

115

Letting November 7, 2025

Notice to Bidders, Specifications and Proposal



**Contract No. 61L92
COOK County
Section 16-00061-00-LS (Lincolnwood)
Route FAU 1349 (DeVon Avenue)
Project K3LS-696 ()
District 1 Construction Funds**

Prepared by

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Checked by

(Printed by authority of the State of Illinois)



**Illinois Department
of Transportation**

NOTICE TO BIDDERS

1. **TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 12:00 p.m. November 7, 2025 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. 61L92
COOK County
Section 16-00061-00-LS (Lincolnwood)
Project K3LS-696 ()
Route FAU 1349 (DeVon Avenue)
District 1 Construction Funds**

**Rehabilitation of Devon Avenue from Lincoln Avenue to McCormick Boulevard in Lincolnwood.
Includes; HMA resurfacing, curb & gutter, sidewalks, lighting, parkway enhancements and water main.**

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 re-advertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Gia Biagi,
Secretary

CONTRACT 61L92

INDEX FOR SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2025

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

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 1-1-22) (Revised 1-1-25)

SUPPLEMENTAL SPECIFICATIONS

<u>Std. Spec. Sec.</u>	<u>Page No.</u>
202 Earth and Rock Excavation	1
204 Borrow and Furnished Excavation.....	2
207 Porous Granular Embankment	3
211 Topsoil and Compost	4
406 Hot-Mix Asphalt Binder and Surface Course	5
407 Hot-Mix Asphalt Pavement (Full-Depth)	7
420 Portland Cement Concrete Pavement	8
502 Excavation for Structures	9
509 Metal Railings	10
540 Box Culverts	11
542 Pipe Culverts	31
550 Storm Sewers	40
586 Granular Backfill for Structures	47
630 Steel Plate Beam Guardrail	48
632 Guardrail and Cable Road Guard Removal	49
644 High Tension Cable Median Barrier	50
665 Woven Wire Fence	51
701 Work Zone Traffic Control and Protection	52
781 Raised Reflective Pavement Markers	54
782 Reflectors	55
801 Electrical Requirements	57
821 Roadway Luminaires	60
1003 Fine Aggregates	61
1004 Coarse Aggregates	62
1010 Finely Divided Minerals	63
1020 Portland Cement Concrete	64
1030 Hot-Mix Asphalt	67
1040 Drain Pipe, Tile, and Wall Drain	68
1061 Waterproofing Membrane System	69
1067 Luminaire	70
1097 Reflectors	77
1102 Hot-Mix Asphalt Equipment	78

RECURRING SPECIAL PROVISIONS

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

<u>CHECK SHEET #</u>		<u>PAGE NO.</u>
1	<input checked="" type="checkbox"/> Additional State Requirements for Federal-Aid Construction Contracts	79
2	<input checked="" type="checkbox"/> Subletting of Contracts (Federal-Aid Contracts)	82
3	<input checked="" type="checkbox"/> EEO	83
4	<input type="checkbox"/> Specific EEO Responsibilities Non Federal-Aid Contracts	93
5	<input type="checkbox"/> Required Provisions - State Contracts	98
6	<input type="checkbox"/> Asbestos Bearing Pad Removal	104
7	<input type="checkbox"/> Asbestos Waterproofing Membrane and Asbestos HMA Surface Removal	105
8	<input type="checkbox"/> Temporary Stream Crossings and In-Stream Work Pads	106
9	<input checked="" type="checkbox"/> Construction Layout Stakes	107
10	<input type="checkbox"/> Use of Geotextile Fabric for Railroad Crossing	110
11	<input type="checkbox"/> Subsealing of Concrete Pavements	112
12	<input type="checkbox"/> Hot-Mix Asphalt Surface Correction	116
13	<input type="checkbox"/> Pavement and Shoulder Resurfacing	118
14	<input type="checkbox"/> Patching with Hot-Mix Asphalt Overlay Removal	119
15	<input type="checkbox"/> Polymer Concrete	121
16	Reserved	123
17	<input type="checkbox"/> Bicycle Racks	124
18	<input type="checkbox"/> Temporary Portable Bridge Traffic Signals	126
19	<input checked="" type="checkbox"/> Nighttime Inspection of Roadway Lighting	128
20	<input type="checkbox"/> English Substitution of Metric Bolts	129
21	<input type="checkbox"/> Calcium Chloride Accelerator for Portland Cement Concrete	130
22	<input type="checkbox"/> Quality Control of Concrete Mixtures at the Plant	131
23	<input checked="" type="checkbox"/> Quality Control/Quality Assurance of Concrete Mixtures	139
24	Reserved	155
25	Reserved	156
26	<input type="checkbox"/> Temporary Raised Pavement Markers	157
27	<input type="checkbox"/> Restoring Bridge Approach Pavements Using High-Density Foam	158
28	<input type="checkbox"/> Portland Cement Concrete Inlay or Overlay	161
29	<input type="checkbox"/> Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching	165
30	<input type="checkbox"/> Longitudinal Joint and Crack Patching	168
31	<input type="checkbox"/> Concrete Mix Design – Department Provided	170
32	<input type="checkbox"/> Station Numbers in Pavements or Overlays	171

LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

Table of Contents

<u>CHECK SHEET #</u>		<u>PAGE NO.</u>
LRS 1	Reserved	173
LRS 2	<input type="checkbox"/> Furnished Excavation	174
LRS 3	<input checked="" type="checkbox"/> Work Zone Traffic Control Surveillance	175
LRS 4	<input type="checkbox"/> Flaggers in Work Zones	176
LRS 5	<input type="checkbox"/> Contract Claims	177
LRS 6	<input type="checkbox"/> Bidding Requirements and Conditions for Contract Proposals	178
LRS 7	<input type="checkbox"/> Bidding Requirements and Conditions for Material Proposals	184
LRS 8	Reserved	190
LRS 9	<input type="checkbox"/> Bituminous Surface Treatments	191
LRS 10	Reserved	195
LRS 11	<input type="checkbox"/> Employment Practices	196
LRS 12	<input type="checkbox"/> Wages of Employees on Public Works	198
LRS 13	<input type="checkbox"/> Selection of Labor	200
LRS 14	<input type="checkbox"/> Paving Brick and Concrete Paver Pavements and Sidewalks	201
LRS 15	<input type="checkbox"/> Partial Payments	204
LRS 16	<input type="checkbox"/> Protests on Local Lettings	205
LRS 17	<input type="checkbox"/> Substance Abuse Prevention Program	206
LRS 18	<input type="checkbox"/> Multigrade Cold Mix Asphalt	207
LRS 19	<input type="checkbox"/> Reflective Crack Control Treatment	208

TABLE OF CONTENTS

SPECIAL PROVISIONS	1
LOCATION OF IMPROVEMENT	1
DESCRIPTION OF IMPROVEMENT	2
COMMENCEMENT OF WORK	2
ARTICLE 105.09 – LAYOUT PAINT	2
ARTICLE 107.09 - SPECIAL CONDITIONS	2
AVAILABLE REPORTS	2
ELECTRONIC CAD RESOURCES DISCLAIMER	3
ADJUSTMENTS AND RECONSTRUCTIONS (D-1)	4
DRAINAGE AND INLET PROTECTION UNDER TRAFFIC (D1)	5
FRICTION AGGREGATE (D-1)	7
HOT-MIX ASPHALT BINDER AND SURFACE COURSE (D-1)	10
MAINTENANCE OF ROADWAYS (D-1)	16
PUBLIC CONVENIENCE AND SAFETY	16
STATUS OF UTILITIES (D-1)	17
TEMPORARY PAVEMENT (D1)	23
KEEPING ARTERIAL ROADWAYS OPEN TO TRAFFIC	24
SUPPLEMENTAL WATERING	25
PORTLAND CEMENT CONCRETE SIDEWALK	27
PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH	28
WATER MAIN	30
WATER VALVES	33
FIRE HYDRANTS TO BE REMOVED	35
FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX	36
CATCH BASINS TO BE CLEANED	37
CLEANING EXISTING MANHOLE OR HANDHOLE	37
CLEANING EXISTING INLETS	37
REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES	38
COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	43
CONCRETE CURB, TYPE B AND CONCRETE CURB, TYPE M	45
MAST ARM SIGN PANELS	46
COILABLE NON-METALLIC CONDUIT	47
TRAFFIC SIGNAL GENERAL REQUIREMENTS	48
UNDERGROUND RACEWAYS	63
ELECTRIC SERVICE INSTALLATION (SPECIAL)	64
ELECTRIC SERVICE INSTALLATION	66
HEAVY-DUTY HANDHOLE (SPECIAL)	67
ELECTRIC UTILITY SERVICE CONNECTION	69
CONDUIT IN TRENCH, GALVANIZED STEEL, 3" DIA	70
CONDUIT IN TRENCH, PVC (SCHEDULE 40), 2" DIA	70
PVC CONDUIT IN TRENCH, 2" (SCHEDULE 40)	70
CONDUIT IN TRENCH, PVC (SCHEDULE 40), 3" DIA	70
PVC CONDUIT IN TRENCH, 3" (SCHEDULE 40)	70
CONDUIT IN TRENCH, PVC (SCHEDULE 80), 2" DIA	70
PVC CONDUIT IN TRENCH, 3" (SCHEDULE 80)	70
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 2/0	72
ELECTRIC CABLE IN CONDUIT, TRIPLEX, 2-1/C NO. 6, 1-1/C NO. 8 GROUND	73
LIGHT POLE, ALUMINUM, DAVIT, 35 FT. M.H., 15 FT. DAVIT ARM	75
LIGHT POLE FOUNDATION, METAL. 15" BOLT CIRCLE, 8 5/8" X 7"	76
REMOVAL OF POLE FOUNDATION	77
ELECTRIC CABLE	78
TRAFFIC SIGNAL POST	79
MAST ARM ASSEMBLY AND POLE	80
CONCRETE FOUNDATIONS	81
LIGHT POLE FOUNDATION (SPECIAL)	82
DETECTOR LOOP	84
REBUILD EXISTING HANDHOLE	86

Contract 61L92
Devon Avenue Improvement (Lincoln Ave to McCormick Blvd)
Village of Lincolnwood / City of Chicago, Cook County
Section 16 -00061-00-LS

TREE, SYRINGA RETICULATA IVORY SILK (IVORY SILK JAPANESE TREE LILAC), 2-1/2" CALIPER, TREE FORM, BALLED AND BURLAPPED	87
TREE, GLEDITSIA TRIACANTHOS VAR INERMIS IMPERIAL (IMPERIAL THORNLESS HONEYLOCUST), 2-1/2", BALLED AND BURLAPPED	87
TREE, ULMUS 'PROSPECTOR' (PROSPECTOR ELM), 2-1/2" CALIPER, BALLED	87
PERENNIAL PLANTS, ORNAMENTAL TYPE, GALLON POT	87
PLANTING WOODY PLANTS	95
PLANTING PERENNIAL PLANTS	102
FAILURE TO COMPLETE PLANT CARE AND ESTABLISHMENT WORK ON TIME	106
PROTECTION OF EXISTING TREES	107
SHREDDED HARDWOOD BARK MULCH	111
MULCH PLACEMENT	112
TELEVISION INSPECTION OF SEWER	114
WASHOUT BASIN	116
TRASH RECEPTACLE	117
BENCHES	117
BICYCLE RACK	117
BRICK PAVERS	121
VALVE VAULTS TO BE ABANDONED	125
LUMINAIRE (SPECIAL)	126
TRENCH BACKFILL (SPECIAL)	127
TRENCH AND BACKFILL WITH SCREENINGS	128
TOPSOIL FURNISH AND PLACE, 4" (SPECIAL)	129
TEMPORARY ACCESS (COMMERCIAL ENTRANCE)	131
TEMPORARY SIDEWALK	133
DETECTABLE WARNINGS (SPECIAL)	134
HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH	135
CURED-IN-PLACE PIPE LINER	136
STORM SEWERS, TYPE 2, DUCTILE IRON PIPE 8"	142
STORM SEWERS, TYPE 1, WATER MAIN QUALITY PIPE, 8"	142
DUCTILE IRON WATER MAIN FITTINGS	144
CUT AND CAP EXISTING WATER MAIN	145
CONNECTION TO EXISTING WATER MAIN 6"	146
CONNECTION TO EXISTING WATER MAIN 8"	146
CATCH BASINS AND INLETS (CITY OF CHICAGO)	147
VALVE VAULTS TO BE REMOVED	148
STRUCTURES TO BE ADJUSTED	149
COMBINATION CONCRETE CURB AND GUTTER, TYPE B-V.12 (CDOT)	151
TRAFFIC CONTROL PLAN	152
TEMPORARY INFORMATION SIGNING (D-1)	154
ELECTRIC SERVICE CONNECTION	155
HANDHOLES	156
LUMINAIRE, LED (SPECIAL)	158
LIGHTING UNIT COMPLETE (SPECIAL)	159
LIGHTING CONTROLLER (SPECIAL)	160
LIGHTING CONTROLLER FOUNDATION	161
MAINTENANCE OF STREET LIGHTING SYSTEM (CITY OF CHICAGO)	162
REMOVE EXISTING LIGHTING SYSTEM	166
ILLUMINATED SIGN (SPECIAL)	167
PLANTER CURB	170
MODULAR CONCRETE PAVERS (SPECIAL)	171
CAST IRON TREE GRATES	175
WATER SERVICE INSTALL, 1" COMPLETE	178
PEDESTRIAN ACTIVATED CROSSWALK WARNING SYSTEM	180
PLANTING SOIL, FURNISH AND PLACE 24"	182
VALVE VAULTS, TYPE A, 5'-DIAMETER, TYPE 1 FRAME, CLOSED LID	186
TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	187
LIGHT POLE FOUNDATION (SPECIAL)	193
LIGHT POLE FOUNDATION	194
CONCRETE RETAINING WALL REMOVAL	195
ELECTRICAL SPECIFICATION 1351	196

