:

Village of Wilmette

M. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. In addition, include receiving waters that are listed as Biologically Significant Streams by the Illinois Department of Natural Resources (IDNR). The location of the receiving waters can be found on the erosion and sediment control plans:

N. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes (i.e., 1:3 or steeper), highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc. Include any commitments or requirements to protect adjacent wetlands.

For any storm water discharges from construction activities within 50-feet of Waters of the U.S. (except for activities for water-dependent structures authorized by a Section 404 permit, describe: a) How a 50-foot undisturbed natural buffer will be provided between the construction activity and the Waters of the U.S. or b) How additional erosion and sediment controls will be provided within that area.

O. Per the Phase I document, the following sensitive environmental resources are associated with this project and may have the potential to be impacted by the proposed development. Further guidance on these resources is available in Section 41-4 of the BDE Manual.

303(d) Listed receiving waters for suspended solids, turbidity, or siltation.  
The name(s) of the listed water body, and identification of all pollutants causing impairment:

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:

Provide a description of the location(s) of direct discharge from the project site to the 303(d) water body:

Provide a description of the location(s) of any dewatering discharges to the MS4 and/or water body:

Applicable Federal, Tribal, State, or Local Programs

Floodplain

Historic Preservation

Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity or siltation

TMDL (fill out this section if checked above)

The name(s) of the listed water body:

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:

If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet that allocation:

Threatened and Endangered Species/Illinois Natural Areas (INAI)/Nature Preserves

Other

Wetland

P. The following pollutants of concern will be associated with this construction project:

Antifreeze / Coolants

Concrete

Concrete Curing Compounds

Concrete Truck Waste

Fertilizers / Pesticides

Paints

Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids)

Soil Sediment

Solid Waste Debris

Solvents

Waste water from cleaning construction equipments

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 Section 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"/> Erosion Control Blanket / Mulching | <input type="checkbox"/> Temporary Turf (Seeding, Class 7) |
| <input type="checkbox"/> Geotextiles                                   | <input type="checkbox"/> Temporary Mulching                |
| <input checked="" type="checkbox"/> Permanent Seeding                  | <input type="checkbox"/> Vegetated Buffer Strips           |
| <input type="checkbox"/> Preservation of Mature Seeding                | <input type="checkbox"/> Other (Specify) _____             |
| <input checked="" type="checkbox"/> Protection of Trees                | <input type="checkbox"/> Other (Specify) _____             |
| <input checked="" type="checkbox"/> Sodding                            | <input type="checkbox"/> Other (Specify) _____             |
| <input checked="" type="checkbox"/> Temporary Erosion Control Seeding  | <input type="checkbox"/> Other (Specify) _____             |

Describe how the stabilization practices listed above will be utilized during construction:

Where possible existing vegetation shall be preserved and left in an undisturbed condition. Temporary fence will be used to protect trees. Temporary seeding will be placed every 7 days to erodible areas.

Describe how the stabilization practices listed above will be utilized after construction activities have been completed:

Topsoil and seeding with erosion control blanket/sodding will be the permanent restoration. Seeding, Class 2A and Seeding, Class 1A will be used.

**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.

- |  |  |
|--|--|
| <input type="checkbox"/> Aggregate Ditch           | <input type="checkbox"/> Stabilized Construction Exits |
| <input type="checkbox"/> Concrete Revetment Mats   | <input type="checkbox"/> Stabilized Trench Flow        |
| <input type="checkbox"/> Dust Suppression          | <input type="checkbox"/> Slope Mattress                |
| <input type="checkbox"/> Dewatering Filtering      | <input type="checkbox"/> Slope Walls                   |
| <input type="checkbox"/> Gabions                   | <input type="checkbox"/> Temporary Ditch Check         |
| <input type="checkbox"/> In-Stream or Wetland Work | <input type="checkbox"/> Temporary Pipe Slope Drain    |

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Level Spreaders                         | <input checked="" type="checkbox"/> Temporary Sediment Basin |  |
| <input type="checkbox"/> Paved Ditch                             | <input type="checkbox"/> Temporary Stream Crossing           |  |
| <input type="checkbox"/> Permanent Check Dams                    | <input type="checkbox"/> Turf Reinforcement Mats             |  |
| <input type="checkbox"/> Perimeter Erosion Barrier               | <input type="checkbox"/> Other (Specify) _____               |  |
| <input type="checkbox"/> Permanent Sediment Basin                | <input type="checkbox"/> Other (Specify) _____               |  |
| <input type="checkbox"/> Retaining Walls                         | <input type="checkbox"/> Other (Specify) _____               |  |
| <input type="checkbox"/> Riprap                                  | <input type="checkbox"/> Other (Specify) _____               |  |
| <input type="checkbox"/> Rock Outlet Protection                  | <input type="checkbox"/> Other (Specify) _____               |  |
| <input type="checkbox"/> Sediment Trap                           | <input type="checkbox"/> Other (Specify) _____               |  |
| <input checked="" type="checkbox"/> Storm Drain Inlet Protection | <input type="checkbox"/> Other (Specify) _____               |  |

Describe how the structural practices listed above will be utilized during construction:

Install inlet filters in open grate catch basins and inlets to prevent erodible debris from entering sewer system. Temporary sediment basins will be used for any dewatering of trenches with sediment.

Describe how the structural practices listed above will be utilized after construction activities have been completed:

**D. Treatment Chemicals**

Will polymer flocculants or treatment chemicals be utilized on this project:  Yes  No

If yes above, identify where and how polymer flocculants or treatment chemicals will be utilized on this project.

**E. Permanent (i.e., Post-Construction) Storm Water Management Controls:** Provided below is a description of measures that will be installed during the construction process to control volume and pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.

- Such practices may include but are not limited to: storm water detention structures (including wet ponds), storm water retention structures, flow attenuation by use of open vegetated swales and natural depressions, infiltration of runoff on site, and sequential systems (which combine several practices).

The practices selected for implementation were determined based on the technical guidance in Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT BDE Manual. If practices other than those discussed in Chapter 41 are selected for implementation or if practices are applied to situations different from those covered in Chapter 41, the technical basis for such decisions will be explained below.

- Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., maintenance of hydrologic conditions such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of permanent storm water management controls:

Vegetation/Trees/Shrubs

**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 IEPA'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:

**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 cons
  
- 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 operation
- Time frame for other significant long-term operations or activities that may plan non-storm water discharges as dewatering, grinding, etc
- Permanent stabilization activities for each area of the project

2. During the pre-construction meeting, 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:

- Temporary Ditch Checks - Identify what type and the source of Temporary Ditch Checks that will be installed as part of the project. The installation details will then be included with the SWPPP.
- Vehicle Entrances and Exits - Identify type and location of stabilized construction entrances and exits to be used and how they will be maintained.
- Material Delivery, Storage and Use - Discuss where and how materials including chemicals, concrete curing compounds, petroleum products, etc. will be stored for this project.
- Stockpile Management - Identify the location of both on-site and off-site stockpiles. Discuss what BMPs will be used to prevent pollution of storm water from stockpiles.
- Waste Disposal - Discuss methods of waste disposal that will be used for this project.
- Spill Prevention and Control - Discuss steps that will be taken in the event of a material spill (chemicals, concrete curing compounds, petroleum, etc.)
- Concrete Residuals and Washout Wastes - Discuss the location and type of concrete washout facilities to be used on this project and how they will be signed and maintained.
- Litter Management - Discuss how litter will be maintained for this project (education of employees, number of dumpsters, frequency of dumpster pick-up, etc.).
- Vehicle and Equipment Fueling - Identify equipment fueling locations for this project and what BMPs will be used to ensure containment and spill prevention.
- Vehicle and Equipment Cleaning and Maintenance - Identify where equipment cleaning and maintenance locations for this project and what BMPs will be used to ensure containment and spill prevention.
- Dewatering Activities - Identify the controls which will be used during dewatering operations to ensure sediments will not leave the construction site.
- Polymer Flocculants and Treatment Chemicals - Identify the use and dosage of treatment chemicals and provide the Resident Engineer with Material Safety Data Sheets. Describe procedures on how the chemicals will be used and identify who will be responsible for the use and application of these chemicals. The selected individual must be trained on the established procedures.
- Additional measures indicated in the plan.

### III. Maintenance:

When requested by the Contractor, the Resident Engineer will provide general maintenance guides (e.g., IDOT Erosion and Sediment Control Field Guide) to the Contractor for the practices associated with this project. Describe how all items will be checked for structural integrity, sediment accumulation and functionality. Any damage or undermining shall be repaired immediately. Provide specifics on how repairs will be made. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. It will be the Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

Seeding - all erodible bare earth areas will be temporarily seeded on a weekly basis.

Erosion Control - Any areas which fail will be repaired immediately.  
In concentrated flow such as erosion control blanket and other erosion controls will be inspected after every runoff event and maintained as needed.  
Inlet filters will be inspected after every runoff event and maintained as needed.

#### **IV. Inspections:**

Qualified personnel shall inspect disturbed areas of the construction site including Borrow, Waste, and Use Areas, which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site using IDOT Storm Water Pollution Prevention Plan Erosion Control Inspection Report, BC 2259. Such inspections shall be conducted at least once every seven (7) calendar days and within twenty-four (24) hours of the end of a storm or by the end of the following business or work day that is 0.5 inch or greater or equivalent snowfall.

Inspections may be reduced to once per month when construction activities have ceased due to frozen conditions. Weekly inspections will recommence when construction activities are conducted, or if there is 0.5" or greater rain event, or a discharge due to snowmelt occurs.

If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer shall notify the appropriate IEPA Field Operations Section office by email at: [epa.swnoncomp@illinois.gov](mailto:epa.swnoncomp@illinois.gov), telephone or fax within twenty-four (24) hours of the incident. The Resident Engineer shall then complete and submit an "Incidence of Non-Compliance" (ION) report for the identified violation within five (5) days of the incident. The Resident Engineer shall use forms provided by IEPA and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of non-compliance shall be signed by a responsible authority in accordance with Part VI. G of the Permit ILR10.

The Incidence of Non-Compliance shall be mailed to the following address:

Illinois Environmental Protection Agency  
Division of Water Pollution Control  
Attn: Compliance Assurance Section  
1021 North Grand East  
Post Office Box 19276  
Springfield, Illinois 62794-9276

#### **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 Contractor/subcontractor completing this form.

Route Central Avenue	Marked Route FAU 1296	Section Number 16-00199-00-RS
Project Number PWW7(474)	County Cook	Contract Number 61G42

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. ILR 10 that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Additionally, 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

Signature		Date	
[Signature Box]		[Date Box]	
Print Name		Title	
[Print Name Box]		[Title Box]	
Name of Firm		Phone	
[Name of Firm Box]		[Phone Box]	
Street Address	City	State	Zip Code
[Street Address Box]	[City Box]	[State Box]	[Zip Code Box]

Items which this Contractor/subcontractor will be responsible for as required in Section II.G. of SWPPP



A Subsidiary of GZA



To: Mr. Todd S. Bright, P.E. – Senior Vice President – TranSystems Corporation

From: Jeremy J. Reynolds, P.G. - Huff & Huff, Inc.

Date: November 5, 2019

Re: CCDD LPC-663 Central Avenue Streetscape Improvement Project

GEOTECHNICAL

ENVIRONMENTAL

ECOLOGICAL

WATER

CONSTRUCTION  
MANAGEMENT

915 Harger Road  
Suite 330  
Oak Brook, IL 60523  
T: 630.684.9100  
F: 630.684.9120  
www.huffnhuff.com  
www.gza.com

Huff & Huff, Inc. provided services in support of a Form LPC-663 for the Central Avenue Streetscape Improvement Project. Thirteen (13) potentially impacted properties (PIPs) were determined to exist near the Project Area, which consists primarily along Central Avenue from Green Bay Road to Sheridan Road in Wilmette, Illinois (Project Corridor). Therefore, the LPC-663 form was utilized, and on September 23<sup>rd</sup> and 24<sup>th</sup>, 2019, twenty-five (25) soil borings were advanced within the Project Area in proximity to the PIPs. Soils were screened in the field using a photoionization detector (PID). Soil samples were submitted for the analysis of one or more of the following contaminants of concern associated with the identified PIPs: volatile organic compounds (VOCs); benzene, ethylbenzene, toluene, total xylene (BTEX, a subset of VOCs); polynuclear aromatic hydrocarbons (PNAs, a subset of SVOCs); total RCRA Metals; pesticides; herbicides; and pH.

Thirty-nine samples were submitted for soil pH analysis and are considered representative of the Project Corridor. Samples CW-5 (1-3), CW-5 (3-5), CW-5 (5-7), CW-6 (5-7), CW-8 (5-7), CW-10 (1-3), CW-10 (3-5), C-2 (5-7), C-5 (1-3), C-5 (5-7), C-5 (7-10), and C-14 (3-5) had pH levels that exceeded the acceptable range of 6.25 to 9.0. This will preclude these areas from being eligible for CCDD disposal. Additional sampling analysis was done on borings in the vicinity with results within the required range for CCDD disposal. The remaining pH results ranged from 7.72 to 8.98, within the acceptable 6.25 to 9.00 range. Therefore, remaining soils from this Project Corridor are considered to achieve the CCDD soil pH criteria.

The VOC (and subset BTEX) results are below detection limits, achieving the Tier 1 ROs and the MACs.

The samples had PNA concentrations below the detection limits, achieving the Tier 1 ROs and the MACs for CCDD disposal.

Soil sample C-8 (3-5) contained arsenic (14.7 mg/kg) at a concentration that exceeded the MAC value (13 mg/kg) and Tier 1 ROs for Residential and Industrial/Commercial ingestion (13 mg/kg). This exceedance will preclude this area from being eligible for CCDD disposal. Sample C-8 (5-7) was analyzed for total arsenic. The result for this sample was below the Tier 1 RO and MAC values.

Soil samples C-5 (5-7) and C-8 (5-7) contained chromium (21.6 mg/kg and 27.2 mg/kg, respectively) at a concentration that exceeded the default MAC value (21 mg/kg). Samples C-5 (5-7) and C-8 (5-7) were subsequently analyzed for TCLP chromium which had results below



the lab detection limit, achieving the MAC. Based on the TCLP chromium results, chromium is considered to achieve the MAC. Table 3-10 presents the soil TCLP chromium result compared to the MAC.

Soil sample C-8 (5-7) contained selenium (2.5 mg/kg) at a concentration that exceeded the default MAC value (1.3 mg/kg). Sample C-8 (5-7) was subsequently analyzed for TCLP selenium which had results below the lab detection limit, achieving the MAC. Based on the TCLP selenium results, selenium is considered to achieve the MAC. Table 3-10 presents the soil TCLP selenium result compared to the MAC.

The pesticides and herbicides results are below detection limits for the samples analyzed, achieving the Tier 1 ROs and the MACs.

Based on detections of arsenic that exceeded the MAC in the soil at C-8 (3-5), an exclusion zone has been established around this boring location. The soil generated from this boring are **NOT** certified for CCDD disposal but must be managed as a non-special waste with final disposition at a Subtitle D Sanitary Landfill.

The CCDD exclusion zones along Central Avenue and Wilmette Avenue, are depicted on Figure 4-1. Based on concentrations of arsenic that exceeded the MAC in the soil at C-8 (3-5), an exclusion zone has been established around this boring location. The soil generated from this boring are **NOT** certified for CCDD disposal but must be managed as a non-special waste with final disposition at a Subtitle D Sanitary Landfill. The CCDD exclusion zones along Central Avenue and Wilmette Avenue, are depicted on Figure 4-1. *Soils within the areas characterized by C-8 (3-5) are considered to be (a)(5) soils per Article 669.05 of IDOT Standard Specifications for Road and Bridge Construction, which must be managed and disposed of off-site as non-special waste or special waste.*

*Based on the pH levels that exceeded the MAC in the soil at CW-5 (1-3), CW-5 (3-5), CW-5 (5-7), CW-6 (5-7), CW-8 (5-7), CW-10 (1-3), CW-10 (3-5), C-2 (5-7), C-5 (1-3), C-5 (5-7), C-5 (7-10), and C-14 (3-5) exclusion zones have been established around these borings. The soil generated from these areas are **NOT** certified for CCDD and are considered to be 669.05 (b)(1) soils, which may be utilized within the construction limits or managed and disposed of off-site as “uncontaminated soil” according to Article 202.03. However, the excavated soil cannot be taken to a CCDD facility or uncontaminated soil fill operation.*

In addition, samples were not collected from within the railroad right-of-way. Soils generated from within the railroad right-of-way will be considered ineligible for CCDD disposal due to historic rail use. *Soils within the areas characterized by railroad right-of-way are considered to be (a)(5) soils per Article 669.05 of IDOT Standard Specifications for Road and Bridge Construction, which must be managed and disposed of off-site as non-special waste or special waste.*

Should soils be encountered within the areas identified as CCDD acceptable that are not representative of the soils encountered during the PSI boring activities (odors, staining, or debris), those soils would need to be reassessed prior to disposal at a “clean fill” facility.

#### **CCDD Exclusion Areas:**

- **CW-5 and C-5 (0-12 feet bgs, or bottom of excavation):** CW-5 (1-3), CW-5 (3-5), CW-5 (5-7), C-5 (1-3), C-5 (5-7), and C-5 (7-10) exceeded the MACs for pH. The area is defined as from the midpoint between boring C-5 and C-4, approximately 80 feet east of the centerline of Wilmette Avenue and Central Avenue, and



extends approximately 130 feet east to the midpoint between CW-5 and CW-6, located approximately 210 feet east of the centerline of Wilmette Avenue and Central Avenue. The exclusion zone also extends from the southern extent of the Project Area limits and extends approximately 40 feet north to the centerline of Central Avenue. *These soils are considered to be 669.05 (b)(1) soils.*

- **CW-6 (5-8 feet bgs, or bottom of excavation)**: CW-6 (5-7) exceeded the MACs for pH. The area is defined as from the midpoint between boring CW-5 and CW-6, approximately 210 feet east of the centerline of Wilmette Avenue and Central Avenue, and extends approximately 70 feet east to the midpoint between CW-6 and CW-9, located approximately 280 feet east of the centerline of Wilmette Avenue and Central Avenue. The exclusion zone also extends from the southern extent of the Project Area limits and extends approximately 40 feet north to the centerline of Central Avenue. *These soils are considered to be 669.05 (b)(1) soils.*
- **CW-8 (5-8 feet bgs, or bottom of excavation)**: CW-8 (5-7) exceeded the MACs for pH. The area is defined as from the midpoint between boring CW-7 and CW-8, approximately 280 feet east of the centerline of Wilmette Avenue and Central Avenue, and extends approximately 70 feet east to the midpoint between CW-8 and CW-10, located approximately 350 feet east of the centerline of Wilmette Avenue and Central Avenue. The exclusion zone also extends from the northern extent of the Project Area limits and extends approximately 35 feet south to the centerline of Central Avenue. *These soils are considered to be 669.05 (b)(1) soils.*
- **CW-10 (0-5 feet bgs)**: CW-10 (1-3) and CW-10 (3-5) exceeded the MACs for pH. The area is defined as from the midpoint between boring CW-8 and CW-10, approximately 350 feet east of the centerline of Wilmette Avenue and Central Avenue, and extends approximately 90 feet east to the midpoint between CW-10 and C-6, located approximately 110 feet west of the centerline of 11<sup>th</sup> Street and Central Avenue. The exclusion zone also extends from the northern extent of the Project Area limits and extends approximately 35 feet south to the centerline of Central Avenue. *These soils are considered to be 669.05 (b)(1) soils.*
- **C-2 (5-12 feet bgs, or bottom of excavation)**: C-2 (5-7) exceeded the MACs for pH. The area is defined as from the midpoint between boring CW-4 and C-2, approximately 90 feet west of the centerline of Wilmette Avenue and Central Avenue, and extends east to the centerline of Wilmette Avenue. The area is also defined along Wilmette Avenue from the midpoint between CW-11 and C-2, approximately 70 feet north of the Centerline of Central Avenue and extends approximately 135 feet south to the midpoint between C-2 and CW-12. *These soils are considered to be 669.05 (b)(1) soils.*
- **C-8 (0-5 feet bgs)**: C-8 (3-5) exceeded the MACs for total arsenic. The area is defined as from the midpoint between boring C-9 and C-8, approximately 30 feet west of the centerline of 10<sup>th</sup> Street and Central Avenue, and extends approximately 180 feet west to the midpoint between C-8 and C-7, located approximately 210 feet west of the centerline of 10<sup>th</sup> Street and Central Avenue. The exclusion zone also extends from the northern extent of the Project Area limits, and extends to the southern extent of the Project Limits. *These soils are considered to be 669.05 (a)(5) soils.*
- **C-14 (3-8 feet bgs)**: C-14 (3-5) exceeded the MACs for pH. The area is defined as from the midpoint between boring C-13 and C-14, approximately 30 feet east of the centerline of 3<sup>rd</sup> Street and Central Avenue, and extends to the eastern most extent of the Project Corridor. The exclusion zone also extends



from the northern extent of the Project Area limits, and extends to the southern extent of the Project Limits. *These soils are considered to be 669.05 (b)(1) soils.*

- **Railroad Right-of-Way (0-8 feet bgs, or bottom of excavation)**: Samples were not collected from within the railroad right-of-way. Soils generated from within the railroad right-of-way will be considered ineligible for CCDD disposal due to historic rail use. The area is defined as the railroad right-of-way limits within the Project Corridor extending from the western most extent of the Project Corridor limits to the eastern extent of the railroad right-of-way approximately 260 feet west of the centerline of 12<sup>th</sup> Street. The exclusion zone also extends to the northern and southern extent of the Project Corridor.

The remaining soil samples achieve applicable remedial objectives and the maximum allowable concentration (MAC) values for determining suitability for off-site final disposition at a clean construction or demolition debris (CCDD) facility using the attached LPC-663 form. Refer to the attached narrative for a full description of the Project Area, identified sites, and the analytical testing.

Should conditions within the Project Area change, such as unusual staining, odors, or if loads become rejected, additional analytical assessment may be required for final disposition of spoils from this Project Area. If you have any questions regarding this matter, please contact us at 630-684-9100.

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Jeremy J. Reynolds, P.G.

Associate Principal



3.3 SOIL PH RESULTS

Table 3-11 presents the soil pH results. Soil samples were preserved and transferred to First Environmental Laboratories, Inc., under Chain-of-Custody for analysis. The laboratory analytical reports are provided in Appendix D. CCDD regulations require soil pH between 6.25 and 9.00 to be acceptable for disposal at a CCDD or soil-only facility. Thirty-seven samples were submitted for soil pH analysis and are considered representative of the Project Corridor. Samples CW-5 (1-3), CW-5 (3-5), CW-5 (5-7), CW-6 (5-7), CW-8 (5-7), CW-10 (1-3), CW-10 (3-5), C-2 (5-7), C-5 (1-3), C-5 (5-7), C-5 (7-10), and C-14 (3-5) had pH levels that exceeded the acceptable range of 6.25 to 9.0. This will preclude these areas from being eligible for CCDD disposal. Additional sampling analysis was done on borings in the vicinity with results within the required range for CCDD disposal. The remaining pH results ranged from 7.72 to 8.98, within the acceptable 6.25 to 9.00 range. Therefore, remaining soils from this Project Corridor are considered to achieve the CCDD soil pH criteria.

**Table 3-11 Soil pH Results Compared to the Soil pH Requirement for CCDD Disposal**

Soil Boring ID	Depth, ft	Soil pH Result	Soil Boring ID	Depth, ft	Soil pH Result
CW-1	7-8	8.69	C-1	1-3	8.1
CW-2	3-5	8.84	C-2	3-5	8.65
CW-3	5-7	8.85	<b>C-2</b>	<b>5-7</b>	<b>9.69</b>
CW-4	1-3	8.82	C-4	1-3	8.44
<b>CW-5</b>	<b>1-3</b>	<b>9.31</b>	C-4	3-5	8.61
<b>CW-5</b>	<b>3-5</b>	<b>9.19</b>	C-4	5-7	8.68
<b>CW-5</b>	<b>5-7</b>	<b>9.30</b>	<b>C-5</b>	<b>1-3</b>	<b>9.22</b>
CW-6	3-5	8.65	<b>C-5</b>	<b>5-7</b>	<b>9.29</b>
<b>CW-6</b>	<b>5-7</b>	<b>9.28</b>	<b>C-5</b>	<b>7-10</b>	<b>9.2</b>
CW-7	1-3	8.88	C-6	5-7	8.98
CW-7	5-7	8.7	C-7	3-5	8.79
CW-8	3-5	7.72	C-8	3-5	8.02
<b>CW-8</b>	<b>5-7</b>	<b>9.15</b>	C-9	5-7	8.37
CW-9	3-5	8.9	C-10	1-3	8.58
<b>CW-10</b>	<b>1-3</b>	<b>9.24</b>	C-11	5-7	8.47
<b>CW-10</b>	<b>3-5</b>	<b>9.26</b>	C-12	5-7	8.98
CW-10	5-7	8.78	C-13	1-3	8.44
CW-11	3-4	8.59	C-14	1-3	8.81
CW-12	1-3	8.42	<b>C-14</b>	<b>3-5</b>	<b>9.33</b>

CCDD Soil pH Requirement: between 6.25 - 9.0

**BOLD** pH result outside of required range.



# Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

## Uncontaminated Soil Certification by Licensed Professional Engineer or Licensed Professional Geologist for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

### I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: Central Avenue Streetscape Improvement Project Office Phone Number, if available: 847-853-7623

Physical Site Location (address, including number and street):

Central Avenue from Green Bay Road to Sheridan Road

City: Wilmette State: IL Zip Code: 60091

County: Cook Township: Evanston

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 42.07666 Longitude: - 87.69975

(Decimal Degrees)

(-Decimal Degrees)

Identify how the lat/long data were determined:

GPS  Map Interpolation  Photo Interpolation  Survey  Other

ISGS Public Land Survey System. Lat/lon above refer to the approximate center of the Project Area

IEPA Site Number(s), if assigned: BOL: \_\_\_\_\_ BOW: \_\_\_\_\_ BOA: \_\_\_\_\_

Approximate Start Date (mm/dd/yyyy): \_\_\_\_\_ Approximate End Date (mm/dd/yyyy): \_\_\_\_\_

Estimated Volume of debris (cu. Yd.): \_\_\_\_\_

### II. Owner/Operator Information for Source Site

Site Owner

Name: Village of Wilmette

Street Address: 1200 Wilmette Avenue

PO Box: \_\_\_\_\_

City: Wilmette State: IL

Zip Code: 60091 Phone: 847-853-7623

Contact: Jorge Cruz, P.E. Asst. Village Engineer

Email, if available: cruzj@wilmette.com

Site Operator

Name: \_\_\_\_\_

Street Address: \_\_\_\_\_

PO Box: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_

Zip Code: \_\_\_\_\_ Phone: \_\_\_\_\_

Contact: \_\_\_\_\_

Email, if available: \_\_\_\_\_

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed \$50,000 for the violation and an additional civil penalty of not to exceed \$10,000 for each day during which the violation continues (415 ILCS 5/42). This form has been approved by the Forms Management Center.