Contract 61L92
Devon Avenue Improvement (Lincoln Ave to McCormick Blvd)
Village of Lincolnwood / City of Chicago, Cook County
Section 16 -00061-00-LS

ELECTRICAL SPECIFICATION 1375	198
ELECTRICAL SPECIFICATION 1428.....	201
ELECTRICAL SPECIFICATION 1447.....	205
ELECTRICAL SPECIFICATION 1452.....	215
ELECTRICAL SPECIFICATION 1453.....	223
ELECTRICAL SPECIFICATION 1457.....	229
ELECTRICAL SPECIFICATION 1458	233
ELECTRICAL SPECIFICATION 1462	236
ELECTRICAL SPECIFICATION 1465	244
ELECTRICAL SPECIFICATION 1467.....	246
ELECTRICAL SPECIFICATION 1473.....	248
ELECTRICAL SPECIFICATION 1526.....	250
ELECTRICAL SPECIFICATION 1528.....	254
ELECTRICAL SPECIFICATION 1533.....	257
ELECTRICAL SPECIFICATION 1534	259
ELECTRICAL SPECIFICATION 1541	263
ELECTRICAL SPECIFICATION 1546.....	265
ELECTRICAL SPECIFICATION 1593.....	269
ELECTRICAL SPECIFICATION 1606.....	272
ELECTRICAL SPECIFICATION 1608	276
ELECTRICAL SPECIFICATION 1632.....	281
ELECTRICAL SPECIFICATION 1612	292
IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION	304
LR107-4 SPECIAL PROVISION FOR INSURANCE.....	306
LR1030-2 LOCAL QUALITY ASSURANCE/ QUALITY MANAGEMENT QC/QA	307
IEPA PERMIT (VILLAGE WATER MAIN).....	309
MWRD PERMIT (VILLAGE).....	315
LPC-663	324

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>	<input type="checkbox"/>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80099		<input type="checkbox"/>	Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2022
80274	326	<input checked="" type="checkbox"/>	Aggregate Subgrade Improvement	April 1, 2012	April 1, 2022
80192		<input type="checkbox"/>	Automated Flagger Assistance Device	Jan. 1, 2008	April 1, 2023
80173	329	<input checked="" type="checkbox"/>	Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
80426		<input type="checkbox"/>	Bituminous Surface Treatment with Fog Seal	Jan. 1, 2020	Jan. 1, 2022
80241		<input type="checkbox"/>	Bridge Demolition Debris	July 1, 2009	
50531		<input type="checkbox"/>	Building Removal	Sept. 1, 1990	Aug. 1, 2022
50261		<input type="checkbox"/>	Building Removal with Asbestos Abatement	Sept. 1, 1990	Aug. 1, 2022
80460	331	<input checked="" type="checkbox"/>	Cement, Finely Divided Minerals, Admixtures, Concrete, and Mortar	Jan. 1, 2025	
80384	342	<input checked="" type="checkbox"/>	Compensable Delay Costs	June 2, 2017	April 1, 2019
80198		<input type="checkbox"/>	Completion Date (via calendar days)	April 1, 2008	
80199		<input type="checkbox"/>	Completion Date (via calendar days) Plus Working Days	April 1, 2008	
80461		<input type="checkbox"/>	Concrete Barrier	Jan. 1, 2025	
80453		<input type="checkbox"/>	Concrete Sealer	Nov. 1, 2023	
80261	346	<input checked="" type="checkbox"/>	Construction Air Quality – Diesel Retrofit	June 1, 2010	Jan. 1, 2025
80029	348	<input checked="" type="checkbox"/>	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Jan. 2, 2025
80467		<input type="checkbox"/>	Erosion Control Blanket	Aug. 1, 2025	
80229		<input type="checkbox"/>	Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
80452		<input type="checkbox"/>	Full Lane Sealant Waterproofing System	Nov. 1, 2023	
80447		<input type="checkbox"/>	Grading and Shaping Ditches	Jan 1, 2023	
80433		<input type="checkbox"/>	Green Preformed Thermoplastic Pavement Markings	Jan. 1, 2021	Jan. 1, 2022
* 80471		<input type="checkbox"/>	Guardrail	Nov. 1, 2025	
* 80472		<input type="checkbox"/>	High Friction Surface Treatment	Nov. 1, 2025	
80456		<input type="checkbox"/>	Hot-Mix Asphalt	Jan. 1, 2024	Jan. 1, 2025
80446	351	<input checked="" type="checkbox"/>	Hot-Mix Asphalt – Longitudinal Joint Sealant	Nov. 1, 2022	Aug. 1, 2023
80438		<input type="checkbox"/>	Illinois Works Apprenticeship Initiative – State Funded Contracts	June 2, 2021	April 2, 2024
80450		<input type="checkbox"/>	Mechanically Stabilized Earth Retaining Walls	Aug. 1, 2023	Aug. 1, 2025
* 80464	353	<input checked="" type="checkbox"/>	Pavement Marking	April 1, 2025	Nov. 1, 2025
80468	354	<input checked="" type="checkbox"/>	Pavement Patching	Aug. 1, 2025	
80441	355	<input checked="" type="checkbox"/>	Performance Graded Asphalt Binder	Jan 1, 2023	
80459		<input type="checkbox"/>	Preformed Plastic Pavement Marking	June 2, 2024	
34261		<input type="checkbox"/>	Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2022
* 80473	360	<input checked="" type="checkbox"/>	Raised Reflective Pavement Markers	Nov. 1, 2025	
80455	361	<input checked="" type="checkbox"/>	Removal and Disposal of Regulated Substances	Jan. 1, 2024	April 1, 2024
* 80474		<input type="checkbox"/>	Residential Driveway Temporary Signal	Nov. 1, 2025	
80445		<input type="checkbox"/>	Seeding	Nov. 1, 2022	
80457	363	<input checked="" type="checkbox"/>	Short Term and Temporary Pavement Markings	April 1, 2024	April 2, 2024
80462	367	<input checked="" type="checkbox"/>	Sign Panels and Appurtenances	Jan. 1, 2025	April 1, 2025
80469		<input type="checkbox"/>	Slope Wall	Aug. 1, 2025	
80448	368	<input checked="" type="checkbox"/>	Source of Supply and Quality Requirements	Jan. 2, 2023	
80340		<input type="checkbox"/>	Speed Display Trailer	April 2, 2014	Jan. 1, 2022
* 80127		<input type="checkbox"/>	Steel Cost Adjustment	April 2, 2004	Nov. 1, 2025
80397	369	<input checked="" type="checkbox"/>	Subcontractor and DBE Payment Reporting	April 2, 2018	
80391	370	<input checked="" type="checkbox"/>	Subcontractor Mobilization Payments	Nov. 2, 2017	April 1, 2019
80463	371	<input checked="" type="checkbox"/>	Submission of Bidders List Information	Jan. 2, 2025	Mar. 2, 2025
80437	372	<input checked="" type="checkbox"/>	Submission of Payroll Records	April 1, 2021	Nov. 2, 2023
80435		<input type="checkbox"/>	Surface Testing of Pavements – IRI	Jan. 1, 2021	Jan. 1, 2023
80465	374	<input checked="" type="checkbox"/>	Surveying Services	April 1, 2025	
80466		<input type="checkbox"/>	Temporary Rumble Strips	April 1, 2025	
80470		<input type="checkbox"/>	Traffic Signal Backplate	Aug. 1, 2025	
20338	375	<input checked="" type="checkbox"/>	Training Special Provisions	Oct. 15, 1975	Sept. 2, 2021

<u>File Name</u>	<u>Pg.</u>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80429		<input type="checkbox"/> Ultra-Thin Bonded Wearing Course	April 1, 2020	Jan. 1, 2022
80439	378	<input checked="" type="checkbox"/> Vehicle and Equipment Warning Lights	Nov. 1, 2021	Nov. 1, 2022
80458		<input type="checkbox"/> Waterproofing Membrane System	Aug. 1, 2024	
80302	379	<input checked="" type="checkbox"/> Weekly DBE Trucking Reports	June 2, 2012	Jan. 2, 2025
80454		<input type="checkbox"/> Wood Sign Support	Nov. 1, 2023	
80427	380	<input checked="" type="checkbox"/> Work Zone Traffic Control Devices	Mar. 2, 2020	Jan. 1, 2025
80071	382	<input checked="" type="checkbox"/> Working Days	Jan. 1, 2002	

STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the specifications listed in the table below which apply to and govern the proposed improvement designated as Section 16-00061-00-LS, Project Number K3LS(696), Contract Number 61L92 and in case of conflict with any part or parts of said specifications, the said Special Provisions shall take precedence and govern.

- A. "Standard Specifications for Road and Bridge Construction", Adopted January 1, 2022
- B. "Supplemental Specifications and Recurring Special Provisions", Adopted January 1, 2025
- C. Latest Edition of the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways" (IMUTCD)
- D. Standard Specifications for Water and Sewer Main Construction in Illinois" Eight Edition 2020,
- E. Latest Edition of the Manual of Test Procedure of Materials
- F. Latest Edition of the Standard Specifications for Traffic Control Items (SSTCI)
- G. Public Rights-Of-Way Accessibility Guidelines
- H. Standard Specifications for Water & Sewer Main Construction in Illinois 7th Edition, 2014.
- I. Current edition of the ENGINEER Rules and Regulations for Construction in the Public Way
- J. City of Chicago Municipal Code,
- K. City of Chicago Rules and Regulations for Construction in the Public Way
- L. The Metropolitan Water Reclamation District of Greater Chicago (MWRD) Watershed Management Ordinance,
- M. Latest Edition of the Manual of Test Procedure of Materials
- N. "Special Provisions" Included in the Contract Documents
- O. All Permits, including Metropolitan Water Reclamation District.
- P. The "Natural Resources Conservation Service Technical Guide and Engineering Field Manual"
- Q. The "Illinois Urban Manual", and the "Illinois Urban Manual Field Manual for Inspection of Erosion and Sediment Control Best Management Practices"
- R. The "Americans with Disabilities Act of 1990 Accessibility Guidelines", the "Draft Rehabilitation Act of 1973" (Section 504), and the "Public Rights-Of-Way Accessibility Guidelines".

Section / Article references refer to the Standard Specification.

LOCATION OF IMPROVEMENT

The Devon Avenue corridor improvement project is located on the border of the Village of Lincolnwood and the City of Chicago in Cook County, Illinois. The project limits are from just east of Lincoln Ave to just west of McCormick Blvd, The gross and net length of the project is 1,591 feet (0.30 miles).

DESCRIPTION OF IMPROVEMENT

The proposed Devon Avenue corridor improvement project is a roadway rehabilitation project.

Improvements include combination curb and gutter replacement, curblane drainage structures adjustments/replacements, sidewalk replacement, lighting removal, proposed decorative roadway lighting, pavement surface/markings/signage, driveway replacement, parkway enhancements (parking bays, parkway pavers, trees in grates, trees in turf, site furnishings), improvements to Village water main, raised/planted medians with overhead rectangular flashing beacon system, tree preservation, tree removal, and HMA surface removal, as well as all items and collateral work necessary to complete the project as shown on the plans and described herein. This project does not include in-stream work, or impacts to wetlands or Waters of the US.

COMMENCEMENT OF WORK

The CONTRACTOR shall not disturb ground or begin removals prior to March 16, 2026 without written approval from the Village.

ARTICLE 105.09 – LAYOUT PAINT

In addition to the requirements of Article 105.09 of the Standard Specifications, the CONTRACTOR shall furnish (included in the cost of mobilization) white, pink or purple pavement marking paint in aerosol cans, for use by the ENGINEER. The CONTRACTOR and SUBCONTRACTORS shall only use these same colors for their own markings, therefore, not using J.U.L.I.E. utility colors.

ARTICLE 107.09 - SPECIAL CONDITIONS

All coordination to occur through ENGINEER.

Signage. All street signage removed for construction shall be consolidated and stored at a central location on site. This location shall be forwarded to Engineer for her use. Once substantial completion is reached, the Contractor shall coordinate with Engineer to reinstall any street signage required in a timely manner. Village and City will have 2 weeks to collect any remaining signage from storage, at that point, all remaining signage and appurtenances shall become Contractor property.

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) [By IDOT]
- ☒ Preliminary Environmental Site Assessment (PESA) [By IDOT]
- ☐ Soils/Geotechnical Report
- ☐ Boring Logs
- ☐ Pavement Cores
- ☐ Location Drainage Study (LDS)
- ☐ Hydraulic Report
- ☐ Noise Analysis
- ☒ Other: LPC-663/Analytical Report

Those seeking these reports should request access from:
John M. Welch, PE, CFM Director of Public Works
Village of Lincolnwood 7001 N Lawndale Avenue Lincolnwood, IL 60712
847.675.0888 jwelch@lwd.org

ELECTRONIC CAD RESOURCES DISCLAIMER

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ADJUSTMENTS AND RECONSTRUCTIONS (D-1)

Effective: March 15, 2011

Revised: October 1, 2021

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-2 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-2 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-2 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-2 concrete, unless otherwise noted in the plans, not less than 9 in. (225 mm) thick. The pavement may be opened to traffic according to Article 701.17(e)(3)b.

The surface of the Class PP concrete shall be constructed flush with the adjacent surface.”