Uncontaminated Soil Certification

**III. Basis for Certification and Attachments**

For each item listed below, reference the attachments to this form that provide the required information.

- a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a):

A database review was completed in the 2017 H&H PESA and 2019 PESA Update for the Project Area, which consists of residential and commercial properties. Twelve (12) potentially impacted properties (PIPs) were identified in connection with the Project Area through the database review and site visit. Refer to the attachments for additional information.

- b. Analytical soil testing results to show that soil chemical constituents comply with the maximum allowable concentrations established pursuant to 35 Ill. Adm. Code Part 1100, Subpart F and that the soil pH is within the range of 6.25 to 9.0, including the documentation of chain of custody control, a copy of the lab analysis; the accreditation status of the laboratory performing the analysis; and certification by an authorized agent of the laboratory that the analysis has been performed in accordance with the Agency's rules for the accreditation of environmental and the scope of the accreditation [35 Ill. Adm. Code 1100.201 (g), 1100.205(a), 1100.610]:

25 soil borings were advanced in the Project Area on Sept. 23-24, 2019. Samples were analyzed for one or more of: VOCs, BTEX, PNAs, RCRA Metals, Pest./Herb. and pH. Samples at CW-5, CW-6, CW-8, CW-10, C-2, C-5, C-14 had detections pH or arsenic that exceeded the MACs. Remaining results achieve the CCDD requirements. See PSI Report dated November 7, 2019 listed in the special provision for Additional Reports for complete information and recommendations additional information.

**IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist**

I, Jeremy J. Reynolds, P.G. (name of licensed professional engineer or geologist) certify under penalty of law that the information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete. In accordance with the Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I certify that the soil from this site is uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. In addition, I certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. All necessary documentation is attached.

**Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))**

Company Name: Huff & Huff, Inc.  
 Street Address: 915 Harger Rd Suite 330  
 City: Oak Brook State: IL Zip Code: 60523  
 Phone: (630) 684-9100

Jeremy J. Reynolds, P.G.  
Printed Name:

[Signature]  
Licensed Professional Engineer or  
Licensed Professional Geologist Signature:

11/7/19  
Date:

P.E. or L.P.G. Seal

**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**

1021 North Grand Avenue, East; Post Office Box 19276; Springfield, IL 62794-9276

Division of Public Water Supplies

Telephone 217/782-1724

**PUBLIC WATER SUPPLY CONSTRUCTION PERMIT**

SUBJECT: WILMETTE (0313300)

Permit Issued to:  
Village of Wilmette  
1200 Wilmette Avenue  
Wilmette, IL 60091

PERMIT NUMBER: 0727-FY2020

DATE ISSUED: March 6, 2020  
PERMIT TYPE: Water Main Extension

The issuance of this permit is based on plans and specifications prepared by the engineers/architects indicated and are identified as follows. This permit is issued for the construction and/or installation of the public water supply improvements described in this document, in accordance with the provisions of the "Environmental Protection Act", Title IV, Sections 14 through 17, and Title X, Sections 39 and 40, and is subject to the conditions printed on the last page of this permit and the ADDITIONAL CONDITIONS listed below.

FIRM: Trans Systems  
NUMBER OF PLAN SHEETS: 35  
TITLE OF PLANS: "FAU 1296 (Central Avenue) Union Pacific Railroad to Sheridan Road Reconstruction"

PROPOSED IMPROVEMENTS:

\*\*\* Installation of approximately 979 lineal feet of 10 inch diameter, 4,807 lineal feet of eight (8) inch diameter water main. \*\*\*

ADDITIONAL CONDITIONS:

1. A lead informational notice must be given to each potentially affected residence at least 14 days prior to the permitted water main work. The notification must satisfy the requirements of Section 17.11 of the Environmental Protection Act. If notification is required to a residence that is a multi-dwelling building, posting at the primary entrance way to the building shall be sufficient. If the community water supply serves a population less than 3,301, alternative notification means may be utilized in lieu of an individual written notification. Refer to Section 17.11 of the Act for alternative notification requirements. Enclosed is suggested language for the notice. If this project involves water service to a significant proportion of non-English speaking consumers, the notification must contain information in the appropriate language regarding the importance and how to obtain a translated copy. The Responsible Operator in Charge of the community water system is responsible for preparing the notice. A copy of the notice used must be submitted to the Agency with the Application for Operating Permit.
2. All water mains shall be satisfactorily disinfected prior to use pursuant to Ill. Adm. Code, Title 35, Subtitle F, Section 602.310. Two consecutive sets of samples collected at least 24 hours apart must show the absence of coliform bacteria. The samples must be collected from every 1,200 feet of new water main along each branch and from the end of the line. An operating permit must be obtained before the project is placed in service.

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS  
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Agency Act (Illinois Compiled Statutes, Chapter 111-1/2, Section 1039) grants the Environmental Protection Agency authority to impose conditions on permits which it issues.

These standard conditions shall apply to all permits which the Agency issues for construction or development projects which require permits under the Division of Water Pollution Control, Air Pollution Control, Public Water Supplies and Land and Noise Pollution Control. Special conditions may also be imposed by the separate divisions in addition to these standard conditions.

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year after this date of issuance unless construction or development on this project has started on or prior to that date.
2. The construction or development of facilities covered by this permit shall be done in compliance with applicable provisions of Federal laws and regulations, the Illinois Environmental Protection Act, and Rules and Regulations adopted the Illinois Pollution Control Board.
3. There shall be no deviations from the approved plans and specifications unless a written request for modification of the project, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.
4. The permittee shall allow any agent duly authorized by the Agency upon the presentation of credentials:
  - a. to enter at reasonable times the permittee's premises where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit.
  - b. to have access to and copy at reasonable times any records required be kept under the terms and conditions of this permit.
  - c. to inspect at reasonable times, including during any hours or operation of equipment constructed or operated under this permit, such equipment or monitoring methodology or equipment required to be kept, used, operated, calibrated and maintained under this permit.
  - d. to obtain and remove at reasonable times samples of any discharge or emission of pollutants.
  - e. to enter at reasonable times and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.
5. The issuance of this permit:
  - a. shall not be considered as in any manner affecting the title of the permits upon which the permitted facilities are to be located;
  - b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;
  - c. does not release the permittee from compliance with the other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;
  - d. does not take into consideration or attest to the structural stability of any units or parts of the project;
  - e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability directly or indirectly for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.
6. These standard conditions shall prevail unless modified by special conditions.
7. The Agency may file a complaint with Board of modification, suspension or revocation of a permit:
  - a. upon discovery that the permit application misrepresentation or false statements or that all relevant facts were not disclosed; or
  - b. upon finding that any standard or special conditions have been violated; or
  - c. upon any violation of the Environmental Protection Act or any Rules or Regulation effective thereunder as a result of the construction or development authorized by this permit.

## Lead Informational Notice

### IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Dear Water Customer:

Today's Date: \_\_\_\_\_

Our water system will soon begin a water line maintenance and/or construction project that may affect the lead content of your potable water supply. Lead, a metal found in natural deposits, is harmful to human health, especially young children. The most common exposure to lead is swallowing or breathing in lead paint chips and dust. However, lead in drinking water can also be a source of lead exposure. In the past, lead was used in some water service lines and household plumbing materials. Lead in water usually occurs through corrosion of plumbing products containing lead; however, disruption (construction or maintenance) of lead service lines may also temporarily increase lead levels in the water supply. This disruption may be sometimes caused by water main maintenance/replacement. As of June 19, 1986, new or replaced water serviced lines and new household plumbing materials could not contain more than 8% lead. Lead content was further reduced on January 4, 2014, when plumbing materials must now be certified as "lead-free" to be used (weighted average of wetted surface cannot be more than 0.25% lead).

The purpose of this notice is for informational purposes only. While it's not known for certain whether or not this particular construction project will adversely affect the lead (if present) plumbing in and outside your home, below describes some information about the project and some preventative measures you can take to help reduce the amount of lead in drinking water.

Project Start Date: \_\_\_\_\_ Project expected to be completed by: \_\_\_\_\_

Project location and description:

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#### What you can do to reduce lead exposure in drinking water during this construction project:

*Run your water to flush out lead.* If the plumbing in your home is accessible; you may be able to inspect your own plumbing to determine whether or not you have a lead service line. Otherwise, you will most likely have to hire a plumber.

- If you do not have a lead service line, running the water for 1 – 2 minutes at the kitchen tap should clear the lead from your household plumbing to the kitchen tap. Once you have done this, fill a container with water and store it in the refrigerator for drinking, cooking, and preparing baby formula throughout the day.
- If you do have a lead service line, flushing times can vary based on the length of your lead service line and the plumbing configuration in your home. The length of lead service lines varies considerably. Flushing for at least 3 – 5 minutes is recommended.

*Use cold water for drinking, cooking, and preparing baby formula.* Do not cook with or drink water from the hot water tap; lead dissolves more easily into hot water. Do not use water from the hot water tap to make baby formula.

*Look for alternative sources or treatment of water.* You may want to consider purchasing bottled water or a water filter that is certified to remove "total lead".

*Clean and remove any debris from faucet aerators* on a regular basis.

*Do not boil water to remove lead.* Boiling water will not reduce lead.

*Purchase lead-free faucets and plumbing components.*

*Remove the entire lead service line.*

*Test your water for lead.* Call us at: \_\_\_\_\_ to find out how to get your water tested for lead.

While we do not do the testing, we can provide a list of laboratories certified to do the testing. Laboratories will send you the bottles for sample collection. Please note that we are not affiliated with the laboratories and they will charge you a fee.

- If test results indicate a lead level above 15 ug/L, bottled water should be used by pregnant women, breast-feeding women, young children, and formula-fed infants.

## 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<sub>V</sub>.

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<sub>mb</sub> = 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.

80173

## COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017

Revised: April 1, 2019

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 according to Article 109.04.

When an extended traffic control 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."

80384

## 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.

80261

## **DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)**

Effective: September 1, 2000

Revised: March 2, 2019

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 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 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, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform 19.00 % of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

- (a) The bidder documents enough DBE participation has been obtained to meet the goal or,
- (b) The bidder documents 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 a material bidding requirement and failure of the bidder to comply will render the bid not responsive.

The bidder shall submit a DBE Utilization Plan (form SBE 2026), and a DBE Participation Statement (form SBE 2025) for each DBE company proposed for the performance of work to achieve the contract goal, with the bid. If the Utilization Plan indicates the contract goal will not be met, documentation of good faith efforts shall also be submitted. 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. The required forms and documentation must be submitted as a single .pdf file using the "Integrated Contractor Exchange (iCX)" application within the Department's "EBids System".

The Department will not accept a Utilization Plan if it does not meet the bidding procedures set forth herein and the bid will be declared not responsive. In the event the bid is declared not responsive, 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.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan is approved. All information submitted by the bidder must be complete, accurate and adequately document enough DBE participation has been obtained or document the 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. This means 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 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 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 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 the 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 it is otherwise eligible for award. If the Department determines 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 will also include a statement of reasons for the adverse 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 to cure the deficiency.

- (c) The bidder may request administrative reconsideration of an adverse determination by emailing the Department at "[DOT.DBE.UP@illinois.gov](mailto:DOT.DBE.UP@illinois.gov)" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. 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 reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person 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 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 emailed to the Department at [DOT.DBE.UP@illinois.gov](mailto:DOT.DBE.UP@illinois.gov).
- (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, a new Request for Approval of Subcontractor will not be required. However, the Contractor must document efforts to assure 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 copies of DBE subcontracts to the Department 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) 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) The DBE is aware 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) 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 Contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the 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) The Contractor has determined the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor 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 Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the 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 will 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 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment 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 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.

80029

## **DISPOSAL FEES (BDE)**

Effective: November 1, 2018

Replace Articles 109.04(b)(5) – 109.04(b)(8) of the Standard Specifications with the following:

- “(5) Disposal Fees. When the extra work performed includes paying for disposal fees at a clean construction and demolition debris facility, an uncontaminated soil fill operation or a landfill, the Contractor shall receive, as administrative costs, an amount equal to five percent of the first \$10,000 and one percent of any amount over \$10,000 of the total approved costs of such fees.
- (6) Miscellaneous. No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.
- (7) Statements. No payment will be made for work performed on a force account basis until the Contractor has furnished the Engineer with itemized statements of the cost of such force account work. Statements shall be accompanied and supported by invoices for all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor’s stock, then in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from his/her stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

Itemized statements at the cost of force account work shall be detailed as follows.