Revise the first sentence of Article 603.07 to read:

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

DRAINAGE AND INLET PROTECTION UNDER TRAFFIC (D1)

Effective: April 1, 2011

Revised: April 2, 2011

Add the following to Article 603.02 of the Standard Specifications:

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

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

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

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

Revise Article 603.07 of the Standard Specifications to read:

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

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

- (a) Temporary Asphalt Ramps. Temporary hot-mix asphalt ramps shall be placed around the casting, flush with its surface and decreasing to a featheredge in a distance of 2 ft (600 mm) around the entire surface of the casting.
- (b) Temporary Rubber Ramps. Temporary rubber ramps shall only be used on roadways with permanent posted speeds of 40 mph or less and when the height of the casting to be protected meets the proper sizing requirements for the rubber ramps as shown below.

Dimension	Requirement
Inside Opening	Outside dimensions of casting + 1 in. (25 mm)
Thickness at inside edge	Height of casting ± 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."

FRICTION AGGREGATE (D-1)

Effective: January 1, 2011
Revised: December 1, 2021

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> ^{5/} : 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> ^{5/} : Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{1/} Crushed Concrete
HMA High ESAL Low ESAL	Binder IL-19.0 or IL-19.0L SMA Binder	<u>Allowed Alone or in Combination</u> ^{5/ 6/} : Crushed Gravel Carbonate Crushed Stone ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Concrete ^{3/}

Contract 61L92
Devon Avenue Improvement (Lincoln Ave to McCormick Blvd)
Village of Lincolnwood / City of Chicago, Cook County
Section 16 -00061-00-LS

Use	Mixture	Aggregates Allowed	
HMA High ESAL Low ESAL	C Surface and Binder IL-9.5 IL-9.5FG or IL-9.5L	<u>Allowed Alone or in Combination</u> ^{5/} : Crushed Gravel Carbonate Crushed Stone ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{4/} Crushed Concrete ^{3/}	
HMA High ESAL	D Surface and Binder IL-9.5 or IL-9.5FG	<u>Allowed Alone or in Combination</u> ^{5/} : Crushed Gravel Carbonate Crushed Stone (other than Limestone) ^{2/} Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag ^{4/}	
		<u>Other Combinations Allowed:</u>	
		<i>Up to...</i>	<i>With...</i>
		25% Limestone	Dolomite
		50% Limestone	Any Mixture D aggregate other than Dolomite
		75% Limestone	Crushed Slag (ACBF) or Crushed Sandstone
HMA High ESAL	E Surface IL-9.5 SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> ^{5/ 6/} : Crushed Gravel 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 ^{2/}	Any Mixture E aggregate

Use	Mixture	Aggregates Allowed	
		75% Dolomite ^{2/}	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone
		75% Crushed Gravel ^{2/}	Crushed Sandstone, Crystalline Crushed Stone, Crushed Slag (ACBF), or Crushed Steel Slag
HMA High ESAL	F Surface IL-9.5 SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination</u> ^{5/ 6/} :	
		Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag No Limestone.	
		<u>Other Combinations Allowed:</u>	
		<u>Up to...</u>	<u>With...</u>
		50% Crushed Gravel ^{2/} or Dolomite ^{2/}	Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone

- 1/ Crushed steel slag allowed in shoulder surface only.
- 2/ Carbonate crushed stone (limestone) and/or crushed gravel shall not be used in SMA Ndesign 80.
- 3/ Crushed concrete will not be permitted in SMA mixes.
- 4/ Crushed steel slag shall not be used as binder.
- 5/ When combinations of aggregates are used, the blend percent measurements shall be by volume."
- 6/ Combining different types of aggregate will not be permitted in SMA Ndesign 80."

HOT-MIX ASPHALT BINDER AND SURFACE COURSE (D-1)

Effective: November 1, 2019

Revised: January 1, 2025

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 ^{1/}
	SMA 12.5 ^{2/}	CA 13 ^{4/} , CA 14, or CA 16
	SMA 9.5 ^{2/}	CA 13 ^{3/4/} or CA 16 ^{3/}
	IL-9.5	CA 16, CM 13 ^{4/}
	IL-9.5FG	CA 16
HMA Low ESAL	IL-19.0L	CA 11 ^{1/}
	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 the fine aggregates 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 Standard Specifications to read:

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

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 Note 2. and add Note 6 to Article 1030.02 of the Standard Specifications to read:

"Item	Article/Section
(g)Performance Graded Asphalt Binder (Note 6)	1032
(h) Fibers (Note 2)	

Note 2. 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 6. 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.."

Revise table in Article 1030.05(a) of the Standard Specifications to read:

"MIXTURE COMPOSITION (% PASSING)" ^{1/}												
Sieve Size	IL-19.0 mm		SMA 12.5		SMA 9.5		IL-9.5mm		IL-9.5FG		IL-4.75 mm	
	min	max	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		100
3/8 in. (9.5 mm)				65	90	100	90	100	90	100		100
#4 (4.75 mm)	40	60	20	30	36	50	34	69	60	75 ^{6/}	90	100
#8 (2.36 mm)	20	42	16	24 ^{4/}	16	32 ^{4/}	34 ^{5/}	52 ^{2/}	45	60 ^{6/}	70	90

#16 (1.18 mm)	15	30					10	32	25	40	50	65
#30 (600 μm)			1 2	16	12	18			15	30		
#50 (300 μm)	6	15					4	15	8	15	15	30
#100 (150 μm)	4	9					3	10	6	10	10	18
#200 (75 μm)	3.0	6.0	7. 0	9. 0 ^{3/}	7.5	9. 5 ^{3/}	4.0	6.0	4.0	6.5	7.0	9.0 ^{3/}
#635 (20 μm)			≤ 3.0		≤ 3.0							
Ratio Dust/Asphalt Binder		1.0		1. 5		1. 5		1.0		1.0		1.0

Based on percent of total aggregate weight.

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

Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer.

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.

When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted below 34 percent.

When the mixture is used as a binder, the maximum shall be increased by 0.5 percent passing."

Revise Article 1030.05(b) of the Standard Specifications to read:

(b) Volumetric Requirements. The target value for the air voids of the HMA shall be 4.0 percent, for IL-4.75 and SMA mixtures 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.

	Voids in the Mineral Aggregate (VMA), % Minimum for Ndesign				
Mix Design	30	50	70	80	90
IL-19.0		13.5	13.5		13.5
IL-9.5		15.0	15.0		
IL-9.5FG		15.0	15.0		
IL-4.75 ^{1/}		18.5			
SMA-12.5 ^{1/2/5/}				17.0 ^{3/} /16.0 ^{4/}	
SMA-9.5 ^{1/2/5/}				17.0 ^{3/} /16.0 ^{4/}	
IL-19.0L	13.5				

IL-9.5L	15.0				
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Maximum draindown shall be 0.3 percent according to Illinois Modified AASHTO T 305.

The draindown shall be determined at the JMF asphalt binder content at the mixing temperature plus 30°F.

Applies when specific gravity of coarse aggregate is ≥ 2.760 .

Applies when specific gravity of coarse aggregate is < 2.760 .

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"

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

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

Revise the first and second paragraphs of Articles 1030.06(c)(2) of the Standard Specifications to read:

"(2) Personnel. The Contractor shall provide a QC Manager who shall have overall responsibility and authority for quality control. This individual shall maintain active certification as a Hot-Mix Asphalt Level II technician.

In addition to the QC Manager, the Contractor shall provide sufficient personnel to perform the required visual inspections, sampling, testing, and documentation in a timely manner. Mix designs shall be developed by personnel with an active certification as a Hot-Mix Asphalt Level III technician. Technicians performing mix design testing and plant sampling/testing shall maintain active certification as a Hot-Mix Asphalt Level I technician. The Contractor may provide a technician trainee who has successfully completed the Department's "Hot-Mix Asphalt Trainee Course" to assist in the activities completed by a Hot-Mix Asphalt Level I technician for a period of one year after the course completion date. The Contractor may also provide a Gradation Technician who has successfully completed the Department's "Gradation Technician Course" to run gradation tests only under the supervision of a Hot-Mix Asphalt Level II Technician. The Contractor shall provide a Hot-Mix Asphalt Density Tester who has successfully completed the Department's "Nuclear Density Testing" course to run all nuclear density tests on the job site."

Add Article 1030.06(d)(3) to the Standard Specifications to read:

"(3) The Contractor shall take possession of any Department unused backup or dispute resolution HMA mixture samples or density specimens upon notification by the Engineer. The Contractor shall collect the HMA mixture samples or density specimens from the location designated by the Engineer. The HMA mixture samples or density specimens may be added to RAP stockpiles according to Section 1031."

Revise the second paragraph of Articles 1030.07(a)(11) and 1030.08(a)(9) of the Standard Specifications to read:

“When establishing the target density, the HMA maximum theoretical specific gravity (Gmm) will be based on the running average of four available Department test results for that project. If less than four Gmm test results are available, an average of all available Department test results for that project will be used. The initial Gmm will be the last available Department test result from a QMP project. If there is no available Department test result from a QMP project, the Department mix design verification test result will be used as the initial Gmm.”

Revise the following table and notes in Article 1030.09 (c) of the Standard Specifications to read:

CONTROL LIMITS						
Parameter	IL-19.0, IL-9.5, IL-9.5FG, IL-19.0L, IL-9.5L		SMA-12.5, SMA-9.5		IL-4.75	
	Individual Test	Moving Avg. of 4	Individual Test	Moving Avg. of 4	Individual Test	Moving Avg. of 4
% Passing: ^{1/}						
1/2 in. (12.5 mm)	± 6 %	± 4 %	± 6 %	± 4 %		
3/8 in. (9.5mm)			± 4 %	± 3 %		
# 4 (4.75 mm)	± 5 %	± 4 %	± 5 %	± 4 %		
# 8 (2.36 mm)	± 5 %	± 3 %	± 4 %	± 2 %		
# 16 (1.18 mm)			± 4 %	± 2 %	± 4 %	± 3 %
# 30 (600 µm)	± 4 %	± 2.5 %	± 4 %	± 2.5 %		
Total Dust Content # 200 (75 µm)	± 1.5 %	± 1.0 %			± 1.5 %	± 1.0 %
Asphalt Binder Content	± 0.3 %	± 0.2 %	± 0.2 %	± 0.1 %	± 0.3 %	± 0.2 %
Air Voids ^{2/}	± 1.2 %	± 1.0 %	± 1.2 %	± 1.0 %	± 1.2 %	± 1.0 %
Field VMA ^{3/}	-0.7 %	-0.5 %	-0.7 %	-0.5 %	-0.7 %	-0.5 %

1/ Based on washed ignition oven or solvent extraction gradation.

2/ The air voids target shall be a value equal to or between 3.2 % and 4.8 %.

3/ Allowable limit below minimum design VMA requirement.

Revise Article 1030.09(g)(2) of the Standard Specifications to read:

“(2)The Contractor shall complete split verification sample tests listed in the Limits of Precision table in Article 1030.09(h)(1).”

In the Supplemental Specifications, replace the revision for the end of the third paragraph of Article 1030.09(h)(2) with the following:

“When establishing the target density, the HMA maximum theoretical specific gravity (Gmm) will be the Department mix design verification test result.”

Add after third sentence of Article 1030.09(b) 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.”

Revise Table 1 and Note 4/ of Table 1 in Article 406.07(a) of the Standard Specifications to read:

	Breakdown/Intermediate Roller (one of the following)	Final (one or more of the following) Roller of	Density Requirement
IL-9.5, IL-9.5FG, IL-19.0 ^{1/}	V _D , P, T _B , 3W, O _T , O _B	V _S , T _B , T _F , O _T	As specified in Section 1030
IL-4.75 and SMA ^{3/ 4/}	T _B , 3W, O _T	T _F , 3W	As specified in Section 1030
Mixtures on Bridge Decks ^{2/}	T _B	T _F	As specified in Articles 582.05 and 582.06.

“4/ The Contractor shall provide a minimum of two steel-wheeled tandem rollers (T_B), and/or three-wheel (3W) rollers for breakdown, except one of the (T_B) or (3W) rollers shall be 84 inches (2.14 m) wide and a weight of 315 pound per linear inch (PLI) (5.63 kg/mm) and one of the (T_B) or (3W) rollers can be substituted for an oscillatory roller (O_T). T_F rollers shall be a minimum of 280 lb/in. (50 N/mm). The 3W and T_B rollers shall be operated at a uniform speed not to exceed 3 mph (5 km/h), with the drive roll for T_B rollers nearest the paver and maintain an effective rolling distance of not more than 150 ft (45 m) behind the paver.”

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}.”

Revise first paragraph of Article 1030.10 of the Standard Specifications to read:

“A test strip of 300 ton (275 metric tons), except for SMA mixtures it will be 400 ton (363 metric ton), will be required for each mixture on each contract at the beginning of HMA production for 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.”

Revise fourth paragraph of Article 1030.10 of the Standard Specifications to read:

“When a test strip is constructed, the Contractor shall collect and split the mixture according to the document “Hot-Mix Asphalt Test Strip Procedures”. The Engineer, or a representative, shall deliver split sample to the District Laboratory for verification testing. The Contractor shall complete mixture tests stated in Article 1030.09(a). Mixture sampled shall include enough material for the Department to conduct mixture tests detailed in Article 1030.09(a) and in the document “Hot-Mix Asphalt Mixture Design Verification Procedure” Section 3.3. The mixture

test results shall meet the requirements of Articles 1030.05(b) and 1030.05(d), except Hamburg wheel tests will only be conducted on High ESAL mixtures during production.”