- a. Name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman. Payrolls shall be submitted to substantiate actual wages paid if so requested by the Engineer.
  - b. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.
  - c. Quantities of materials, prices and extensions.
  - d. Transportation of materials.
  - e. Cost of property damage, liability and workmen’s compensation insurance premiums, unemployment insurance contributions, and social security tax.
- (8) Work Performed by an Approved Subcontractor. When extra work is performed by an approved subcontractor, the Contractor shall receive, as administrative costs, an amount equal to five percent of the total approved costs of such work with the minimum payment being \$100.

- (9) All statements of the cost of force account work shall be furnished to the Engineer not later than 60 days after receipt of the Central Bureau of Construction form "Extra Work Daily Report". If the statement is not received within the specified time frame, all demands for payment for the extra work are waived and the Department is released from any and all such demands. It is the responsibility of the Contractor to ensure that all statements are received within the specified time regardless of the manner or method of delivery."

80402

## **ELECTRIC SERVICE INSTALLATION (BDE)**

Effective: January 1, 2020

Revise Article 804.04 of the Standard Specifications to read:

**“804.04 Installation.** The electric service installation shall extend from the existing utility owned transformer to the point of cable termination of the incoming power at the controller enclosure.

The Contractor shall ascertain the work being provided by the electric utility and shall provide all additional material and work required to complete the electric service installation while meeting the requirements of the utility. Unless otherwise required by the utility, grounding shall be according to Section 806, raceways shall be according to Sections 810 – 812, and conductors shall be according to Sections 817 – 818.

The electric service installation shall include an appropriate service disconnect and when required, metering. Metering shall include all metering material, including potential and current transformers. The metering and service disconnect shall be installed remote to the controller enclosure where possible.

The total length of aerial and underground service between the controller enclosure and utility transformer shall not exceed 250 ft (76 m). The service pole or structure and controller shall be located adjacent to the right-of-way line or a minimum distance of 30 ft (9 m) from the edge of pavement. The exact location will be established by the Engineer.

Specific requirements for aerial and underground electric service installations shall be as follows.

- (a) **Aerial Electric Service.** The aerial service shall be mounted on a wood pole, along with a weatherhead, disconnect switch, meter base (if required), and all appurtenances to complete the installation.

The wood pole shall be installed according to Article 830.03(c), except the pole shall be a minimum of 25 ft (7.5 m) in length and shall be increased as necessary to maintain ground clearance.

- (b) **Underground Electric Service.**

- (1) **Ground Mounted Service.** The ground mounted service shall be installed on a corrosion resistant pedestal or structure with a service disconnect switch, meter base (if required), and all appurtenances to complete the installation.

- (2) **Pole Mounted Service.** The service shall be installed on a 12 ft (3.7 m) wood pole on which the meter base (if required) and service disconnect switch shall be channel

mounted. The wood pole shall be installed according to Article 830.03(c), except the pole shall be plumb.

- (c) Conduit Protection. Feeder conductors in PVC conduit on the service pole or structure shall be protected by galvanized steel “U” guard. When on a pole, the “U” guard shall be attached with 3/8 in. x 3 in. (M10 x 75 mm) galvanized steel lag bolts.”

Revise Article 804.05 of the Standard Specifications to read:

**“804.05 Basis of Payment.** This work will be paid for at the contract unit price per each for ELECTRIC SERVICE INSTALLATION.

For aerial electric service, work on the utility side of the weatherhead at the service pole will be paid for according to Article 109.04 when not provided by the utility company.

For underground electric service, work on the utility side of the service pole, pedestal, or structure where the service cables penetrate the ground will be paid for according to Article 109.04 when not provided by the utility company.

Any charges by the utility company to provide electrical service will be paid for according to Article 109.05.”

80421

## EMULSIFIED ASPHALTS (BDE)

Effective: August 1, 2019

Revise Article 1032.06 of the Standard Specifications to read:

**“1032.06 Emulsified Asphalts.** Emulsified asphalts will be accepted according to the current Bureau of Materials Policy Memorandum, “Emulsified Asphalt Acceptance Procedure”. These materials shall be homogeneous and shall show no separation of asphalt after thorough mixing, within 30 days after delivery, provided separation has not been caused by freezing. They shall coat the aggregate being used in the work to the satisfaction of the Engineer and shall be according to the following requirements.

- (a) Anionic Emulsified Asphalt. Anionic emulsified asphalts RS-1, RS-2, HFRS-2, SS-1h, and SS-1 shall be according to AASHTO M 140, except as follows.
  - (1) The cement mixing test will be waived when the emulsion is being used as a tack coat.
  - (2) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.
- (b) Cationic Emulsified Asphalt. Cationic emulsified asphalts CRS-1, CRS-2, CSS-1h, and CSS-1 shall be according to AASHTO M 208, except as follows.
  - (1) The cement mixing test will be waived when the emulsion is being used as a tack coat.
  - (2) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.
- (c) High Float Emulsion. High float emulsions HFE-90, HFE-150, and HFE-300 are medium setting and shall be according to the following table.

Test	HFE-90	HFE-150	HFE-300
Viscosity, Saybolt Furol, at 122 °F (50 °C), (AASHTO T 59), SFS <sup>1/</sup>	50 min.	50 min.	50 min.
Sieve Test, No. 20 (850 µm), retained on sieve, (AASHTO T 59), %	0.10 max.	0.10 max.	0.10 max.
Storage Stability Test, 1 day, (AASHTO T 59), %	1 max.	1 max.	1 max.
Coating Test (All Grades), (AASHTO T 59), 3 minutes	stone coated thoroughly		
Distillation Test, (AASHTO T 59): Residue from distillation test to 500 °F (260 °C), % Oil distillate by volume, %	65 min. 7 max.	65 min. 7 max.	65 min. 7 max.

Characteristics of residue from distillation test to 500 °F (260 °C): Penetration at 77 °F (25 °C), (AASHTO T 49), 100 g, 5 sec, dmm	90-150	150-300	300 min.
Float Test at 140 °F (60 °C), (AASHTO T 50), sec.	1200 min.	1200 min.	1200 min.

1/ The emulsion shall be pumpable.

- (d) Penetrating Emulsified Prime. Penetrating Emulsified Prime (PEP) shall be according to AASHTO T 59, except as follows.

Test	Result
Viscosity, Saybolt Furol, at 77 °F (25 °C), SFS	75 max.
Sieve test, retained on No. 20 (850 µm) sieve, %	0.10 max.
Distillation to 500 °F (260 °C) residue, %	38 min.
Oil distillate by volume, %	4 max.

The PEP shall be tested according to the current Bureau of Materials Illinois Laboratory Test Procedure (ILTP), "Sand Penetration Test of Penetrating Emulsified Prime (PEP)". The time of penetration shall be equal to or less than that of MC-30. The depth of penetration shall be equal to or greater than that of MC-30.

- (e) Delete this subparagraph.
- (f) Polymer Modified Emulsified Asphalt. Polymer modified emulsified asphalts, e.g. SS-1hP, CSS-1hP, CRS-2P (formerly CRSP), CQS-1hP (formerly CSS-1h Latex Modified) and HFRS-2P (formerly HFP) shall be according to AASHTO M 316, except as follows.
- (1) The cement mixing test will be waived when the polymer modified emulsion is being used as a tack coat.
  - (2) CQS-1hP (formerly CSS-1h Latex Modified) emulsion for micro-surfacing treatments shall use latex as the modifier.
  - (3) Upon examination of the storage stability test cylinder after standing undisturbed for 24 hours, the surface shall show minimal to no white, milky colored substance and shall be a homogenous brown color throughout.
  - (4) The distillation for all polymer modified emulsions shall be performed according to AASHTO T 59, except the temperature shall be  $374 \pm 9$  °F ( $190 \pm 5$  °C) to be held for a period of 15 minutes and measured using an ASTM 16F (16C) thermometer.
  - (5) The specified temperature for the Elastic Recovery test for all polymer modified emulsions shall be  $50.0 \pm 1.0$  °F ( $10.0 \pm 0.5$  °C).

(6) The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent.

(g) Non-Tracking Emulsified Asphalt. Non-tracking emulsified asphalt NTEA (formerly SS-1vh) shall be according to the following.

Test	Requirement
Saybolt Viscosity at 77 °F (25 °C), (AASHTO T 59), SFS	20-100
Storage Stability Test, 24 hr, (AASHTO T 59), %	1 max.
Residue by Distillation, 500 ± 10 °F (260 ± 5 °C), or Residue by Evaporation, 325 ± 5 °F (163 ± 3 °C), (AASHTO T 59), %	50 min.
Sieve Test, No. 20 (850 µm), (AASHTO T 59), %	0.3 max.
Tests on Residue from Evaporation	
Penetration at 77 °F (25 °C), 100 g, 5 sec, (AASHTO T 49), dmm	40 max.
Softening Point, (AASHTO T 53), °F (°C)	135 (57) min.
Ash Content, (AASHTO T 111), % <sup>1/</sup>	1 max.

1/ The Solubility in Trichloroethylene test according to AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent

The different grades are, in general, used for the following.

Grade	Use
SS-1, SS-1h, RS-1, RS-2, CSS-1, CRS-1, CRS-2, CSS-1h, HFE-90, SS-1hP, CSS-1hP, NTEA (formerly SS-1vh)	Tack Coat
PEP	Prime Coat
RS-2, HFE-90, HFE-150, HFE-300, CRS-2P (formerly CRSP), HFRS-2P (formerly HFP), CRS-2, HFRS-2	Bituminous Surface Treatment
CQS-1hP (formerly CSS-1h Latex Modified)	Micro-Surfacing Slurry Sealing Cape Seal"

80415

## **ENGINEER'S FIELD OFFICE AND LABORATORY (BDE)**

Effective: January 1, 2020

Revise the last sentence of the first paragraph of Article 670.01 of the Standard Specifications to read:

“The building shall remain available for use until released by the Engineer.”

Revise the fifth and sixth paragraphs of Article 670.02 of the Standard Specifications to read:

“Sanitary facilities shall include hot and cold potable running water, lavatory and toilet as an integral part of the office where available. A portable toilet, if necessary, shall be serviced once per week. Solid waste disposal consisting of two waste baskets and an outside trash container of sufficient size to accommodate a weekly provided pick-up service.

In addition, the following furniture and equipment meeting the approval of the Engineer shall be furnished.”

Revise Article 670.02(b) through 670.02(r) of the Standard Specifications to read:

- “(b) One desk with minimum working surface of 48 x 72 in. (1.2 x 1.8 m).
- (c) Two free standing four drawer legal size file cabinets with lock and an underwriters' laboratories insulated file device 350 degrees one hour rating.
- (d) Table(s) and chairs capable of seating 10 people.
- (e) One equipment cabinet of minimum inside dimension of 44 in. (1100 mm) high x 24 in. (600 mm) wide x 30 in. (750 mm) deep with lock. The walls shall be of steel with a 3/32 in. (2 mm) minimum thickness with concealed hinges and enclosed lock constructed in such a manner as to prevent entry by force. The cabinet assembly shall be permanently attached to a structural element of the field office in a manner to prevent theft of the entire cabinet.
- (f) One refrigerator with a minimum size of 14 cu ft (0.40 cu m) with a freezer unit.
- (g) One electric desk type tape printing calculator.
- (h) A minimum of two communication paths. The configuration shall include:
  - (1) Internet Connection. An internet service connection with a wireless router capable of providing service to a minimum of five devices. The internet service shall be for unlimited data with a minimum internet data download speed of 25 megabits per second. For areas where this minimum download speed is not available, the maximum speed available for the area shall be provided.

- (2) Telephone Line. One landline touch tone telephone with voicemail or answering machine. The telephone shall have an unpublished number.
- (i) One plain paper wireless color printer capable of reproducing prints up to 11 x 17 in. (280 x 432 mm) with an automatic feed tray. Separate paper trays for letter size and 11 x 17 in. (280 x 432 mm) paper shall be provided. The wireless printer shall also be equipped to copy in color and scan documents.
- (j) One electric water cooler dispenser.
- (k) One first-aid cabinet fully equipped.
- (l) One microwave oven (minimum 700 watt) with a turntable and 1 cu ft (0.03 cu m) minimum capacity.
- (m) One fire-proof safe, 0.5 cu ft (0.01 cu m) minimum capacity.
- (n) One electric paper shredder.
- (o) One post mounted rain gauge, located on the project site for each 5 miles (8 km) of project length.”

Revise the last sentence of the first paragraph of Articles 670.04 and 670.05 of the Standard Specifications to read:

“Doors and windows shall be equipped with locks.”

Revise Article 670.04(c) through 670.04(n) of the Standard Specifications to read:

“(c) Two folding chairs.

(d) One equipment cabinet of minimum inside dimension of 44 in. (1100 mm) high x 24 in. (600 mm) wide x 30 in. (750 mm) deep with lock. The walls shall be of steel with a 3/32 in. (2 mm) minimum thickness with concealed hinges and enclosed lock constructed to prevent entry by force. The cabinet assembly shall be permanently attached to a structural element of the field office to prevent theft of the entire cabinet.

(e) A minimum of two communication paths. The configuration shall include:

(1) Internet Connection. An internet service connection with a wireless router capable of providing service to a minimum of five devices. The internet service shall be for unlimited data with a minimum internet download speed of 25 megabits per second. For areas where this minimum download speed is not available, the maximum speed available for the area shall be provided.

(2) Telephone Line. One land line touch tone telephone with voicemail or answering machine. The telephone shall have an unpublished number.

(f) One electric desk type tape printing calculator.

(g) One first-aid cabinet fully equipped.

(h) One plain paper wireless color printer capable of reproducing prints up to 11 x 17 in. (280 x 432 mm) with an automatic feed tray. Separate paper trays for letter size and 11 x 17 in. (280 x 432 mm) paper shall be provided. The wireless printer shall also be equipped to copy in color and scan documents.

(i) A portable toilet meeting Federal, State, and local health department requirements shall be provided, maintained clean and in good working condition, and shall be stocked with lavatory and sanitary supplies at all times. The portable toilet shall be serviced once per week.

(j) One electric water cooler dispenser.

(k) One refrigerator with a minimum size of 14 cu ft (0.45 cu m) with a freezer unit.

(l) One microwave oven (minimum 700 watt) with a turntable and 1 cu ft (0.03 cu m) minimum capacity.”

Revise Article 670.05(f) of the Standard Specifications to read:

“(f) One landline touch tone telephone with voicemail or an answering machine. The telephone shall have an unpublished number.”

Delete the last sentence of the second paragraph of Article 670.06 of the Standard Specifications.

Revise the fifth sentence of the first paragraph of Article 670.07 of the Supplemental Specifications to read:

“This price shall include all utility costs and shall reflect the salvage value of the building or buildings, equipment, and furniture which remain the property of the Contractor after release by the Engineer, except the Department will pay that portion of the monthly long distance and monthly local telephone, when combined, exceed \$250.”

80423

## **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.”

80388

**HOT-MIX ASPHALT – LONGITUDINAL JOINT SEALANT (BDE)**

Effective: August 1, 2018

Revised: November 1, 2019

Add the following to Article 406.02 of the Standard Specifications.

“(d) Longitudinal Joint Sealant (LJS) .....1032”

Add the following to Article 406.03 of the Standard Specifications.

“(k) Longitudinal Joint Sealant (LJS) Pressure Distributor (Note 2)

(l) Longitudinal Joint Sealant (LJS) Melter Kettle (Note 3)

Note 2. When a pressure distributor is used to apply the LJS, the distributor shall be equipped with a heating and recirculating system along with a functioning auger agitating system or vertical shaft mixer in the hauling tank to prevent localized overheating. The distributor shall be equipped with a guide or laser system to aid in proper placement of the LJS application.

Note 3. When a melter kettle is used to transport and apply the LJS, the melter kettle shall be an oil jacketed double-boiler with agitating and recirculating systems. Material from the kettle may be dispensed through a pressure feed wand with an applicator shoe or through a pressure feed wand into a hand-operated thermal push cart.”

Revise Article 406.06(g)(2) of the Standard Specifications to read:

“(2) Longitudinal Joints. Unless prohibited by stage construction, any HMA lift shall be complete before construction of the subsequent lift. The longitudinal joint in all lifts shall be at the centerline of the pavement if the roadway comprises two lanes in width, or at lane width if the roadway is more than two lanes in width.

When stage construction prohibits the total completion of a particular lift, the longitudinal joint in one lift shall be offset from the longitudinal joint in the preceding lift by not less than 3 in. (75 mm). The longitudinal joint in the surface course shall be at the centerline of the pavement if the roadway comprises two lanes in width, or at lane width if the roadway is more than two lanes in width.

A notched wedge longitudinal joint shall be used between successive passes of HMA binder course that has a difference in elevation of greater than 2 in. (50 mm) between lanes on pavement that is open to traffic.

The notched wedge longitudinal joint shall consist of a 1 to 1 1/2 in. (25 to 38 mm) vertical notch at the lane line, a 9 to 12 in. (230 to 300 mm) wide uniform taper sloped toward and extending into the open lane, and a second 1 to 1 1/2 in. (25 to 38 mm) vertical notch at the outside edge.

The notched wedge longitudinal joint shall be formed by the strike off device on the paver. The wedge shall then be compacted by the joint roller.

Tack coat shall be applied to the entire surface of the notched wedge joint immediately prior to placing the adjacent lift of binder. The material shall be uniformly applied at a rate of 0.05 to 0.1 gal/sq yd (0.2 to 0.5 L/sq m).

When the use of longitudinal joint sealant (LJS) is specified, the surface to which the LJS is applied shall be thoroughly cleaned and dry. The LJS may be placed before or after the tack coat. When placed after the tack coat, the tack shall be fully cured prior to placement of the LJS.

The LJS shall be applied in a single pass with a pressure distributor, melter kettle, or hand applied from a roll. At the time of installation, the pavement surface temperature and the ambient temperature shall be a minimum of 40 °F (4 °C) and rising.

The LJS shall be applied at a width of 18 in. (450 mm) ± 1 1/2 in. (38 mm) and centered ± 2 in. (± 50 mm) under the joint of the next HMA lift to be constructed. If the LJS flows more than 2 in. (50 mm) from the initial placement width, LJS placement shall stop and remedial action shall be taken.

When starting another run of LJS placement, suitable release paper shall be placed over the previous application of LJS to prevent doubling up of thickness of LJS.

The application rate of LJS shall be according to the following.

LJS Application Table			
Overlay Thickness in. (mm)	Coarse Graded Application Rate <sup>1/</sup> (IL-19.0, IL-19.0L, IL-9.5, IL-9.5L, IL-4.75) lb/ft (kg/m)	Fine Graded Application Rate <sup>1/</sup> lb/ft (kg/m)	SMA Mixtures <sup>1/2/</sup>
3/4 (19)	0.88 (1.31)		
1 (25)	1.15 (1.71)		
1 1/4 (32)	1.31 (1.95)	0.88 (1.31)	
1 1/2 (38)	1.47 (2.19)	0.95 (1.42)	1.26 (1.88)
1 3/4 (44)	1.63 (2.43)	1.03 (1.54)	1.38 (2.06)
2 (50)	1.80 (2.68)	1.11 (1.65)	1.51 (2.25)
≥ 2 1/4 (60)	1.96 (2.92)		

1/ The application rate has a surface demand for liquid included within it. The thickness of the LJS may taper from the center of the application to a lesser thickness on the edge of the application, provided the correct width and application rate are maintained.

2/ If the joint is between SMA and either Coarse Graded or Fine Graded, the SMA rate shall be used.

The Contractor shall furnish to the Engineer a bill of lading for each tanker supplying material to the project. The application rate of LJS shall be verified within the first 1000 ft (300 m) of the day's placement and every 12,000 ft (3600 m) thereafter. A suitable paper or pan shall be placed at a random location in the path of the LJS. After application of the LJS, the paper or pan shall be picked up, weighed, and the application rate calculated. The tolerance between the application rate shown in the LJS Application Table and the calculated rate shall be  $\pm 10$  percent. The LJS shall be replaced in the area where the sample was taken.

A 1 qt (1 L) sample shall be taken from the pressure distributor or melting kettle at the jobsite once for each contract and sent to the Central Bureau of Materials.

The LJS shall be suitable for construction traffic to drive on without pickup or tracking of the LJS within 30 minutes of placement. If pickup or tracking occurs, LJS placement shall stop and damaged areas shall be repaired.

Prior to paving, the Contractor shall ensure the paver end plate and grade control device is adequately raised above the finished height of the LJS.

The LJS shall not flush to the final surface of the HMA pavement.”

Add the following paragraph after the second paragraph of Article 406.13(b) of the Standard Specifications.

“Application of longitudinal joint sealant (LJS) will be measured for payment in place in feet (meters).”

Add the following paragraph after the first paragraph of Article 406.14 of the Standard Specifications.

“Longitudinal joint sealant will be paid for at the contract unit price per foot (meter) for LONGITUDINAL JOINT SEALANT.”

Add the following to Section 1032 of the Standard Specifications.

**“1032.12 Longitudinal Joint Sealant (LJS).** Longitudinal joint sealant (LJS) will be accepted according to the current Bureau of Materials and Physical Research Policy Memorandum, “Performance Graded Asphalt Binder Acceptance Procedure” with the following exceptions: Article 3.1.9 and 3.4.1.4 of the policy memorandum will be excluded. The bituminous material used for the LJS shall be according to the following table. Elastomers shall be added to a base asphalt and shall be either a styrene-butadiene diblock or triblock copolymer without oil extension, or a styrene-butadiene rubber. Air blown asphalt, acid modification, or other modifiers will not be allowed. LJS in the form of pre-formed rollout banding may also be used.

Test	Test Requirement	Test Method
Dynamic shear @ 88°C (unaged), G*/sin δ, kPa	1.00 min.	AASHTO T 315
Creep stiffness @ -18°C (unaged), Stiffness (S), MPa m-value	300 max. 0.300 min.	AASHTO T 313
Ash, %	1.0 – 4.0	AASHTO T 111
Elastic Recovery, 100 mm elongation, cut immediately, 25°C, %	70 min.	ASTM D 6084 (Procedure A)
Separation of Polymer, Difference in °C of the softening point (ring and ball)	3 max.	ITP Separation of Polymer from Asphalt Binder”

80398

**MANHOLES, VALVE VAULTS, AND FLAT SLAB TOPS (BDE)**

Effective: January 1, 2018

Revised: March 1, 2019

Description. In addition to those manufactured according to the current standards included in this contract, manholes, valve vaults, and flat slab tops manufactured prior to March 1, 2019, according to the previous Highway Standards listed below will be accepted on this contract:

Product	Previous Standards		
Precast Manhole Type A, 4' (1.22 m) Diameter	602401-05	602401-04	602401-03
Precast Manhole Type A, 5' (1.52 m) Diameter	602402-01	602402	602401-03
Precast Manhole Type A, 6' (1.83 m) Diameter	602406-09	602406-08	602406-07
Precast Manhole Type A, 7' (2.13 m) Diameter	602411-07	602411-06	602411-05
Precast Manhole Type A, 8' (2.44 m) Diameter	602416-07	602416-06	602416-05
Precast Manhole Type A, 9' (2.74 m) Diameter	602421-07	602421-06	602421-05
Precast Manhole Type A, 10' (3.05 m) Diameter	602426-01	602426	
Precast Valve Vault Type A, 4' (1.22 m) Diameter	602501-04	602501-03	602501-02
Precast Valve Vault Type A, 5' (1.52 m) Diameter	602506-01	602506	602501-02
Precast Reinforced Concrete Flat Slab Top	602601-05	602601-04	

The following revisions to the Standard Specifications shall apply to manholes, valve vaults, and flat slab tops manufactured according to the current standards included in this contract:

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).”

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 manufactured according to AASHTO M 199 (M 199M), except the minimum wall thickness shall be as shown on the plans. 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.”

80393

## **MOBILIZATION (BDE)**

Effective: April 1, 2020

Replace Articles 671.02(a), (b), and (c) of the Standard Specifications with the following:

“(a) Upon execution of the contract, 90 percent of the pay item will be paid.

(b) When 90 percent of the adjusted contract value is earned, the remaining ten percent of the pay item will be paid along with any amount bid in excess of six percent of the original contract amount.”

80428

**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.

80371

**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.”

80389



The Contractor will be advised when the Department has received approval of the insurance from the railroad(s). Before any work begins on railroad right-of-way, the Contractor shall submit to the Engineer evidence that the required insurance has been approved by the railroad(s). The Contractor shall also provide the Engineer with the expiration date of each required policy.

Basis of Payment. Providing Railroad Protective Liability and Property Damage Liability Insurance will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE.

80157

## REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 2019

Revised: January 1, 2020

Revise Section 669 of the Standard Specifications to read:

### **“SECTION 669. REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES**

**669.01 Description.** This work shall consist of the transportation and proper disposal of regulated substances. This work shall also consist of the removal, transportation, and proper disposal of underground storage tanks (UST), their contents and associated underground piping to the point where the piping is above the ground, including determining the content types and estimated quantities.

**669.02 Equipment.** The Contractor shall notify the Engineer of the delivery of all excavation, storage, and transportation equipment to a work area location. The equipment shall comply with OSHA and American Petroleum Institute (API) guidelines and shall be furnished in a clean condition. Clean condition means the equipment does not contain any residual material classified as a non-special waste, non-hazardous special waste, or hazardous waste. Residual materials include, but are not limited to, petroleum products, chemical products, sludges, or any other material present in or on equipment.

Before beginning any associated soil or groundwater management activity, the Contractor shall provide the Engineer with the opportunity to visually inspect and approve the equipment. If the equipment contains any contaminated residual material, decontamination shall be performed on the equipment as appropriate to the regulated substance and degree of contamination present according to OSHA and API guidelines. All cleaning fluids used shall be treated as the contaminant unless laboratory testing proves otherwise.

**669.03 Pre-Construction Submittals and Qualifications.** Prior to beginning this work, or working in areas with regulated substances, the Contractor shall submit a “Regulated Substances Pre-Construction Plan (RSPCP)” to the Engineer for review and approval using form BDE 2730. The form shall be signed by an Illinois licensed Professional Engineer or Professional Geologist.