MAINTENANCE OF ROADWAYS (D-1)

Effective: September 30, 1985

Revised: November 1, 1996

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

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

PUBLIC CONVENIENCE AND SAFETY

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

“Presidents Day, 1st Day of Passover, Good Friday, Rosh Hashanah, Yom Kippur, 1st Day of Hanukkah, Christmas Eve.”

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.”

STATUS OF UTILITIES (D-1)

Effective: June 1, 2016

Revised: April 1, 2025

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

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	DURATION OF TIME
No conflicts to be resolved	N/A	N/A	N/A	N/A

Stage 1

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	DURATION OF TIME
No conflicts to be resolved	N/A	N/A	N/A	N/A

Stage 2

STAGE / LOCATION	TYPE	DESCRIPTION	RESPONSIBLE AGENCY	DURATION OF TIME
Along face of sidewalk parkway Sta. 14+00 to Sta. 29+00 LT	Gas	Conflict with proposed light pole foundations and conduit	Peoples Gas	42 days

No conflicts to be resolved (or if there are conflicts, they are to be listed as noted above)

Pre-Stage: _____ Days Total Installation

Stage 1: 42 Days Total Installation

Stage 2: _____ 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
Astound (Fka Rcn)	William Ng Juan Delreal	(312) 505-1706	William.Ng@Astound.Com Email Plans On Atlas Request And Plan Submittals To Juan.Delreal@Astound.Com
At&T (Distribution)	N/A	N/A	G1629@Att.Com Jm548w@Att.Com Email Atlas Request To: G11629@Att.Com Email Plans To: G05256@Att.Com
At&T (Tcg) Teleport Communications	Tim Lapointe	(224) 229-5862	Email: TI0695@Att.Com Cc: Tamara Booker Th3913@Att.Com
Comcast	Martha Gieras Ted Wyman	(224) 229-5862	Martha_Gieras@Cable.Comcast.Com Ted_Wyman@Comcast.Com
Comed Electronic-Plan Submittal (Ref #H26504sko)	Lisa Argast	(630) 576-7094 (630) 437-3381 (630) 576-7094	Plansubmittalsandmaprequest@Exeloncorp.Com Lisa.Argast@Exeloncorp.Com
Mci-Verizon Business	N/A	(800) 492-3100	Investigations@Verizon.Com
Metropolitan Water Reclamation District	Joseph Schuessler	(312) 751-3236	Oseph.Schuessler@Mwrdr.Org
Nicor Gas (Nicor Eng. #M15792)	Charles "Chip" Parrott	(630) 388-3319 (630) 388-2362	Gasmaps@Southernco.Com
Peoples Gas	Tony Godek Abdul Abbas	(312) 240-4560 (872)314-5076	William.Ng@Astound.Com Email Plans On Atlas Request And Plan Submittals To Juan.Delreal@Astound.Com
Mobilitie Llc	Glenn Zebrowski	(630) 423-2787	Glenn.Zebrowski.Mobilitiechicago@Gprsinc.Com 6304232787
Crowncastle	Joseph Mellenthin	(630) 480-5194	Joseph Mellenthin Joseph.Mellenthin@Crowncastle.Com
Comcast	Odell Faniel	(312) 859-8182	Odell_Faniel_Odell_Faniel@Cable.Comcast.Com
Comed - Transmission	Christopher Elion	(773) 892-6391	Christopher.Elion@Comed.Com
Level 3 Communications - Centurylink	Samantha Curley	(845) 282-6962	Scurley@Hbkengineering.Com
Digital Realty Trust - Lakeside Technology Center	Samantha Curley	(845) 282-6962	Scurley@Hbkengineering.Com
Abovenet - Zayo Communications Inc	Samantha Curley	(845) 282-6962	Scurley@Hbkengineering.Com

Contract 61L92
Devon Avenue Improvement (Lincoln Ave to McCormick Blvd)
Village of Lincolnwood / City of Chicago, Cook County
Section 16 -00061-00-LS

Astound	Samantha Curley	(845) 282-6962	Scurley@Hbkengineering.Com
Centrio Energy	Samantha Curley	(845) 282-6962	Scurley@Hbkengineering.Com
Crosstown	Samantha Curley	(845) 282-6962	Scurley@Hbkengineering.Com
Mci	Leotis Anderson	(312)612- 5216 X205	Landerson@Telecom-Eng.Com
Comed - Distribution	Arturo Salinas	(779) 231-2238	Arturo.Salinas@Comed.Com
Att - Local Network Services	Timothy Lapointe	(281) 352-3631	TI0695@Att.Com
M W R D	Khaja Moinuddin	(312) 751-3139	Moinuddink@Mwrd.Org

UTILITIES TO BE WATCHED AND PROTECTED

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

Pre-Stage

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER
N/A	N/A	N/A	N/A

Stage 1

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER
Parkway Sta 14+00 to Sta 31+00 LT	Underground Utility	Trees, storm sewers, water mains, OH RRFB foundations/conduits, and light pole foundations/conduits with watermain	Village

Stage 2

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER
Along Face Of Sidewalk Parkway Sta 14+00 To Sta 29+00 LT	Underground Utility	Trees, Storm Sewers, Water Mains, OH RRFB Foundations/Conduits, And Light Pole Foundations/Conduits With Gas	Nicor
Parkway Along ROW Sta 25+00 To Sta 30+00 LT	Aerial	Light Pole With Comed	Comed
Parkway Sta 23+50 To Sta 24+00	Underground Utility	OH RRFB Foundations/Conduits	MWRD
Parkway Sta 14+50 To Sta 15+00	Manhole For Underground Utility	Raised Median Curb	MWRD

No facilities requiring extra consideration *(or listed as noted above)*

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

Contract 61L92
Devon Avenue Improvement (Lincoln Ave to McCormick Blvd)
Village of Lincolnwood / City of Chicago, Cook County
Section 16 -00061-00-LS

Agency/Company Responsible to Resolve Conflict	Name of contact	Phone	E-mail address
Astound (Fka Rcn)	William Ng Juan Delreal	(312) 505-1706	William.Ng@Astound.Com Email Plans On Atlas Request And Plan Submittals To Juan.Delreal@Astound.Com
At&T (Distribution)	N/A	N/A	G1629@Att.Com Jm548w@Att.Com Email Atlas Request To: G11629@Att.Com Email Plans To: G05256@Att.Com
At&T (Tcg) Teleport Communications	Tim Lapointe	(224) 229-5862	Email: TI0695@Att.Com Cc: Tamara Booker Th3913@Att.Com
Comcast	Martha Gieras Ted Wyman	(224) 229-5862	Martha_Gieras@Cable.Comcast.Com Ted_Wyman@Comcast.Com
Comed Electronic-Plan Submittal (Ref #H26504sko)	Lisa Argast	(630) 576-7094 (630) 437-3381 (630) 576-7094	Plansubmittalsandmaprequest@Exeloncorp.Com Lisa.Argast@Exeloncorp.Com
Mci-Verizon Business	N/A	(800) 492-3100	Investigations@Verizon.Com
Metropolitan Water Reclamation District	Joseph Schuessler	(312) 751-3236	Oseph.Schuessler@Mwrld.Org
Nicor Gas (Nicor Eng. #M15792)	Charles "Chip" Parrott	(630) 388-3319 (630) 388-2362	Gasmaps@Southernco.Com
Peoples Gas	Tony Godek Abdul Abbas	(312) 240-4560 (872)314-5076	William.Ng@Astound.Com Email Plans On Atlas Request And Plan Submittals To Juan.Delreal@Astound.Com
Mobilitie Llc	Glenn Zebrowski	(630) 423-2787	Glenn.Zebrowski.Mobilitiechicago@Gprsinc.Com 6304232787
Crownccastle	Joseph Mellenthin	(630) 480-5194	Joseph Mellenthin Joseph.Mellenthin@Crownccastle.Com
Comcast	Odell Faniel	(312) 859-8182	Odell_Faniel@Cable.Comcast.Com
Comed - Transmission	Christopher Elion	(773) 892-6391	Christopher.Elion@Comed.Com
Level 3 Communications - Centurylink	Samantha Curley	(845) 282-6962	Scurley@Hbkengineering.Com
Digital Realty Trust - Lakeside Technology Center	Samantha Curley	(845) 282-6962	Scurley@Hbkengineering.Com
Abovenet - Zayo Communications Inc	Samantha Curley	(845) 282-6962	Scurley@Hbkengineering.Com
Astound	Samantha Curley	(845) 282-6962	Scurley@Hbkengineering.Com
Centrio Energy	Samantha Curley	(845) 282-6962	Scurley@Hbkengineering.Com
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Mci	Leotis Anderson	(312)612-5216 X205	Landerson@Telecom-Eng.Com
Comed - Distribution	Arturo Salinas	(779) 231-2238	Arturo.Salinas@Comed.Com
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M W R D	Khaja Moinuddin	(312) 751-3139	Moinuddink@Mwrld.Org

The above represents the best information available to the Department and is included for the convenience of the bidder. The days required for conflict resolution should be 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 contractor is responsible for contacting JULIE (or DIGGER within the City of Chicago) prior to any excavation work. Please note that IDOT electrical facilities are not part of the one-call locating services, such as JULIE or DIGGER.

If the contract requires the services of an electrical contractor, it is the contractor's responsibility, at their own expense, to locate existing IDOT electrical facilities before commencing work. For contracts that do not require an electrical contractor, the contractor may request one free locate of IDOT electrical facilities by contacting the Department's Electrical Maintenance Contractor. Additional locate requests will be at the contractor's expense.

The Department's Electrical Maintenance Contractor must be notified at least 72 hours in advance of the work by calling 773-287-7600 or emailing dispatch@meade100.com to arrange for the locating of underground electrical facilities.

Please note, the marking of underground facilities does not absolve the contractor of their responsibility to repair or replace any facilities damaged during construction at their expense.

TEMPORARY PAVEMENT (D1)

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.

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

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

KEEPING ARTERIAL ROADWAYS OPEN TO TRAFFIC

Effective: January 22, 2003

Revised: January 1, 2007

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

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

Arterial lane closures will only be permitted during the **off-peak** traffic volume hours. **Peak traffic volume hours are defined as weekdays (Monday through Friday) from 6:00 AM to 8:00 AM and 4:00 PM to 6:00 PM.**

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

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

SUPPLEMENTAL WATERING

IDOT D1 LSP Modified July 16, 2025

This work will include watering sod, trees, shrubs, vines, and perennials at the rates specified and as directed by the Engineer.

Schedule: Watering will only begin after the successful completion of all period of establishment requirements. However, if plant material requires additional watering due to extreme weather (drought/high temperatures) supplemental watering may be used to water during the period of establishment.

Water trees, shrubs, and vines every 7 days throughout the growing season (April 1 to November 30). Water perennials, plugs, and sod a minimum of twice a week. The Engineer may direct the Contractor to adjust the watering rate and frequency depending upon weather conditions. Do not overwater.

Watering must be completed in a timely manner. When the Engineer directs the Contractor to do supplemental watering, the Contractor must begin the watering operation within 24 hours of notice. **The Contractor shall give an approximate time window of when they will begin at the work location to the Engineer. The Engineer shall be present during the watering operation.** A minimum of 10 units of water per day must be applied until the work is complete.

Should the Contractor fail to complete the work on a timely basis or within such extended times as may have been allowed by the Department, the Contractor shall be liable to the Department liquidated damages as outlined in the **“Failure to Complete Plant Care and Establishment Work on Time” special provision.**

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 trees if the watering 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.

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

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

35 gallons per tree
25 gallons per large shrub
15 gallons per small shrub
4 gallons per vine
6 gallons per square yard for Perennial Beds
27 gallons per square yard for Sodded Areas

Method of Application: A spray nozzle that does not damage small plants must be used when watering all vegetation. Water shall be applied at the base of the plant to keep as much water as possible off plant leaves. An open hose may be used to water trees, shrubs, and seedlings if mulch and soil are not displaced by watering. The water shall be applied to individual plants in such a manner that the plant hole shall be saturated without allowing the water to overflow beyond the earthen saucer. Watering of plants in beds shall be applied in such a manner that all plant holes are uniformly saturated without allowing the water flow beyond the periphery of the bed. Water shall slowly infiltrate into soil and completely soak the root zone. The Contractor must supply metering equipment as needed to assure the specified application rate of water.

Method of Measurement: Supplemental watering will be measured in units of 1000 gallons of water applied as directed.

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

PORTLAND CEMENT CONCRETE SIDEWALK

Effective: October 26, 2022

Revised: August 2, 2024

CBBEL Modified

Description. Work under this item shall consist of placing and constructing portland cement concrete sidewalk and ADA ramps of the thickness specified in the plans, standard drawings and/or work order. This work includes furnishing and placing portland cement concrete on a prepared subgrade or subbase as detailed in the standard drawings. Work under this item shall be performed according to Sections 311 and 424 of the IDOT Standard Specifications for Road and Bridge Construction (SSRBC), except as herein modified.

Construction Requirements. The subgrade shall be leveled and compacted to the satisfaction of the Engineer. If any subgrade is determined by the Engineer to be unstable or unsuitable it shall be removed as directed and replaced with subbase granular material, type B as directed by Engineer. Any required subgrade removal shall be at a depth of no less than 2 inches with the remaining subgrade prepared level and compacted to the satisfaction of the Engineer. Placement of the subbase granular material, type B and shall be as directed by the Engineer and compaction shall be according to Article 311.05(b) of the SSRBC.

Expansion joints shall be placed at intervals of not more than 50 feet.

Detectable warning tiles for ADA ramps shall be installed according to the special provision Detectable Warning Tiles.

Method of Measurement. This work will be measured for payment in place and the area computed in square feet. ADA ramps will include the side curbs, side flares, level landing area, ramps and the sidewalk constructed between adjacent ramps within the corner radius.

Detectable warning tiles will be measured for payment in place and the area computed in square feet.

The removal of any subgrade material will be measured for payment and the volume computed in cubic yards.

Subgrade or granular subbase material used for leveling will not be measured for payment. Granular subbase material used for replacing unstable or unsuitable material will be measured for payment in place and the volume computed in cubic yards.

Basis of Payment. This work will be paid at the contract unit price per square foot for PORTLAND CEMENT CONCRETE SIDEWALK of the thickness specified.

PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH

Effective: October 24, 2022
Revised: August 8, 2024
CBBEL Modified

Description. Work under this item shall consist of placing high early strength portland cement driveway pavement, of the thickness specified in the plans, standard drawings, and/or work order. This work includes furnishing and placing high early strength portland cement concrete on a prepared subgrade and/or subbase with the required epoxy coated tie and dowel bars as detailed in the standard drawings. Work under this item shall be performed according to Sections 353, 420 and 423 of the IDOT Standard Specifications for Road and Bridge Construction (SSRBC), except as herein modified.

Materials. Subbase granular material, type B shall be a CA06 gradation meeting the requirements of Article 1004.04.

High Early Strength (HES) concrete shall conform to the requirements of a class PV concrete, except that the use of Type III cement shall not be permitted, and an IDOT/CDOT approved PP-1 patching or high early PV mixture shall be used, final acceptance for use is at the discretion of the Engineer. The class PV minimum strength requirement of 3,500 psi shall be achieved within 3 days.

A protective coat will not be required for any HES concrete regardless of placement date.

Construction. Upon removal of any existing pavement the Engineer shall verify the subbase material is clean, uncontaminated with subgrade, or any other foreign material. The depth of the subbase shall be a minimum of 8 inches, or as required in the standard drawings, and show no signs of being unstable. If the Engineer determines the subbase material is thin, unstable, or contaminated the existing subbase material shall be removed to the satisfaction of the engineer and replaced with a minimum of 8 inches of subbase granular material, type B or as required in the standard drawings.

If no existing subbase material is present the subgrade shall be excavated to accommodate the placement and compaction of a minimum of 8 inches of subbase granular material, type B or as required in the standard drawings. Prior to placement of the subbase material the subgrade shall be leveled and compacted to the satisfaction of the Engineer. If the Engineer determines the subgrade is unstable or unsuitable it shall be removed as directed and replaced with subbase granular material, type B. Any required subgrade removal shall be at a depth that will accommodate no less than 8 inches of subbase material, type B or as required in the standard drawings, with the remaining subgrade prepared level and compacted to the satisfaction of the Engineer.

Placement of all subbase granular material, type B shall be as directed by the Engineer and compaction shall be according to Article 311.05(b).

HES concrete driveway pavement shall be placed, struck-off, and finished according to Article 423.06.

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

The removal of any subbase or subgrade material will be measured for payment and the volume computed in cubic yards.

Granular subbase will be measured for payment in place and the volume computed in cubic yards.

Epoxy coated tie and dowel bars are included in the cost of this pay item.

Basis of Payment. This work will be paid at the contract unit price per square yard for PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT of the thickness specified.

WATER MAIN

Description: This work shall consist of the installation of ductile iron water main which shall be constructed in accordance with the applicable portions of Section 561 of the Standard Specifications, Section 41 of the Water and Sewer Specifications and applicable Village Standard Details, except as modified herein.

Construction Requirements: The water main and fittings shall be ductile cast iron, cement lined, with push-on joints, Class 52, of the size as designated in the plans, and shall conform to the latest ANSI A21.51/AWWA C151, C111 and C104. The water main shall be zinc coated and wrapped in an enhanced polywrap as described in this specification. Further details and notes regarding materials, installation and testing for ductile iron water main are provided elsewhere.

Wherever water is encountered in the trench, it shall be removed during pipe laying and jointing operations. Provisions shall be made to prevent floating of the pipe. Any dewatering of the trenches shall be included in the cost of this item. At no time shall trench water be allowed to enter the water main. Water main shall be installed to provide a minimum cover of 5.5', and up to a maximum cover of 6.0' except where required at special crossings. Depths of cover over 6.0' will only be allowed when shown on the plans or as otherwise approved by the Engineer.

The pipe shall be handled in such a manner as to prevent damage to the pipe or coating. Accidental damage to the pipe or coating shall be repaired to the satisfaction of the Engineer, or be removed from the job, and the methods of handling shall be corrected to prevent further damage when called to the attention of the Contractor.

The pipe shall be inspected by the Engineer for defects while suspended above grade.

Dirt or other foreign material shall be prevented from entering the pipe or pipe joint during handling or laying operations, and any pipe or fitting that has been installed with dirt or foreign material therein shall be removed, cleaned and re-laid. At times when pipe laying is not in progress, the open ends of the pipe shall be closed by a watertight plug, or by other means subject to the review of the Engineer, to ensure absolute cleanliness inside the pipe. All cutting of existing water main pipe for the insertion of valves, crosses, tees or other fittings shall be performed without damage to the pipe or pipe lining, and so as to leave a smooth end at right angles to the axis of the pipe. Any damaged water main shall be re-cut and replaced by the Contractor at his sole expense.

All pipe joints at any valve or fitting, including those where the proposed water main ties into the existing water main, shall be restrained with retainer glands. Retainer glands shall be Mega Lugs by EBAA Iron, or an equal approved by the Engineer. Contractor shall install Field-Lok gaskets prior to and after any bend or valve. Field-Lok gaskets shall be placed in accordance with the requirements shown in the table for THRUST RESTRAINT FOR BURIED WATERMAIN on drawing number DET05 in the plans. Restrained joints will be paid for as DUCTILE IRON WATER MAIN FITTINGS. Also, all horizontal bends, crosses, and tees shall be additionally restrained with thrust blocks as shown on the details in the plans. The cost of the thrust blocks shall be considered included in the cost of the ductile iron water main.

Disinfection of the water main shall be performed using only liquid chlorine. Under certain conditions when the use of liquid chlorine is not practical, chlorine tablets will be allowed with the approval of the Engineer.

Any damage to adjacent sewer main and/or sewer services shall be repaired in-kind with SDR26 or C900 pipe (if necessary for clearance) and shall be included in the cost of this item.

ZINC COATING FOR DUCTILE IRON WATER MAIN

The exterior of the ductile iron pipe shall be coated with arc-sprayed zinc. The coating materials shall be metallic zinc wire with a zinc content of at least 99.99% by mass, and bituminous paint topcoat compatible with zinc.

The metallic zinc coating shall be applied by an arc spray thermal spray process in which the metallic zinc is heated to a molten state and projected in small droplets by clean and dry compressed air onto the external pipe surface.

The metallic zinc coating shall cover the outside exterior pipe surface and shall be free from bare patches or areas with lack of adhesion which reveals bare iron pipe surface. A spiraled appearance is permissible provided the zinc coating masses comply with the requirements described within this specification.

Damaged areas of the zinc coating caused by handling are acceptable, provided the area of damage is less than 5 cm² per square meter and that the minor dimension of the damaged area does not exceed 5mm. Greater areas of damage shall be repaired utilizing either 1) metallic zinc spray complying with this specification, or 2) application of a zinc-rich paint containing more than 85% zinc by mass in the dried film. One recommended zinc rich paint repair material which meets this requirement is Tnemec-Zinc 90-98 manufactured by the Tnemec Company in Kansas City, Missouri.

After zinc coating, the pipe shall be given a finishing layer of bituminous paint topcoat compatible with zinc. Application of the finishing layer may be done by spray, brush, or roller at the manufacturer's discretion. It shall uniformly cover the zinc coating and be free from bare patches or significant lack of adhesion. Repairs to the finishing layer shall be in accordance with the manufacturer's recommendations. The mean dry film thickness of the finishing layer shall not be less than 50 µm (2 mils) and to avoid blistering and permit proper performance of the zinc coating, shall not exceed 250 µm (10 mils).

ENHANCED POLYWRAP FOR DUCTILE IRON PIPE

All ductile iron pipe and appurtenances shall be protected against corrosion with V-BIO® Enhanced Polywrap and shall meet or exceed ANSI/AWWA C105/A21.5, ASTM A674 and ISO 8180.

Method of Measurement and Basis of Payment: This work will be paid for at the contract unit price per foot for DUCTILE IRON WATER MAIN, of the diameter specified, measured in place. This price shall include the cost of all pipe, joint materials, restraint devices and thrust blocks, hydrostatic pressure tests, leakage tests, disinfecting of the water main, enhanced polywrap, zinc coating, excavation, bedding and select (common) backfill. All trench backfill, pavement removal and replacement, fittings, and other surface restoration items as shown on the plans and specified herein shall be paid for separately.

This item shall also include any and all items such as temporary plugs, corporation stops (for testing), water pumps, gauges, meters and laboratory test costs, and all other items necessary to complete this work as specified.

WATER VALVES

Description: Water valves shall be of the gate valve type suitable for ordinary water-works service, intended to be installed in a normal position on buried pipe lines for water distribution systems.

Construction Requirements: As a minimum, all gate valves shall, in design, material and workmanship, conform to the standards of the latest AWWA C500 and AWWA C509. All materials used in the manufacture of waterworks gate valves shall conform to the AWWA standards designed for each material listed.

Materials:

1. **Manufacturer and Marking** - The gate valves shall be standard pattern and shall have the name or mark of the manufacturer, size and working pressure plainly cast in raised letters on the valve body. Gate valves shall be Mueller A-2361 Resilient Wedge Gate Valves.

2. **Type and Mounting** - The valve bodies shall be cast iron, mounted with approved non-corrosive metals. All wearing surfaces shall be bronze or other approved non-corrosive material and there shall be no moving bearing or contact surfaces of iron in contact with iron. Contact surfaces shall be machined and finished in the best workmanlike manner, and all wearing surfaces shall be easily renewable. All trim bolts shall be 300 series stainless steel.

The resilient-seated disc wedge shall be of the resilient wedge fully-supported type. Solid guide lugs shall travel within channels in the body of the valve. The disc and guide lugs shall be fully (100%) encapsulated in SBR (styrene butadiene) rubber.

Disc wedges that are not 100% fully encapsulated shall not be acceptable. Guide caps of an acetal copolymer bearing material shall be provided to protect the rubber-encapsulated solid guide lugs from abrasion for long life and ease of operation.

All internal and external exposed ferrous surfaces of the valve shall be coated with a fusion-bonded, thermosetting powder epoxy coating conforming to AWWA C550 and certified to NSF 61. Coating shall be non-toxic and shall impart no taste to water. Coating thickness shall be nominal 10 mils.

The stem shall be of high tensile strength bronze or other approved non-corrosive metal, providing 70,000 PSI tensile strength with 15% elongation and a yield strength of 30,000 PSI. All nonferrous bushings shall be of substantial thickness, tightly fitted and pressed into machine seats. All valves shall open by turning to the left (counterclockwise), unless otherwise specified.

3. **End Connections** - End connections of gate valves shall consist of Push On (Rubber-gasket) Joints.

All gate valves are to be installed in concrete valve vaults as detailed in the plans. The valves shall be wrapped with polyethylene film, as specified in the Special Provision for "Ductile Iron Water Main", included elsewhere herein. Valves shall be installed using stainless steel bolts.

Method of Measurement and Basis of Payment: This work will be paid for at the contract unit price each for WATER VALVES, of the size specified. This price shall include the cost of all labor, materials and equipment necessary to install the gate valve in a valve vault, including polyethylene wrapping, as detailed in the plans and to the satisfaction of the ENGINEER. The valve vault will be paid for separately.

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. The fire hydrants shall be removed to a minimum depth of 3 feet below grade. The fire hydrants to be removed shall become the property of the Village and shall be delivered to the Public Works Facility unless otherwise directed by the ENGINEER.

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

FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX

Description: This work shall consist of furnishing new fire hydrants of the type and size specified below.

Materials: Hydrants shall be Mueller Super Centurion A-425. Threads on nozzles and caps shall be national standard thread and shall conform to the standard adopted by the Village. 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 "Red" color with weather shield and shall have traffic flange construction design with a break way flange and mechanism at the ground line. The Contractor shall check with the Engineer regarding the color of the transmission main fire hydrants.

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 of the same type as specified under standard drawing #14 of the Standard Specifications for Water and Sewer Main Construction in Illinois. The word "WATER" shall be on all valve boxes. A valve box stabilizer shall be rubber of the type Adapter Inc. Stabilizer and shall be installed between the valve box and the auxiliary valve.

A hydrant and valve box grip shall be furnished and installed to hold the valve box in place during the backfilling operation. The assembly is available through BLR Enterprises @ 630-554-0319.

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. Hydrants shall be placed on a large, flat stone, and shall have a minimum of one-half cubic yard (1/2cy.) of gravel or porous stone 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.

Basis of Payment: This work will be paid for at the contract unit price each for FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX.

CATCH BASINS TO BE CLEANED

CLEANING EXISTING MANHOLE OR HANDHOLE

CLEANING EXISTING INLETS

General Requirements. This item must consist of furnishing all labor, materials, tools and equipment required for cleaning CATCH BASINS, MANHOLE, HANDHOLE, and INLET.

Any CATCH BASINS, MANHOLE, HANDHOLE, and INLET within the limits of construction, which is not to be adjusted, must be cleaned at the direction of the Engineer. The cleaning must consist of the removal of any accumulations of silt, debris, or foreign matter of any kind down to one foot below the invert of the outfall pipe. The cleaning must be done after the placing of the planting soil and sod is completed.