As part of the RSPCP, the Contractor(s) or firm(s) performing the work shall meet the following qualifications.

- (a) Regulated Substances Monitoring. Qualification for environmental observation and field screening of regulated substances work and environmental observation of UST removal shall require either pre-qualification in Hazardous Waste by the Department or demonstration of acceptable project experience in remediation and operations for contaminated sites in accordance with applicable Federal, State, or local regulatory requirements using BDE 2730.

Qualification for each individual performing regulated substances monitoring shall require a minimum of one-year of experience in similar activities as those required for the project.

- (b) Underground Storage Tank Removal. Qualification for underground storage tank (UST) removal work shall require licensing and certification with the Office of the State Fire Marshall (OSFM) and possession of all permits required to perform the work. A copy of the permit shall be provided to the Engineer prior to tank removal.

The qualified Contractor(s) or firm(s) shall also document it does not have any current or former ties with any of the properties contained within, adjoining, or potentially affecting the work.

The Engineer will require up to 21 calendar days for review of the RSPCP. The review may involve rejection or revision and resubmittal; in which case, an additional 21 days will be required for each subsequent review. Work shall not commence until the RSPCP has been approved by the Engineer. After approval, the RSPCP shall be revised as necessary to reflect changed conditions in the field and documented using BDE 2730A "Regulated Substances Pre-Construction Plan (RSPCP) Addendum" and submitted to the Engineer for approval.

## **CONSTRUCTION REQUIREMENTS**

**669.04 Regulated Substances Monitoring.** Regulated substances monitoring includes environmental observation and field screening during regulated substances management activities at the contract specific work areas. As part of the regulated substances monitoring, the monitoring personnel shall perform and document the applicable duties listed on form BDE 2732 "Regulated Substances Monitoring Daily Record (RSMDR)".

- (a) Environmental Observation. Prior to beginning excavation, the Contractor shall mark the limits of the contract specific work areas. Once work begins, the monitoring personnel shall be present on-site continuously during the excavation and loading of material.
- (b) Field Screening. Field screening shall be performed during the excavation and loading of material from the contract specific work areas, except for material classified according to Article 669.05(b)(1) or 669.05(c) where field screening is not required.

Field screening shall be performed with either a photoionization detector (PID) (minimum 10.6eV lamp) or a flame ionization detector (FID), and other equipment as appropriate, to monitor for potential contaminants associated with regulated substances. The PID or FID shall be calibrated on-site, and background level readings taken and recorded daily, and as field and weather conditions change. Field screen readings on the PID or FID in excess of background levels indicates the potential presence of regulated substances requiring handling as a non-special waste, special waste, or hazardous waste. PID or FID readings may be used as the basis of increasing the limits of removal with the approval of the Engineer but shall in no case be used to decrease the limits.

**669.05 Regulated Substances Management and Disposal.** The management and disposal of soil and/or groundwater containing regulated substances shall be according to the following:

- (a) Soil Analytical Results Exceed Most Stringent MAC. When the soil analytical results indicate detected levels exceed the most stringent maximum allowable concentration (MAC) for chemical constituents in soil established pursuant to Subpart F of 35 Ill. Adm. Code 1100.605, the soil shall be managed as follows:
  - (1) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC, but still considered within area background levels by the Engineer, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable. If the soils cannot be utilized within the right-of-way, they shall be managed and disposed of at a landfill as a non-special waste.
  - (2) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC but do not exceed the MAC for a Metropolitan Statistical Area (MSA) County identified in 35 Ill. Admin. Code 742 Appendix A. Table G, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of at a clean construction and demolition debris (CCDD) facility or an uncontaminated soil fill operation (USFO) within an MSA County provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.
  - (3) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, or the MAC within the Chicago corporate limits, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site at a CCDD facility or an USFO within an MSA County excluding Chicago or within the Chicago corporate limits provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.
  - (4) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site at a CCDD facility or an USFO within an MSA County excluding Chicago provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.
  - (5) When the Engineer determines soil cannot be managed according to Articles 669.05(a)(1) through (a)(4) above and the materials do not contain special waste or hazardous waste, as determined by the Engineer, the soil shall be managed and disposed of at a landfill as a non-special waste.
  - (6) When analytical results indicate soil is hazardous by characteristic or listing pursuant to 35 Ill. Admin. Code 721, contains radiological constituents, or the Engineer otherwise determines the soil cannot be managed according to Articles 669.05(a)(1)

through (a)(5) above, the soil shall be managed and disposed of off-site as a special waste or hazardous waste as applicable.

(b) Soil Analytical Results Do Not Exceed Most Stringent MAC. When the soil analytical results indicate that detected levels do not exceed the most stringent MAC, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site according to Article 202.03. However, the excavated soil cannot be taken to a CCDD facility or an USFO for any of the following reasons.

(1) The pH of the soil is less than 6.25 or greater than 9.0.

(2) The soil exhibited PID or FID readings in excess of background levels.

(c) Soil Analytical Results Exceed Most Stringent MAC but Do Not Exceed Tiered Approach to Corrective Action Objectives (TACO) Residential. When the soil analytical results indicate that detected levels exceed the most stringent MAC but do not exceed TACO Tier 1 Soil Remediation Objectives for Residential Properties pursuant to 35 Ill. Admin. Code 742 Appendix B Table A, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site according to Article 202.03. However, the excavated soil cannot be taken to a CCDD facility or an USFO.

(d) Groundwater. When groundwater analytical results indicate the detected levels are above Appendix B, Table E of 35 Ill. Admin. Code 742, the most stringent Tier 1 Groundwater Remediation Objectives for Groundwater Component of the Groundwater Ingestion Route for Class 1 groundwater, the groundwater shall be managed off-site as a special waste or hazardous waste as applicable. Special waste groundwater shall be containerized and trucked to an off-site treatment facility, or may be discharged to a sanitary sewer or combined sewer when permitted by the local sewer authority. Groundwater discharged to a sanitary sewer or combined sewer shall be pre-treated to remove particulates and measured with a calibrated flow meter to comply with applicable discharge limits. A copy of the permit shall be provided to the Engineer prior to discharging groundwater to the sanitary sewer or combined sewer.

Groundwater encountered within trenches may be managed within the trench and allowed to infiltrate back into the ground. If the groundwater cannot be managed within the trench, it may be discharged to a sanitary sewer or combined sewer when permitted by the local sewer authority, or it shall be containerized and trucked to an off-site treatment facility as a special waste or hazardous waste. The Contractor is prohibited from discharging groundwater within the trench through a storm sewer. The Contractor shall install backfill plugs within the area of groundwater contamination.

One backfill plug shall be placed down gradient to the area of groundwater contamination. Backfill plugs shall be installed at intervals not to exceed 50 ft (15 m). Backfill plugs are to be 4 ft (1.2 m) long, measured parallel to the trench, full trench width and depth. Backfill plugs shall not have any fine aggregate bedding or backfill, but shall be entirely cohesive

soil or any class of concrete. The Contractor shall provide test data that the material has a permeability of less than  $10^{-7}$  cm/sec according to ASTM D 5084, Method A or per another test method approved by the Engineer.

The Contractor shall use due care when transferring contaminated material from the area of origin to the transporter. Should releases of contaminated material to the environment occur (i.e., spillage onto the ground, etc.), the Contractor shall clean-up spilled material and place in the appropriate storage containers as previously specified. Clean-up shall include, but not be limited to, sampling beneath the material staging area to determine complete removal of the spilled material.

The Contractor shall provide engineered barriers, when required, and shall include materials sufficient to completely line excavation surfaces, including sloped surfaces, bottoms, and sidewall faces, within the areas designated for protection.

The Contractor shall obtain all documentation including any permits and/or licenses required to transport the material containing regulated substances to the disposal facility. The Contractor shall coordinate with the Engineer on the completion of all documentation. The Contractor shall make all arrangements for collection and analysis of landfill acceptance testing. The Contractor shall coordinate waste disposal approvals with the disposal facility.

The Contractor shall provide the Engineer with all transport-related documentation within two days of transport or receipt of said document(s). For management of special or hazardous waste, the Contractor shall provide the Engineer with documentation that the Contractor is operating with a valid Illinois special waste transporter permit at least two weeks before transporting the first load of contaminated material.

Transportation and disposal of material classified according to Article 669.05(a)(5) or 669.05(a)(6) shall be completed each day so that none of the material remains on-site by the close of business, except when temporary staging has been approved.

Any waste generated as a special or hazardous waste from a non-fixed facility shall be manifested off-site using the Department's county generator number provided by the Bureau of Design and Environment. An authorized representative of the Department shall sign all manifests for the disposal of the contaminated material and confirm the Contractor's transported volume. Any waste generated as a non-special waste may be managed off-site without a manifest, a special waste transporter, or a generator number.

The Contractor shall select a landfill permitted for disposal of the contaminant within the State of Illinois. The Department will review and approve or reject the facility proposed by the Contractor to use as a landfill. The Contractor shall verify whether the selected disposal facility is compliant with those applicable standards as mandated by their permit and whether the disposal facility is presently, has previously been, or has never been, on the United States Environmental Protection Agency (U.S. EPA) National Priorities List or the Resource Conservation and Recovery Act (RCRA) List of Violating Facilities. The use of a Contractor selected landfill shall in no manner delay the construction schedule or alter the Contractor's responsibilities as set forth.

**669.06 Non-Special Waste Certification.** An authorized representative of the Department shall sign and date all non-special waste certifications. The Contractor shall be responsible for providing the Engineer with the required information that will allow the Engineer to certify the waste is not a special waste.

(a) Definition. A waste is considered a non-special waste as long as it is not:

- (1) a potentially infectious medical waste;
- (2) a hazardous waste as defined in 35 Ill. Admin. Code 721;
- (3) an industrial process waste or pollution control waste that contains liquids, as determined using the paint filter test set forth in subdivision (3)(A) of subsection (m) of 35 Ill. Admin. Code 811.107;
- (4) a regulated asbestos-containing waste material, as defined under the National Emission Standards for Hazardous Air Pollutants in 40 CFR Part 61.141;
- (5) a material containing polychlorinated biphenyls (PCB's) regulated pursuant to 40 CFR Part 761;
- (6) a material subject to the waste analysis and recordkeeping requirements of 35 Ill. Admin. Code 728.107 under land disposal restrictions of 35 Ill. Admin. Code 728;
- (7) a waste material generated by processing recyclable metals by shredding and required to be managed as a special waste under Section 22.29 of the Environmental Protection Act; or
- (8) an empty portable device or container in which a special or hazardous waste has been stored, transported, treated, disposed of, or otherwise handled.

(b) Certification Information. All information used to determine the waste is not a special waste shall be attached to the certification. The information shall include but not be limited to:

- (1) the means by which the generator has determined the waste is not a hazardous waste;
- (2) the means by which the generator has determined the waste is not a liquid;
- (3) if the waste undergoes testing, the analytic results obtained from testing, signed and dated by the person responsible for completing the analysis;
- (4) if the waste does not undergo testing, an explanation as to why no testing is needed;

(5) a description of the process generating the waste; and

(6) relevant material safety data sheets.

**669.07 Temporary Staging.** Soil classified according to Articles 669.05(a)(2), (b)(1), or (c) may be temporarily staged at the Contractor's option. Soil classified according to Articles 669.05(a)(1), (a)(3), (a)(4), (a)(5), (a)(6), or (b)(2) shall be managed and disposed of without temporary staging to the greatest extent practicable. If circumstances beyond the Contractor's control require temporary staging of these latter materials, the Contractor shall request approval from the Engineer in writing.

Temporary staging shall be accomplished within the right-of-way and the Contractor's means and methods shall be described in the approved or amended RSPCP. Staging areas shall not be located within 200 feet (61 m) of a public or private water supply well; nor within 100 feet (30 m) of sensitive environmental receptor areas, including wetlands, rivers, streams, lakes, or designated habitat zones.

The method of staging shall consist of containerization or stockpiling as applicable for the type, classification, and physical state (i.e., liquid, solid, semisolid) of the material. Materials of different classifications shall be staged separately with no mixing or co-mingling.

When containers are used, the containers and their contents shall remain intact and inaccessible to unauthorized persons until the manner of disposal is determined. The Contractor shall be responsible for all activities associated with the storage containers including, but not limited to, the procurement, transport, and labeling of the containers. The Contractor shall not use a storage container if visual inspection of the container reveals the presence of free liquids or other substances that could cause the waste to be reclassified as a hazardous or special waste.

When stockpiles are used, they shall be covered with a minimum 20-mil plastic sheeting or tarps secured using weights or tie-downs. Perimeter berms or diversionary trenches shall be provided to contain and collect for disposal any water that drains from the soil. Stockpiles shall be managed to prevent or reduce potential dust generation.

When staging non-special waste, special waste, or hazardous waste, the following additional requirements shall apply:

- (a) **Non-Special Waste.** When stockpiling soil classified according to Article 669.05(a)(1) or 669.05(a)(5), an impermeable surface barrier between the materials and the ground surface shall be installed. The impermeable barrier shall consist of a minimum 20-mil plastic liner material and the surface of the stockpile area shall be clean and free of debris prior to placement of the liner. Measures shall also be taken to limit or discourage access to the staging area.
- (b) **Special Waste and Hazardous Waste.** Soil classified according to Article 669.05(a)(6) shall not be stockpiled but shall be containerized immediately upon generation in containers, tanks or containment buildings as defined by RCRA, Toxic Substances Control

Act (TSCA), and other applicable State or local regulations and requirements, including 35 Ill. Admin. Code Part 722, Standards Applicable to Generators of Hazardous Waste.

The staging area(s) shall be enclosed (by a fence or other structure) to restrict direct access to the area, and all required regulatory identification signs applicable to a staging area containing special waste or hazardous waste shall be deployed.

Storage containers shall be placed on an all-weather gravel-packed, asphalt, or concrete surface. Containers shall be in good condition and free of leaks, large dents, or severe rusting, which may compromise containment integrity. Containers must be constructed of, or lined with, materials that will not react or be otherwise incompatible with the hazardous or special waste contents. Containers used to store liquids shall not be filled more than 80 percent of the rated capacity. Incompatible wastes shall not be placed in the same container or comingled.

All containers shall be legibly labeled and marked using pre-printed labels and permanent marker in accordance with applicable regulations, clearly showing the date of waste generation, location and/or area of waste generation, and type of waste. The Contractor shall place these identifying markings on an exterior side surface of the container.

Storage containers shall be kept closed, and storage pads covered, except when access is needed by authorized personnel.

Special waste and hazardous waste shall be transported and disposed within 90 days from the date of generation.

**669.08 Underground Storage Tank Removal.** For the purposes of this section, an underground storage tank (UST) includes the underground storage tank, piping, electrical controls, pump island, vent pipes and appurtenances.

Prior to removing an UST, the Engineer shall determine whether the Department is considered an "owner" or "operator" of the UST as defined by the UST regulations (41 Ill. Adm. Code Part 176). Ownership of the UST refers to the Department's owning title to the UST during storage, use or dispensing of regulated substances. The Department may be considered an "operator" of the UST if it has control of, or has responsibility for, the daily operation of the UST. The Department may however voluntarily undertake actions to remove an UST from the ground without being deemed an "operator" of the UST.

In the event the Department is deemed not to be the "owner" or "operator" of the UST, the OSFM removal permit shall reflect who was the past "owner" or "operator" of the UST. If the "owner" or "operator" cannot be determined from past UST registration documents from OSFM, then the OSFM removal permit will state the "owner" or "operator" of the UST is the Department. The Department's Office of Chief Counsel (OCC) will review all UST removal permits prior to submitting any removal permit to the OSFM. If the Department is not the "owner" or "operator" of the UST then it will not register the UST or pay any registration fee.

The Contractor shall be responsible for obtaining permits required for removing the UST, notification to the OSFM, using an OSFM certified tank contractor, removal and disposal of the UST and its contents, and preparation and submittal of the OSFM Site Assessment Report in accordance with 41 Ill. Admin. Code Part 176.330.

The Contractor shall contact the Engineer and the OSFM's office at least 72 hours prior to removal to confirm the OSFM inspector's presence during the UST removal. Removal, transport, and disposal of the UST shall be according to the applicable portions of the latest revision of the "American Petroleum Institute (API) Recommended Practice 1604".

The Contractor shall collect and analyze tank content (sludge) for disposal purposes. The Contractor shall remove as much of the regulated substance from the UST system as necessary to prevent further release into the environment. All contents within the tank shall be removed, transported and disposed of, or recycled. The tank shall be removed and rendered empty according to IEPA definition.

The Contractor shall collect soil samples from the bottom and sidewalls of the excavated area in accordance with 35 Ill. Admin. Code Part 734.210(h) after the required backfill has been removed during the initial response action, to determine the level of contamination remaining in the ground, regardless if a release is confirmed or not by the OSFM on-site inspector.

In the event the UST is designated a leaking underground storage tank (LUST) by the OSFM's inspector, or confirmation by analytical results, the Contractor shall notify the Engineer and the District Environmental Studies Unit (DESU). Upon confirmation of a release of contaminants and notifications to the Engineer and DESU, the Contractor shall report the release to the Illinois Emergency Management Agency (IEMA) (e.g., by telephone or electronic mail) and provide them with whatever information is available ("owner" or "operator" shall be stated as the past registered "owner" or "operator", or the IDOT District in which the tank is located and the DESU Manager).

The Contractor shall perform the following initial response actions if a release is indicated by the OSFM inspector:

- (a) Take immediate action to prevent any further release of the regulated substance to the environment, which may include removing, at the Engineer's discretion, and disposing of up to 4 ft (1.2 m) of the contaminated material, as measured from the outside dimension of the tank;
- (b) Identify and mitigate fire, explosion and vapor hazards;
- (c) Visually inspect any above ground releases or exposed below ground releases and prevent further migration of the released substance into surrounding soils and groundwater; and
- (d) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors and free product that have migrated from the tank excavation zone and entered into subsurface structures (such as sewers or basements).

The tank excavation shall be backfilled according to applicable portions of Sections 205, 208, and 550 with a material that will compact and develop stability. All uncontaminated concrete and soil removed during tank extraction may be used to backfill the excavation, at the discretion of the Engineer.

After backfilling the excavation, the site shall be graded and cleaned.

**669.09 Regulated Substances Final Construction Report.** Not later than 90 days after completing this work, the Contractor shall submit a “Regulated Substances Final Construction Report (RSFCR)” to the Engineer using form BDE 2733 and required attachments. The form shall be signed by an Illinois licensed Professional Engineer or Professional Geologist.

**669.10 Method of Measurement.** Non-special waste, special waste, and hazardous waste soil will be measured for payment according to Article 202.07(b) when performing earth excavation, Article 502.12(b) when excavating for structures, or by computing the volume of the trench using the maximum trench width permitted and the actual depth of the trench.

Groundwater containerized and transported off-site for management, storage, and disposal will be measured for payment in gallons (liters).

Backfill plugs will be measured in cubic yards (cubic meters) in place, except the quantity for which payment will be made shall not exceed the volume of the trench, as computed by using the maximum width of trench permitted by the Specifications and the actual depth of the trench, with a deduction for the volume of the pipe.

Engineered Barriers will be measured for payment in square yards (square meters).

**669.11 Basis of Payment.** The work of preparing, submitting and administering a Regulated Substances Pre-Construction Plan will be paid for at the contract lump sum price for REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN.

Regulated substances monitoring, including completion of form BDE 2732 for each day of work, will be paid for at the contract unit price per calendar day, or fraction thereof to the nearest 0.5 calendar day, for REGULATED SUBSTANCES MONITORING.

The installation of engineered barriers will be paid for at the contract unit price per square yard (square meter) for ENGINEERED BARRIER.

The work of UST removal, soil excavation, soil and content sampling, the management of excavated soil and UST content, and UST disposal, will be paid for at the contract unit price per each for UNDERGROUND STORAGE TANK REMOVAL.

The transportation and disposal of soil and other materials from an excavation determined to be contaminated will be paid for at the contract unit price per cubic yard (cubic meter) for

**NON-SPECIAL WASTE DISPOSAL, SPECIAL WASTE DISPOSAL, or HAZARDOUS WASTE DISPOSAL.**

The transportation and disposal of groundwater from an excavation determined to be contaminated will be paid for at the contract unit price per gallon (liter) for SPECIAL WASTE GROUNDWATER DISPOSAL or HAZARDOUS WASTE GROUNDWATER DISPOSAL. When groundwater is discharged to a sanitary or combined sewer by permit, the cost will be paid for according to Article 109.05.

Backfill plugs will be paid for at the contract unit price per cubic yard (cubic meter) for BACKFILL PLUGS.

Payment for temporary staging of soil classified according to Articles 669.05(a)(1), (a)(3), (a)(4), (a)(5), (a)(6), or (b)(2) will be paid for according to Article 109.04. The Department will not be responsible for any additional costs incurred, if mismanagement of the staging area, storage containers, or their contents by the Contractor results in excess cost expenditure for disposal or other material management requirements.

Payment for accumulated stormwater removal and disposal will be according to Article 109.04. Payment will only be allowed if appropriate stormwater and erosion control methods were used.

Payment for decontamination, labor, material, and equipment for monitoring areas beyond the specified areas, with the Engineer's prior written approval, will be according to Article 109.04.

When the waste material for disposal requires sampling for landfill disposal acceptance, the samples shall be analyzed for TCLP VOCs, SVOCs, RCRA metals, pH, ignitability, and paint filter test. The analysis will be paid for at the contract unit price per each for SOIL DISPOSAL ANALYSIS using EPA Methods 1311 (extraction), 8260B for VOCs, 8270C for SVOCs, 6010B and 7470A for RCRA metals, 9045C for pH, 1030 for ignitability, and 9095A for paint filter.

The work of preparing, submitting and administering a Regulated Substances Final Construction Report will be paid for at the contract lump sum price REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT."

80407

**SILT FENCE, INLET FILTERS, GROUND STABILIZATION AND RIPRAP FILTER FABRIC (BDE)**

Effective: November 1, 2019

Revised: April 1, 2020

Revise Article 280.02(m) and add Article 280.02(n) so the Standard Specifications read:

“(m) Above Grade Inlet Filter (Fitted)..... 1081.15(j)  
 (n) Above Grade Inlet Filter (Non-Fitted)..... 1081.15(k)”

Revise the last sentence of the first paragraph in Article 280.04(c) of the Standard Specifications to read:

“The protection shall be constructed with hay or straw bales, silt filter fence, above grade inlet filters (fitted and non-fitted), or inlet filters.

Revise the first sentence of the second paragraph in Article 280.04(c) of the Standard Specifications to read:

“When above grade inlet filters (fitted and non-fitted) are specified, they shall be of sufficient size to completely span and enclose the inlet structure.”

Revise Article 1080.02 of the Standard Specifications to read:

**“1080.02 Geotextile Fabric.** The fabric for silt filter fence shall consist of woven fabric meeting the requirements of AASHTO M 288 for unsupported silt fence.

The fabric for ground stabilization shall consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven fabrics shall be Class 2 and nonwoven fabrics shall be Class 1 according to AASHTO M 288.

The physical properties for silt fence and ground stabilization fabrics shall be according to the following.

PHYSICAL PROPERTIES			
	Silt Fence Woven <sup>1/</sup>	Ground Stabilization Woven <sup>2/</sup>	Ground Stabilization Nonwoven <sup>2/</sup>
Grab Strength, lb (N) <sup>3/</sup> ASTM D 4632	123 (550) MD 101 (450) XD	247 (1100) min. <sup>4/</sup>	202 (900) min. <sup>4/</sup>
Elongation/Grab Strain, % ASTM D 4632 <sup>4/</sup>	49 max.	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 <sup>4/</sup>	--	90 (400) min.	79 (350) min.

Puncture Strength, lb (N) ASTM D 6241 <sup>4/</sup>	--	494 (2200) min.	433 (1925) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 <sup>5/</sup>	30 (0.60) max.	40 (0.43) max.	40 (0.43) max.
Permittivity, sec <sup>-1</sup> ASTM D 4491	0.05 min.		
Ultraviolet Stability, % retained strength after 500 hours of exposure ASTM D 4355	70 min.	50 min.	50 min.

- 1/ NTPEP results or manufacturer’s certification to meet test requirements.
- 2/ NTPEP results to meet test requirements. Manufacturer shall have public release status and current reports on laboratory results in Test Data of NTPEP’s DataMine.
- 3/ MD = Machine direction. XD = Cross-machine direction.
- 4/ Values represent the minimum average roll value (MARV) in the weaker principle direction, MD or XD.
- 5/ Values represent the maximum average roll value.”

Revise Article 1080.03 of the Standard Specifications to read:

**“1080.03 Filter Fabric.** The filter fabric shall consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven fabrics shall be Class 3 for riprap gradations RR 4 and RR 5, and Class 2 for RR 6 and RR 7 according to AASHTO M 288. Woven slit film geotextiles (i.e. geotextiles made from yarns of a flat, tape-like character) shall not be permitted. Nonwoven fabrics shall be Class 2 for riprap gradations RR 4 and RR 5, and Class 1 for RR 6 and RR 7 according to AASHTO M 288. After forming, the fabric shall be processed so that the yarns or filaments retain their relative positions with respect to each other. The fabric shall be new and undamaged.

The filter fabric shall be manufactured in widths of not less than 6 ft (2 m). Sheets of fabric may be sewn together with thread of a material meeting the chemical requirements given for the yarns or filaments to form fabric widths as required. The sheets of filter fabric shall be sewn together at the point of manufacture or another approved location.

The filter fabric shall be according to the following.

PHYSICAL PROPERTIES <sup>1/</sup>				
	Gradation Nos. RR 4 & RR 5		Gradation Nos. RR 6 & RR 7	
	Woven	Nonwoven	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 <sup>2/</sup>	180 (800) min.	157 (700) min.	247 (1100) min.	202 (900) min.
Elongation/Grab Strain, % ASTM D 4632 <sup>2/</sup>	49 max.	50 min.	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 <sup>2/</sup>	67 (300) min.	56 (250) min.	90 (400) min.	79 (350) min.
Puncture Strength, lb (N) ASTM D 6241 <sup>2/</sup>	370 (1650) min.	309 (1375) min.	494 (2200) min.	433 (1925) min.
Ultraviolet Stability, % retained strength after 500 hours of exposure - ASTM D 4355	50 min.			