If the need for cleaning is the result of the Contractor's construction work, that entire section of sewer between manholes must be thoroughly cleaned and rodded at no cost to the Contract.

The Contractor, in accordance with the requirements of Article 202.03 of the Standard Specifications For Road and Bridge Construction must dispose of all material resulting from the cleaning of catch basins.

Method of Measurement. CATCH BASINS TO BE CLEANED, and CLEANING EXISTING MANHOLE OR HANDHOLE, and CLEANING EXISTING INLET will be measured on an each basis.

Basis of Payment. The work under this item will be paid for at the contract unit price per each as shown in the Schedule of Unit Prices for CATCH BASINS TO BE CLEANED, or CLEANING EXISTING MANHOLE OR HANDHOLE, or CLEANING EXISTING INLET, which price will include removing and disposing of the existing debris.

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (Project specific)

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.

Soil Disposal Analysis. When the waste material requires sampling for landfill disposal acceptance, the Contractor shall secure a written list of the specific analytical parameters and analytical methods required by the landfill. The Contractor shall collect and analyze the required number of samples for the parameters required by the landfill using the appropriate analytical procedures. A copy of the required parameters and analytical methods (from landfill email or on landfill letterhead) shall be provided as Attachment 4A of the BDE 2733 (Regulated Substances Final Construction Report). The price shall include all sampling materials and effort necessary for collection and management of the samples, including transportation of samples from the job site to the laboratory. The Contractor shall be responsible for determining the specific disposal facilities to be utilized; and collect and analyze any samples required for disposal facility acceptance using a NELAP certified analytical laboratory registered with the State of Illinois.

Site 3231V2-1 Fifth Third Bank: 6401 N. Lincoln Avenue, Lincolnwood, Cook County

- Station 13+60 to 14+10 (CL Devon Avenue), 0 to 75 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Lead, Manganese, Benzo(a)pyrene, and Dibenzo(a,h)anthracene.

Site 3231V2-4 Devon Lincoln Plaza: 3515-3521 W. Devon Avenue, Chicago, Cook County

- Station 13+70 to 15+15 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Carbazole, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Manganese, and Lead.
- Station 15+15 to 16+40 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)pyrene, Arsenic, Manganese, and Lead.
- Station 16+40 to 17+20 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, Manganese, and Lead.

Site 3231V2-6 Prudential Realty Co: 3520 W. Devon Avenue, Lincolnwood, Cook County

- Station 14+10 to 14+90 (CL Devon Avenue), 0 to 75 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Lead and Manganese.

Site 3231V2-7 Commercial Building: 3514-3518 W. Devon Avenue, Lincolnwood, Cook County

- Station 14+90 to 15+50 (CL Devon Avenue), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Lead and Manganese

Site 3231V2-8 Commercial Building: 3508-3510 W. Devon Avenue, Lincolnwood, Cook County

- Station 15+50 to 16+15 (CL Devon Avenue), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic, Lead, and Manganese.

Site 3231V2-10 Sigma Travels: 3500 W. Devon Avenue, Lincolnwood, Cook County

- Station 16+15 to 16+55 (CL Devon Avenue), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic, Lead, and Manganese.
- Station 16+55 to 17+40 (CL Devon Avenue), 0 to 75 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, Arsenic, Manganese, and Lead.

Site 3231V2-11 Taco Bell: 3511 W. Devon Avenue, Chicago., Cook County

- Station 17+20 to 17+50 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, Manganese, and Lead.
- Station 17+50 to 18+40 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.

Site 3231V2-13 Dairy Star: 3472 W. Devon Avenue, Lincolnwood, Cook County

- Station 17+40 to 18+30 (CL Devon Avenue), 0 to 75 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese, and Lead.

Site 3231V2-14 Bais Chaim Dovid: 3462 W. Devon Avenue, Lincolnwood, Cook County

- Station 18+30 to 19+30 (CL Devon Avenue), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Arsenic, Manganese, and Lead.

Site 3231V2-15 Pizza Hut: 3451 W. Devon Avenue, Chicago, Cook County

- Station 18+40 to 18+60 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.
- Station 18+60 to 19+60 (CL Devon Avenue), 0 to 50 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese.

Site 3231V2-17 Commercial Building: 3450-3458 W. Devon Avenue and 6402 N. Trumbull Avenue, Lincolnwood, Cook County

- Station 19+30 to 20+75 (CL Devon Avenue), 0 to 75 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese.

Site 3231V2-18 Auto Zone: 3425 W. Devon Avenue, Chicago, Cook County

- Station 19+60 to 20+65 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene, Lead, and Manganese.
- Station 20+65 to 20+85 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Lead and Manganese.

Site 3231V2-20 Vacant Lot: 3420 W Devon Avenue, Lincolnwood, Cook County

- Station 21+80 to 22+95 (CL Devon Avenue), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Lead and Manganese.
- Station 22+95 to 23+80 (CL Devon Avenue), 0 to 60 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene and Manganese.
- Station 23+80 to 24+00 (CL Devon Avenue), 25 to 60 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene and Manganese.

Site 3231V2-21 Post Office: 3401 W. Devon Avenue, Chicago, Cook County

- Station 20+85 to 21+85 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Lead and Manganese.
- Station 21+85 to 23+10 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Lead, Manganese, and Iron.
- Station 23+10 to 23+80 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Lead.
- Station 23+80 to 24+50 (CL Devon Avenue), 25 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Lead.

Site 3231V2-23 ROW: 3400 block of W. Devon Avenue, Chicago and Lincolnwood, Cook County

- Station 23+80 to 24+00 (CL Devon Avenue), 0 to 25 LT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(3). Contaminants of concern sampling parameters: Benzo(a)pyrene and Manganese.

- Station 24+00 to 24+50 (CL Devon Avenue), 0 to 25 LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese.
- Station 23+80 to 24+50 (CL Devon Avenue), 0 to 25 RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Lead.

Site 3231V2-25 Century 21 Affiliated: 3372-3374 W. Devon Avenue, Lincolnwood, Cook County

- Station 24+00 to 24+50 (CL Devon Avenue), 25 to 60 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese.
- Station 24+50 to 25+00 (CL Devon Avenue), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese.
- Station 25+00 to 25+25 (CL Devon Avenue), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Arsenic, Lead, and Manganese.

Site 3231V2-26 The Home Depot: 6211 N. Lincoln Avenue, Chicago, Cook County

- Station 24+50 to 25+65 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese.
- Station 25+65 to 26+60 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Manganese.
- Station 26+60 to 27+15 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic, Iron, Lead, and Manganese.

Site 3231V2-27 Commercial Building: 3350-3370 W. Devon Avenue, Lincolnwood, Cook County

- Station 25+25 to 27+40 (CL Devon Avenue), 0 to 65 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(2). Contaminants of concern sampling parameters: Arsenic, Manganese, and Lead.

Site 3231V2-30 CD One Price Cleaners: 3320 W. Devon Avenue, Lincolnwood, Cook County

- Station 27+40 to 28+35 (CL Devon Avenue), 0 to 65 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese, and Lead.

Site 3231V2-31 Chase Bank: 6350 N. McCormick Blvd., Chicago, Cook County

- Station 27+15 to 28+10 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). Contaminants of concern sampling parameters: Arsenic, Iron, Lead, and Manganese.
- Station 28+10 to 29+60 (CL Devon Avenue), 0 to 50 feet RT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with

Article 669.05(a)(1). Contaminants of concern sampling parameters: Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, and Lead.

Site 3231V2-32 Shore Galleries: 3318 W. Devon Avenue, Lincolnwood, Cook County

- Station 28+35 to 28+85 (CL Devon Avenue), 0 to 50 LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese, and Lead.

Site 3231V2-33 Currency Exchange: 3310 W. Devon Avenue, Lincolnwood, Cook County

- Station 28+85 to 29+05 (CL Devon Avenue), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Manganese, and Lead.

Site 3231V2-34 Libanais: 3300 W. Devon Avenue, Lincolnwood, Cook County

- Station 29+05 to 30+00 (CL Devon Avenue), 0 to 50 feet LT. The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). Contaminants of concern sampling parameters: Lead, and Manganese.

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.**

COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12

Description: This work shall consist of the construction of new concrete curb and gutter to match the existing curb and gutter type (except where otherwise noted on the plans) including all necessary excavation, embankment and doweling as shown in the detail on the plans and in accordance with Sections 606, 202, 205 and 311 of the STANDARD SPECIFICATIONS and as specified herein. Curb head and gutter pan size may vary and may not strictly meet a 6 inch right angled face and 12 inch gutter. For the purposes of this item, no differentiation shall be made between combination concrete curb and gutter and integrally-poured concrete curb and gutter. Subbase granular material shall be paid for separately. Concrete curb and gutter shall be constructed to the lines and grades established by the ENGINEER.

In addition to the requirements of Article 606.06 of the STANDARD SPECIFICATIONS the CONTRACTOR shall excavate all material necessary to build the proposed curb and gutter and proposed subbase in accordance with Section 202 of the STANDARD SPECIFICATIONS. The area between the edge of the existing pavement and the face of the new gutter shall be cleaned of all loose material and then filled with Class SI concrete to a minimum 6-inch width, 2" below the top of the proposed gutter flag, and is considered to be included in the item cost. Driveways shall not be removed for forming purposes unless approved by the ENGINEER.

CONTRACTOR shall use full forms on both sides of the pour - 9" minimum at edge of pavement and either 12" or 15" minimum at back of curb.

Contraction joints in the curb and gutter shall be coincident with and a prolongation of transverse joints or working cracks in adjacent PCC pavement. For HMA pavement sections, contraction joints shall be provided at uniform intervals not to exceed 15 feet.

Construction joints with dowel bars shall be provided at the end of a day's work. Transverse expansion joints (including two 1-1/8" diameter smooth coated dowel bars) shall be constructed at curvature points, and at additional locations designated by the ENGINEER. Cost of all joints shall be included with the curb, or curb and gutter item.

At each location where the new curb meets the existing curb, the existing and new curb shall be tied together with 1 - No. 8 epoxy coated smooth dowel bar, 18" long. Dowel shall be drilled and grouted into the existing curb.

Depressed curb for driveway openings, and at sidewalk ramps accessible to the disabled shall be constructed at the locations shown on the Drawings or designated by the ENGINEER. No additional compensation will be made for depressed curb at ramp or driveway locations.

The CONTRACTOR shall take care that any nails removed during formwork removal shall not be left in the street, sidewalk or adjacent parkways and shall be picked up by the CONTRACTOR immediately upon removal.

Locations where subgrade is unsuitable for installation shall be excavated in accordance with REMOVAL AND DISPOSAL OF UNSUITABLE MATERIALS at the discretion of the ENGINEER. REMOVAL AND DISPOSAL OF UNSUITABLE MATERIALS shall be paid for separately.

Method of Measurement: Shall be per Article 606.

Basis of Payment: This work will be paid for at the Contract Unit Price per foot of COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12, measured in place, which price shall include all materials, labor, tools, equipment, and any items, including pavement removal, excavation, dowel bars and reinforcement, expansion joints, and backfill necessary to satisfactorily complete the Work as described herein.

CONCRETE CURB, TYPE B AND CONCRETE CURB, TYPE M

Description. Work under these items shall be performed as detailed in the plans, standard drawings, work order and/or as directed by the Engineer, and according to Section 606 of the IDOT Standard Specifications for Road and Bridge Construction, IDOT Highway Standards, and to the City of Chicago Department of Transportation Rules and Regulations for Construction in the Public Way, except as herein modified.

Materials. Paint shall be according to Section 780 of the SSRBC.

Equipment. Equipment for painting the curb adjacent to fire hydrants shall be according to Section 780 of the SSRBC.

General Requirements. The Contractor is responsible for the correct lay-out of the proposed curb. In coordination with any required fire hydrant relocation, prior to installation of the curb and gutter, and this work is included in the cost of CONCRETE CURB, of the type specified.

In accordance with section 780 of the SSRBC, all curb installations adjacent to fire hydrants must be painted 'safety yellow' for 15 feet on each side of the fire hydrant except where the 15-foot dimension intersects a crosswalk, driveway or similar feature, and this work is included in the cost of CONCRETE CURB, of the type specified. Paint does not require glass beads and should be painted to have neat straight edges along back of curb and vertically up the curb face.

Method of Measurement. CONCRETE CURB, TYPE B and CONCRETE CURB, TYPE M will be measured per foot.

Basis of Payment. This work will be paid for at the contract unit price per foot for CONCRETE CURB, TYPE B, and CONCRETE CURB, TYPE M.

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.

COILABLE NON-METALLIC CONDUIT

Effective: May 22, 2002

Revised: July 1, 2015

810.01TS

Description.

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

General.

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

Add the following to Article 810.03 of the Standard Specifications:

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

Add the following to Article 811.03 of the Standard Specifications:

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

Basis of Payment.

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

TRAFFIC SIGNAL GENERAL REQUIREMENTS

Effective: May 22, 2002

Revised: March 1, 2024

800.01TS

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 International Municipal Signal Association (IMSA)/Illinois Public Service Institute (IPSI) 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 the 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 Manufacturer. Company that sells a particular type of product directly to the Contractor or the Vendor.

101.57 Vendor. Company that supplies, represents, and provides technical support for IDOT District One approved traffic signal controllers and other related equipment. The Vendor shall be located within IDOT District One and shall:

- (1) Be full service with on-site facilities to assemble, test and troubleshoot traffic signal controllers and cabinet assemblies.
- (2) Maintain an inventory of IDOT District One approved controllers and cabinets.
- (3) Be staffed with permanent sales and technical personnel able to provide traffic signal controller and cabinet expertise and support.
- (4) Have technical staff that hold current IMSA/IPSI Traffic Signal Technician Level III certification and shall attend traffic signal turn-ons as well as cabinet and/or controller modifications.