1/ NTPEP results to meet test requirements. Manufacturer shall have public release status and current reports on laboratory results in Test Data of NTPEP's DataMine.

2/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

As determined by the Engineer, the filter fabric shall meet the requirements noted in the following after an onsite investigation of the soil to be protected.

Soil by Weight (Mass) Passing the No. 200 sieve (75 µm), %	Apparent Opening Size, Sieve No. (mm) - ASTM D 4751 <sup>1/</sup>	Permittivity, sec <sup>-1</sup> ASTM D 4491
49 max.	60 (0.25) max.	0.2 min.
50 min.	70 (0.22) max.	0.1 min.

1/ Values represent the maximum average roll value.”

Revise Article 1081.15(h)(3)a of the Standard Specifications to read:

“a. Inner Filter Fabric Bag. The inner filter fabric bag shall be constructed of woven yarns or nonwoven filaments made of polyolefins or polyesters with a minimum silt and debris capacity of 2.0 cu ft (0.06 cu m). Woven fabric shall be Class 3 and nonwoven fabric shall be Class 2 according to AASHTO M 288. The fabric bag shall be according to the following.

PHYSICAL PROPERTIES		
	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 <sup>1/</sup>	180 (800) min.	157 (700) min.
Elongation/Grab Strain, % ASTM D 4632 <sup>1/</sup>	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 <sup>1/</sup>	67 (300) min.	56 (250) min.
Puncture Strength, lb (N) ASTM D 6241 <sup>1/</sup>	370 (1650) min.	309 (1375) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 <sup>2/</sup>	60 (0.25) max.	
Permittivity, sec <sup>-1</sup> ASTM D 4491	2.0 min.	
Ultraviolet Stability, % retained strength after 500 hours of exposure – ASTM D 4355	70 min.	

1/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

2/ Values represent the maximum average roll value.”

Revise Article 1081.15(i)(1) of the Standard Specifications to read:

“(i) Urethane Foam/Geotextile. Urethane foam/geotextile shall be triangular shaped having a minimum height of 10 in. (250 mm) in the center with equal sides and a minimum 20 in. (500 mm) base. The triangular shaped inner material shall be a low density urethane foam. The outer geotextile fabric cover shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters placed around the inner material and shall extend beyond both sides of the triangle a minimum of 18 in. (450 mm). Woven filter fabric shall be Class 3 and nonwoven filter fabric shall be Class 2 according to AASHTO M 288.

(1) The geotextile shall meet the following properties.

PHYSICAL PROPERTIES		
	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 <sup>1/</sup>	180 (800) min.	157 (700) min.
Elongation/Grab Strain, % ASTM D 4632 <sup>1/</sup>	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 <sup>1/</sup>	67 (300) min.	56 (250) min.
Puncture Strength, lb (N) ASTM D 6241 <sup>1/</sup>	370 (1650) min.	309 (1375) min.

Apparent Opening Size, Sieve No. (mm) ASTM D 4751 <sup>2/</sup>	30 (0.60) max.
Permittivity, sec <sup>-1</sup> ASTM D 4491	2.0 min.
Ultraviolet Stability, % retained strength after 500 hours of exposure – ASTM D 4355	70 min.

1/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

2/ Values represent the maximum average roll value.”

Add the following to Article 1081.15(i) of the Standard Specifications.

“(3) Certification. The manufacturer shall furnish a certificate with each shipment of urethane foam/geotextile assemblies stating the amount of product furnished and that the material complies with these requirements.”

Revise the title and first sentence of Article 1081.15(j) of the Standards Specifications to read:

“(j) Above Grade Inlet Filters (Fitted). Above grade inlet filters (fitted) shall consist of a rigid polyethylene frame covered with a fitted geotextile filter fabric.”

Revise Article 1081.15(j)(2) of the Standard Specifications to read:

(2) Fitted Geotextile Filter Fabric. The fitted geotextile filter fabric shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters. Woven filter fabric shall be Class 3 and nonwoven filter fabric shall be Class 2 according to AASHTO M 288. The filter shall be fabricated to provide a direct fit to the frame. The top of the filter shall integrate a coarse screen with a minimum apparent opening size of 1/2 in. (13 mm) to allow large volumes of water to pass through in the event of heavy flows. The filter shall have integrated anti-buoyancy pockets capable of holding a minimum of 3.0 cu ft (0.08 cu m) of stabilization material. Each filter shall have a label with the following information sewn to or otherwise permanently adhered to the outside: manufacturer’s name, product name, and lot, model, or serial number. The fitted geotextile filter fabric shall be according to the table in Article 1081.15(h)(3)a above.”

Add Article 1081.15(k) to the Standard Specifications to read:

“(k) Above Grade Inlet Filters (Non-Fitted). Above grade inlet filters (non-fitted) shall consist of a geotextile fabric surrounding a metal frame. The frame shall consist of either a) a circular cage formed of welded wire mesh, or b) a collapsible aluminum frame, as described below.

(1) Frame Construction.

- a) Welded Wire Mesh Frame. The frame shall consist of 6 in. x 6 in. (150 mm x 150 mm) welded wire mesh formed of #10 gauge (3.42 mm) steel conforming to ASTM A 185. The mesh shall be 30 in. (750 mm) tall and formed into a 42 in. (1.05 m) minimum diameter cylinder.
  - b) Collapsible Aluminum Frame. The collapsible aluminum frame shall consist of grade 6036 aluminum. The frame shall have anchor lugs that attach it to the inlet grate, which shall resist movement from water and debris. The collapsible joints of the frame shall have a locking device to secure the vertical members in place, which shall prevent the frame from collapsing while under load from water and debris.
- (2) Geotextile Fabric. The geotextile fabric shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters. The woven filter fabric shall be a Class 3 and the nonwoven filter fabric shall be a Class 2 according to AASHTO M 288. The geotextile fabric shall be according to the table in Article 1081.15(h)(3)a above.
- (3) Geotechnical Fabric Attachment to the Frame.
- a) Welded Wire Mesh Frame. The woven or nonwoven geotextile fabric shall be wrapped 3 in. (75 mm) over the top member of a 6 in. x 6 in. (150 mm x 150 mm) welded wire mesh frame and secured with fastening rings constructed of wire conforming to ASTM A 641, A 809, A 370, and A 938 at 6 in. (150 mm) on center. The fastening rings shall penetrate both layers of geotextile and securely close around the steel mesh. The geotextile shall be secured to the sides of the welded wire mesh with fastening rings at a spacing of 1 per sq ft (11 per sq m) and securely close around a steel member.
  - b) Collapsible Aluminum Frame. The woven or nonwoven fabric shall be secured to the aluminum frame along the top and bottom of the frame perimeter with strips of aluminum secured to the perimeter member, such that the anchoring system provides a uniformly distributed stress throughout the geotechnical fabric.
- (4) Certification. The manufacturer shall furnish a certificate with each shipment of above grade inlet filter assemblies stating the amount of product furnished and that the material complies with these requirements.”

80419

## **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.”

80397

## **SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)**

Effective: November 2, 2017

Revised: April 1, 2019

Replace the second paragraph of Article 109.12 of the Standard Specifications with the following:

“This mobilization payment shall be made at least seven 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%”

80391

**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."

80298

## **TRAFFIC CONTROL DEVICES - CONES (BDE)**

Effective: January 1, 2019

Revise Article 701.15(a) of the Standard Specifications to read:

“(a) Cones. Cones are used to channelize traffic. Cones used to channelize traffic at night shall be reflectorized; however, cones shall not be used in nighttime lane closure tapers or nighttime lane shifts.”

Revise Article 1106.02(b) of the Standard Specifications to read:

“(b) Cones. Cones shall be predominantly orange. Cones used at night that are 28 to 36 in. (700 to 900 mm) in height shall have two white circumferential stripes. If non-reflective spaces are left between the stripes, the spaces shall be no more than 2 in. (50mm) in width. Cones used at night that are taller than 36 in. (900 mm) shall have a minimum of two white and two fluorescent orange alternating, circumferential stripes with the top stripe being fluorescent orange. If non-reflective spaces are left between the stripes, the spaces shall be no more than 3 in. (75 mm) in width.

The minimum weights for the various cone heights shall be 4 lb for 18 in. (2 kg for 450 mm), 7 lb for 28 in. (3 kg for 700 mm), and 10 lb for 36 in. (5 kg for 900 mm) with a minimum of 60 percent of the total weight in the base. Cones taller than 36 in. shall be weighted per the manufacturer’s specifications such that they are not moved by wind or passing traffic.”

80409

**TRAINING SPECIAL PROVISIONS (BDE)** 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 3 . In the event the contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractor’s needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor’s records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The contractor shall furnish the trainee a copy of the program he will follow in providing the training. The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

METHOD OF MEASUREMENT The unit of measurement is in hours.

BASIS OF PAYMENT This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price and total price have been included in the schedule of prices.

20338

## 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.

80288

## **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.

80302

## WORK ZONE TRAFFIC CONTROL DEVICES (BDE)

Effective: March 2, 2020

Add the following to Article 701.03 of the Standard Specifications:

“(q) Temporary Sign Supports ..... 1106.02”

Revise the third paragraph of Article 701.14 of the Standard Specifications to read:

“For temporary sign supports, the Contractor shall provide a FHWA eligibility letter for each device used on the contract. The letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device. The signs shall be supported within 20 degrees of vertical. Weights used to stabilize signs shall be attached to the sign support per the manufacturer’s specifications.”

Revise the first paragraph of Article 701.15 of the Standard Specifications to read:

“**701.15 Traffic Control Devices.** For devices that must meet crashworthiness standards, the Contractor shall provide a manufacturer’s self-certification or a FHWA eligibility letter for each Category 1 device and a FHWA eligibility letter for each Category 2 and Category 3 device used on the contract. The self-certification or letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device.”

Revise the first six paragraphs of Article 1106.02 of the Standard Specifications to read:

“**1106.02 Devices.** Work zone traffic control devices and combinations of devices shall meet crashworthiness standards for their respective categories. The categories are as follows.

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, plastic drums, and delineators, with no attachments (e.g. lights). Category 1 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 1 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include vertical panels with lights, barricades, temporary sign supports, and Category 1 devices with attachments (e.g. drums with lights). Category 2 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 2 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions (impact

attenuators), truck mounted attenuators, and other devices not meeting the definitions of Category 1 or 2. Category 3 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 3 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2029. Category 3 devices shall be crash tested for Test Level 3 or the test level specified.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals, and area lighting supports. It is preferable for Category 4 devices manufactured after December 31, 2019 to be MASH-16 compliant; however, there are currently no crash tested devices in this category, so it remains exempt from the NCHRP 350 or MASH compliance requirement.

For each type of device, when no more than one MASH-16 compliant is available, an NCHRP 350 or MASH-2009 compliant device may be used, even if manufactured after December 31, 2019.”

Revise Articles 1106.02(g), 1106.02(k), and 1106.02(l) to read:

“(g) Truck Mounted/Trailer Mounted Attenuators. The attenuator shall be approved for use at Test Level 3. Test Level 2 may be used for normal posted speeds less than or equal to 45 mph.

(k) Temporary Water Filled Barrier. The water filled barrier shall be a lightweight plastic shell designed to accept water ballast and be on the Department’s qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings.

(l) Movable Traffic Barrier. The movable traffic barrier shall be on the Department’s qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings. The barrier shall be capable of being moved on and off the roadway on a daily basis.”

80427

## REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

### ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

#### I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor

performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

#### II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

**1. Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection

for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

**2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

**3. Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

**4. Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

**5. Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

## **6. Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

**7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

**8. Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

**9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

#### **10. Assurance Required by 49 CFR 26.13(b):**

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

**11. Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#).

The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

### **III. NONSEGREGATED FACILITIES**

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

### **IV. DAVIS-BACON AND RELATED ACT PROVISIONS**

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

#### **1. Minimum wages**

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each

classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a

separate account assets for the meeting of obligations under the plan or program.

## 2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

## 3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee ( e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

#### 4. Apprentices and trainees

##### a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice

performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

##### b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

##### d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

**5. Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

**6. Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

**7. Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

**9. Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

#### **10. Certification of eligibility.**

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

#### **V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

**1. Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one

and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

**2. Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

**3. Withholding for unpaid wages and liquidated damages.** The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

**4. Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

#### **VI. SUBLETTING OR ASSIGNING THE CONTRACT**

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

## VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

## VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

## IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

## X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

### 1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

\* \* \* \* \*

## **2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

## **2. Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of

Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

\* \* \* \* \*

#### **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

\* \* \* \* \*

#### **XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of

Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

## Contract Provision - Cargo Preference Requirements

In accordance with Title 46 CFR § 381.7 (b), the contractor agrees—

“(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.”

Provisions (1) and (2) apply to materials or equipment that are acquired solely for the project. The two provisions do not apply to goods or materials that come into inventories independent of the project, such as shipments of Portland cement, asphalt cement, or aggregates, when industry suppliers and contractors use these materials to replenish existing inventories.

**MINIMUM WAGES FOR FEDERAL AND FEDERALLY  
ASSISTED CONSTRUCTION CONTRACTS**

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision shall be the minimum paid by contractors and subcontractors to laborers and mechanics.