Submittals.

Revise Article 801.05 of the Standard Specifications to read:

"All material approval requests shall be submitted electronically following District guidelines unless directed otherwise by the Engineer. Submittal requirements shall include, but not limited to the following:

- (1) All material approval requests shall be made prior to or no later than 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 necessary, four (4) complete copies of the manufacturer's descriptive literatures and technical data for the traffic signal materials shall be submitted. 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.
- (5) When hard copy submittals are necessary for structural elements, four (4) 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.
- (6) Partial or incomplete submittals will be returned without review.
- (7) 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.
- (8) The Contract number or Permit number, project location/limits, and corresponding pay code number must be on each sheet of correspondence, material approval, and mast arm poles and assemblies drawings.
- (9) 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.
- (10) 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 'Incomplete'. 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.

- (11) The Contractor shall secure approved materials in a timely manner to assure construction schedules are not delayed.
- (12) All submitted items reviewed and marked 'APPROVED AS NOTED', 'DISAPPROVED', or 'INCOMPLETE' are to be resubmitted in their entirety, unless otherwise indicated within the submittal comments, with a disposition of previous comments to verify Contract compliance at no additional cost to the Contract.
- (13) 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.
- (14) 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.
- (15) Revised cabinet wiring diagrams shall be submitted whenever any wiring modifications are made to the traffic signal cabinet."

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 Vendor in District One. The Department reserves the right to request any controller and cabinet to be tested at the Vendor's facility prior to field installation at no extra cost to the Contract.

Maintenance and Responsibility of Traffic Signal and Flashing Beacon Installations.

Replace Article 801.11(b) of the Standard Specifications to read:

- (b) Traffic Signals and Flashing Beacons. The Contractor shall be responsible for maintaining the traffic signal/flashing beacon installation in proper operating condition.

(1) General.

- a. The Contractor must notify the Area Traffic Signal Maintenance and Operations Engineer 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.
- b. Full maintenance responsibility shall start upon the successful completion of a maintenance transfer inspection, or as directed by the Engineer. If the Contractor begins any physical work on the Contract or any portion thereof prior to a traffic signal 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 the time of transfer at no cost to the owner of the traffic signal equipment. 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.
- c. All traffic signals within the limits of the Contract or those which have the item "MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION," "TEMPORARY TRAFFIC SIGNAL INSTALLATION", "TEMPORARY BRIDGE TRAFFIC SIGNAL INSTALLATION", "TEMPORARY PORTABLE BRIDGE TRAFFIC SIGNAL INSTALLATION", and/or "MAINTENANCE OF EXISTING FLASHING BEACON INSTALLATION" shall become the full responsibility of the Contractor. Maintenance responsibility shall end upon issuance of final acceptance by the Engineer.
- d. The Contractor shall have electricians with IMSA/IPSI Traffic Signal Technician Level II certification on staff to provide signal maintenance. A copy of the certification shall be immediately available upon request by the Engineer.
- e. This item shall include maintenance of all traffic signal equipment and other connected and related equipment such as flashing beacons, emergency vehicle preemption (EVP) equipment, master controllers, network switches, uninterruptable power supply (UPS) and batteries, pan-tilt-zoom (PTZ) cameras, vehicle detection, handholes, lighted signs, telephone service installations, cellular modems, radios, communication cables, and other traffic signal equipment. All conduit and related equipment to adjacent intersections shall be maintained to the far back handhole, or as directed by the Engineer. If adjacent intersections are part of Contract

work, then maintenance of all conduit and related equipment shall be included in this item.

- f. Regional transit, County, and other agencies may also have equipment connected to existing traffic signal or peripheral equipment such as network switches and transit signal priority (TSP, SCP, and BRT) servers, radios, and other devices, where maintenance shall be coordinated with the owner.
- g. 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 others and shall be deactivated while on Contractor maintenance.
- h. The energy charges for the operation of the traffic signal installation shall be paid for by the Contractor.

(2) Maintenance.

- a. The Contractor shall inspect all traffic signal equipment and appurtenances every two (2) weeks to ensure they are functioning properly. Signal heads shall be properly adjusted, including plumb, and tightly mounted. All controller cabinets, signal posts, and controller pedestals shall be tight on their foundations and in alignment. Deficient equipment shall be repaired or replaced as necessary. The Contractor shall check signal system communications and phone lines to assure proper operation. This item includes, as routine maintenance, all portions of EVP equipment. The Contractor shall always maintain enough materials and equipment in stock to provide effective temporary and permanent repairs. The Contractor shall supply a detailed maintenance log monthly that includes dates, locations, names of electricians performing the required checks and inspections, and any other information requested by the Engineer. The Contractor shall attend any additional inspections as requested by the Engineer. The Contractor shall check the controllers, relays, and detectors after receiving complaints or calls to ascertain that they are functioning properly and make all necessary repairs and replacement.
- b. 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 from the Engineer. Approval to shut down the traffic signal installation will only be granted during the period extending from 9:00 a.m. to 3:00 p.m. on weekdays. Shutdowns shall not be allowed during inclement weather or holiday periods.
- c. The Contractor shall provide immediate corrective action when any part(s) of the signal 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 in flashing operation. The signals shall flash RED for all directions unless a different indication has been specified by the Engineer. The Contractor shall install cones on all lane lines at the stop bar on each approach, R1-1 (36 in. minimum) "STOP" signs at the stop bar on each approach on the right side and on raised medians (where applicable), and black on fluorescent orange "SIGNALS OUT AHEAD" warning signs followed by fluorescent orange W3-1 symbolic stop ahead warning signs on all approaches to the intersection.

- d. Temporary replacement of a damaged or knocked down 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 is not permitted.
- e. The Contractor shall provide the Engineer with two (2) 24-hour telephone numbers for the maintenance of the traffic signal installation and for emergency calls by the Engineer.
- f. Traffic signal equipment which is lost, damaged, 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.
- g. The Contractor shall be fully responsible for the safe and efficient operation of the traffic signals and other equipment noted herein. 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 equipment meeting current District One traffic signal specifications. The cost of furnishing and installing the replaced equipment shall be borne by the Contractor at no additional cost 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 Department's Electrical Maintenance Contractor perform the maintenance work. The Contractor shall be responsible for all of the Department's Electrical Maintenance Contractor's costs and liquidated damages of \$1,000 per day per occurrence. The Department'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 inspect the traffic signal installation that has been transferred to the Contractor for maintenance. 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. The Department may inspect any signalizing device on the Department's highway system at any time without notification. The Contractor shall not install padlocks on traffic signal cabinets or otherwise restrict the Department's access to the cabinet or controller.

- h. 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.
- i. The Contractor shall be responsible to clear snow, ice, dirt, debris, vegetation, temporary fence, or other condition that obstructs visibility of any traffic signal display or access to traffic signal equipment.
- j. The Contractor shall maintain the traffic signal in normal operation during any loss of utility or battery backup power. Temporary power to the traffic signal must meet applicable NEC and OSHA guidelines and may include portable generators and/or replacement batteries. Temporary power shall not be paid for separately but shall be included in the Contract.

- (3) Basis of Payment. This work will be paid for at the Contract unit price per each for MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION, TEMPORARY TRAFFIC SIGNAL INSTALLATION, TEMPORARY BRIDGE TRAFFIC SIGNAL INSTALLATION, or TEMPORARY PORTABLE BRIDGE TRAFFIC SIGNAL INSTALLATION. Each location will be paid for separately. Maintenance of a 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.

Damage to Traffic Signal System.

Add the following to Article 801.12(b) of the Standard Specifications:

“Any traffic signal control equipment that is damaged and non-repairable 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. Repair or replace any equipment damaged within the time shown in the table below:

ITEM	RESPONSE TIME	SERVICE RESTORATION	PERMANENT REPAIR (calendar days)
Cabinet	1 hour	24 hours	21 days
Controllers and Peripheral Equipment	1 hour	4 hours	21 days
System Detector Loop	1 hour	N/A	7 days
All Other Detectors	1 hour	N/A	21 days
Signal Head and Lenses	1 hour	4 hours	7 days
Aviation Red Beacon	1 hour	4 hours	7 days
Mast Arm Assembly and Pole	1 hour	4 hours	7 days
Traffic Signal Post	1 hour	4 hours	7 days
Cable and Conduit	1 hour	4 hours	7 days
Interconnect and Telemetry	1 hour	4 hours	7 days
Graffiti Removal	N/A	N/A	7 days
Misalignment of Signal Heads	1 hour	4 hours	4 hours
Closed Loop Monitoring System	1 hour	24 hours	14 days
Post and Poles Plumb Vertically	N/A	N/A	21 days
Controller, Post & Pole Foundations	N/A	N/A	21 days
Complaints, Calls, Controller or System Alarms, Timing, Phasing, Programming	1 hour	4 hours	N/A
Patrol Truck Deficiencies	N/A	24 hours	24 hours
Signal Heads Visibility	1 day	2 days	14 days

Temporary replacement of a damaged or knocked down 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.

Replacement of any equipment for any reason shall be reported to the Area Traffic Signal Maintenance and Operations Engineer in writing within 24 hours. Permanent and temporary replacement of the controller and/or cabinet shall require inspection and testing by the Vendor.

Automatic Traffic Enforcement equipment, such as red light enforcement cameras, detectors, and peripheral equipment, that is 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:

“Turn-on. It is the intent to have all electric work completed and equipment field tested by the Contractor and/or Vendor 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 Contractor requests a turn-on and inspection of the completed traffic signal installation(s), the request must be made to the Area Traffic Signal Maintenance and Operations Engineer 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, and/or TEMPORARY TRAFFIC SIGNAL TIMING, 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 Vendor 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 signals shall continue to be maintained by the Contractor until final acceptance.

The Department requires the following Final Project Documentation from the Contractor at traffic signal turn-ons in electronic format in addition to hard copies where noted. An electronic media device shall be submitted with separate folders corresponding to each numbered title below. The electronic media device shall be labeled with date, project location, company, and Contract or Permit number. Electronic record drawings and material approvals shall be submitted prior to traffic signal turn-on for review by the Department as described in the Record Drawings section herein.

Final Project Documentation:

- (1) Record Drawings. Electronically produced signal plans of record with field revisions marked in red. Two (2) hard copies of 11 in. x 17 in. record drawings shall also be provided.
- (2) Field Testing. Written notification from the Contractor and the Vendor of satisfactory field testing with corresponding material performance measurements, such as for detector loops and fiber optic systems (see Article 801.13).
- (3) Material Approvals. Material approval documentation.
- (4) Manuals. Operation and service manuals of the signal controller and associated control equipment.
- (5) Cabinet Wiring Diagram and Cable Logs. Five (5) hard copies of 11 in. x 17 in. cabinet wiring diagrams shall be provided along with electronic PDF and DGN files of the cabinet wiring diagram. Five (5) 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.
- (6) Warrantees and Guarantees. All manufacturer and Contractor warrantees and guarantees required by Article 801.14.
- (7) GPS Coordinates. GPS coordinates of traffic signal equipment as described 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 traffic signal equipment. If approved, traffic signal acceptance shall be verbal at the final 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 turn-on. The Contractor shall notify the Area Traffic Signal Maintenance and Operations Engineer to schedule an inspection of 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 requirements herein 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 requirements herein 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 second and third paragraphs of Article 801.16 of the Standard Specifications to read:

“When the work is complete, and seven (7) days before the request for a final inspection, electronic 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. 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 material approvals which have been Approved or Approved as Noted shall be submitted in PDF format. 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.

The Contractor shall provide two (2) 11 in. x 17 in. hard copies of electronically produced final record drawings to be kept inside each traffic signal cabinet within project limits.”

Add the following to Article 801.16 of the Standard Specifications:

“In addition to the specified record drawings, the Contractor shall record GPS coordinates of the following traffic signal components being installed, modified or being affected in other ways by the Contract:

- All Mast Arm Poles and Posts
- Traffic Signal Wood Poles
- Railroad Bungalow
- UPS
- Handholes
- Controller Cabinets
- Communication Cabinets
- Electric Service Disconnect locations
- CCTV/PTZ Camera installations

Datum to be used shall be North American 1983.

Data shall be provided in electronic format and shall be in .csv format. 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.csv (i.e. TS22157_24-01-01.csv)
- 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: MM/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

Examples:

Date	Item	Description	Latitude	Longitude
01/01/2024	MP (Mast Arm Pole)	NEQ, NB, Dual, Combination Pole	41.580493	- 87.793378
01/01/2024	HH (Handhole)	Heavy Duty, Fiber, Intersection, Double	41.558532	- 87.792571
01/01/2024	ES (Electrical Service)	Ground mount, Pole mount	41.765532	- 87.543571
01/01/2024	CC (Controller Cabinet)		41.602248	- 87.794053
01/01/2024	PTZ (PTZ)	NEQ extension pole	41.593434	- 87.769876
01/01/2024	POST (Post)		41.651848	- 87.762053
01/01/2024	MCC (Master Controller Cabinet)		41.584593	- 87.793378
01/01/2024	COMC (Communication Cabinet)		41.584600	- 87.793432
01/01/2024	BBS (Battery Backup System)		41.558532	- 87.792571

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 resubmit the data for review and approval as specified.

Data shall have a minimum 1 ft accuracy after post processing.”

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, detector loop installation or replacement, 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.

Exposed holes created from removal or relocation of traffic signal equipment shall be sealed using a zinc-plated fender washer with toggle bolt.

Restoration of the work area shall be included in the Contract without any extra compensation allowed to the Contractor.

Removal, Disposal, and Salvage of Existing Traffic Signal Equipment.

The removal, disposal, and/or salvage of existing traffic signal equipment shall become the property of the Contractor and disposed of by the Contractor outside the State's right-of-way, unless otherwise noted. No additional compensation shall be provided to the Contractor for removal, disposal or salvage expense for the work in the Contract."

Bagging Signal Heads.

Light tan colored traffic and pedestrian signal reusable covers shall be used to cover dark/un-energized signal sections, visors, and retroreflective backplates. 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 (2) 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. Pedestrian pushbuttons that are not in service shall be covered with a durable material such as described above or burlap that is secured in a weather-resistant manner. The entire housing, including the pedestrian sign, shall also be covered on the front side.

Turn-on of New Traffic Signal Installations.

The following only applies to new traffic signals at previously unsignalized locations.

The signal responsibility shall begin at the start of signal construction and shall end upon issuance of final acceptance by the Engineer. New traffic signal heads and indications may not be installed more than two (2) weeks (14 calendar days) prior to the scheduled turn-on of the traffic signal to avoid motorist confusion caused by the presence of new signal heads, even if properly covered. Unenergized signal indications shall be bagged until one (1) hour prior to the scheduled turn-on per the Bagging Signal Heads section above.

New stop bars and crosswalks on approaches that did not previously have stop control shall NOT be installed until the day of the traffic signal turn-on.

A Portable Changeable Message Sign (PCMS) must be placed two (2) weeks prior to the scheduled new traffic signal turn-on for all approaches to the intersection with the following messages:

NEW TRAFFIC SIGNAL

STARTING MMM ##

where "MMM" and "##" are the 3-character month abbreviation and day of the scheduled turn-on, respectively.

On the day of the turn-on, change messages to read:

NEW

BE

SIGNAL
AHEAD

PREPARED
TO STOP

The PCMS must remain in place for two (2) weeks following the day of the turn-on.

Conflicting Stop signs shall be removed immediately at the time of the traffic signal turn-on.

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 the Contract requires the maintenance services of an Electrical Contractor, the Contractor shall be responsible at their own expense for locating all existing IDOT electrical facilities, including but not limited to interconnect conduit and handholes, prior to performing any work. A maintenance transfer is required prior to any locating work. If this Contract does not require the maintenance 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 will be at the expense of the Contractor. 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.

The Contractor shall take whatever precautions to protect the electric cable or electric conductors in conduit from damage during location and construction operations. If the wiring is damaged, the Contractor shall replace the entire length of cable or conductors in conduit, in a manner satisfactory to the Engineer. Splicing below grade will not be permitted.

In the event the repairs are not made by the Contractor, the Contractor shall reimburse the Department for such repairs within sixty (60) days of receiving written notification of said damage. Otherwise, the cost of such repairs will be deducted from monies due or which will become due the Contractor under the terms of the Contract."

Grounding of Traffic Signal Systems

Revise Section 806 of the Standard Specifications to read:

"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 and conduit protruding from handhole walls.
 - (3) All metallic and non-metallic raceways, including spare or empty raceways, shall have a continuous equipment grounding conductor, except raceways containing only detector loop lead-in circuits, circuits under 50 V and/or fiber optic cable will not be required to include an equipment grounding conductor.
 - (4) Individual conductor splices in handholes shall be soldered and sealed with heat shrink. When necessary to maintain effective equipment grounding, a full cable heat shrink shall be provided over individual conductor heat shrinks.
- (c) The grounding electrode conductor shall be similar to the equipment grounding conductor in color coding (green) and size. The grounding electrode conductor is used to connect the ground rod to the equipment grounding conductor and is bonded to ground rods via exothermic welding, UL listed pressure connectors, and UL listed clamps."

UNDERGROUND RACEWAYS

Effective: May 22, 2002

Revised: March 1, 2024

810.02TS

Revise Article 810.04 of the Standard Specifications to read:

“Installation. All underground conduits shall have a minimum depth of 30 in. (700 mm) below the finished grade and shall be installed to avoid existing and proposed utilities within the project limits.”

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.”

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 1 ft (300 mm) 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 1/8 in. (3 mm) 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.”

ELECTRIC SERVICE INSTALLATION (SPECIAL)

Effective: March 9, 2024

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: 1457, 1462

Standard Drawings: 11922, 11925

This work will consist of furnishing and installing a service on a Commonwealth Edison Company wood pole for either a 120-volt traffic signal service installation, or for a 120/240-volt or 120/208-volt street lighting service installation per Standard Drawing 11925.

Materials.

Service Junction Cabinet. The cabinet shall be cast from aluminum and meet all the requirements of Standard Drawing 11922. Its dimensions shall not exceed eight (8) inches in width, eighteen (18) inches in height and nine (9) inches in depth, and it shall be weatherproof. It shall contain a two (2) pole disconnecting device, with bridge contacts and barrier strip, subject to approval. The disconnecting device shall be rated for 200 amps and 600 volts. A suitable ground lug, subject to approval, to accommodate a 1/C #2, 1/C #4, 1/C #2/0 or 1/C #1/0 AWG stranded copper conductor shall be provided. Any alternate cabinets which are considered equal to this may be considered.

Cable Grip. A one and one quarter inch (1 1/4") cable grip fitting shall be installed at top of cabinet to accommodate a 3/C #2, #4, #2/0 or #1/0 AWG service cable.

Service Riser. A three (3) inch galvanized rigid steel conduit riser terminated at the bottom with a galvanized rigid steel, large radius, conduit elbow shall be installed by the contractor on the Commonwealth Edison Company service pole as shown on Standard Drawing 11925. The top of the riser shall terminate in the service junction cabinet and the end of the elbow shall connect to the horizontal conduit leading to the control cabinet. The riser and elbow shall be included in the cost of the service installation. Horizontal conduit beyond the elbow will be paid for separately, as noted on the plans.

Cable. A sufficient length of three (3) conductor service entrance cable shall be coiled at the top of the box in order to reach the Commonwealth Edison Company secondary wires for connection. The three (3) conductor service entrance cable shall meet the requirements of Material Specification 1457, or an approved equal. The black and red conductors shall be connected to the disconnect device and the white conductor to the ground lug, for the 240-volt street lighting service installation. The black conductor shall be connected to the disconnect, and the white to the ground lug, for the 120-volt traffic signal service installation. For 120-volt installations, the red conductor shall be taped and coiled inside box for future use.

Cables in Service Riser. Cables shall extend continuously from the load side of the disconnect device, down the riser and elbow, and in the conduit lateral to the control cabinet. Payment for cables in riser and elbow will be paid for separately.

Basis of Payment. This work will be paid for at the contract unit price per each for ELECTRIC SERVICE INSTALLATION (SPECIAL), of the amperage specified.

ELECTRIC SERVICE INSTALLATION

Description. This item shall consist of all material and labor required to extend, connect or modify the electric services, as indicated or specified, which is over and above the work performed by the utility. Unless otherwise indicated, the cost for the utility work, if any, will be reimbursed to the Contractor separately under ELECTRIC UTILITY SERVICE CONNECTION. This item may apply to the work at more than one service location and each will be paid separately.

Materials. Materials shall be in accordance with the Standard Specifications.

Construction Requirements. The Contractor shall ascertain the work being provided by the electric utility and shall provide all additional material and work not included by other contract pay items required to complete the electric service work in complete compliance with the requirements of the utility.

No additional compensation will be allowed for work required for the electric service, even though not explicitly shown on the Drawings or specified herein

Method Of Measurement. Electric Service Installation shall be counted, each.

Basis Of Payment. This work will be paid for at the contract unit price each for **ELECTRIC SERVICE INSTALLATION**, which shall be payment in full for the work specified herein.

HEAVY-DUTY HANDHOLE (SPECIAL)

Effective: March 16, 2024

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: 1458, 1528
Standard Drawings: 867, 874

This item shall consist of furnishing and installing or constructing an electrical handhole with frame and cover in pavement, parkway, driveway, or sidewalk.

Materials. Frames and covers shall meet the requirements of Material Specification 1458. Handholes shall meet the requirements of Material Specification 1528. 24" frames and covers shall meet the requirements of Standard Drawing 872. 30" frames and covers shall meet the requirements of Standard Drawing 874 and 10927. Bricks shall meet the requirements of Section 1041 of the IDOT Standard Specifications for Road and Bridge Construction (SSRBC). All other materials used shall meet the appropriate material requirements of the Standard Specifications.

General Requirements. The handhole shall be a precast concrete structure, or, if conditions merit, a cast in place concrete structure, complete with cast iron frame and cover, and conforming in detail with Standard Drawing 867 for 30" handholes, Standard Drawings 866 or 871 for heavy-duty handholes, except that the number of conduit openings shall be as shown on the construction plans.

Each handhole shall be installed at the location specified on the plans or at the location identified by the Resident Engineer.

Construction Requirements. The area where the handhole is to be placed shall be properly excavated. All disposable material shall be properly disposed of per Article 202.03 of the SSRBC. Each handhole shall be set or constructed on a foundation of loose stone not less than eight inches (8") deep. The 36" handhole for pavement installation shall have a floor as shown in Drawing Number 871. The frame casting shall be accurately set on a full bed of mortar to the finished elevation so that no subsequent adjustment shall be necessary. It is desirable not to use a neck for the frame. However, if approved by the Resident Engineer, mortar and brick, or mortar and concrete rings, may be used to adjust to the proper grade. Adjustment rings, bricks, and frames shall be set in a full mortar bed. Use of partial bricks will not be allowed. Bricks shall be laid in full header courses only. Mortar shall be mixed in a proportion of one (1) part of cement to three (3) parts sand by volume of dry materials. After entering ducts have been installed in place in the handhole, the openings in the wall shall be plugged in an approved manner flush with the inner surface. If backfill is required, screenings shall be used and properly compacted. Parkway shall be restored to the proper grade. Pavement shall be properly restored to finished grade. Patching of the pavement shall be done with high early strength concrete meeting the requirements of Articles 1001 and 1020 of the Standard Specifications. Sidewalks shall be restored to the proper grade using a 5-inch thickness of concrete. The inside of the handhole shall be clean of all debris.

Basis of Payment. This work will be paid for at the contract unit price per each for HEAVY-DUTY HANDHOLE (SPECIAL) of the size specified.

ELECTRIC UTILITY SERVICE CONNECTION

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. 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. 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 as described under ELECTRIC SERVICE INSTALLATION. No extra compensation shall be paid to the Contractor for any items, 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 \$10,000.00

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.

CONDUIT IN TRENCH, GALVANIZED STEEL, 3" DIA.

CONDUIT IN TRENCH, PVC (SCHEDULE 40), 2" DIA.

PVC CONDUIT IN TRENCH, 2" (SCHEDULE 40).

CONDUIT IN TRENCH, PVC (SCHEDULE 40), 3" DIA.

PVC CONDUIT IN TRENCH, 3" (SCHEDULE 40)

CONDUIT IN TRENCH, PVC (SCHEDULE 80), 2" DIA.

PVC CONDUIT IN TRENCH, 3" (SCHEDULE 80)

Effective: March 9, 2024

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: 1462, 1533

Standard Drawings: 579, 813

This work shall consist of furnishing and installing conduit, fittings, and accessories as part of a raceway laid in trench, pushed, or directionally bored.

Materials. Galvanized rigid steel conduit and PVC coated galvanized rigid steel conduit shall conform to the requirements of Material Specification 1462. Polyvinyl chloride (PVC) conduit shall conform to the requirements of Material Specification 1533. Coilable non-metallic conduit shall be a high-density polyethylene meeting the requirements of Material Specification 1533. Conduit color shall be as determined by the Resident Engineer. Aluminum conduit shall be rigid wall conduit with a minimum wall thickness of 0.099". The conduit shall be extruded from 6063 aluminum alloy and tempered to T-1. Aluminum conduit shall meet the requirements of UL 6 and ANSI C80.5.

Construction Requirements. Galvanized rigid steel conduit shall be installed in a trench or pushed underground (upon approval from City). PVC conduit shall normally be installed in a trench. Coilable conduit shall be installed in a trench for short distances only. The normal installation method for coilable conduit is directional boring. The Contractor shall exercise care in installing the conduit to ensure that it is smooth, free from sharp bends or kinks, and has the minimum practicable number of bends. Crushed or deformed conduit shall not be accepted. All conduit and fittings shall have the burrs and rough places smoothed, and all conduit runs shall be cleaned and swabbed before installation of electric cables. If cable is not to be installed immediately after cleaning of the conduit, a light weight pulling line such as 1/8" polyethylene line shall be placed in the conduit and shall remain in the conduit for future work. The excavation for pushing conduit shall be located at least two feet (2') from the edge of pavement. All underground conduits shall have a minimum cover of thirty inches (30") below grade. If conduit cannot be installed with a minimum cover of thirty inches (30"), the conduit shall be encased in concrete for protection. The method of encasement and protection shall be approved by the engineer.

Concrete encasement shall be paid for as a separate pay item.

When multiple conduits are installed in a common trench, no more than three (3) three inch (3") or smaller conduit laterals shall be laid on a single, horizontal level. Four or more conduit laterals shall be installed on two (2) or more levels in accordance with instructions of the Resident Engineer.

Threaded fittings and bends of the same material as conduit shall be furnished and installed as required. Threadless couplings may be used only for splicing existing conduit. All conduit splices, where required, shall be included in the cost of this work.

Method of Measurement. This work will be measured for payment in feet in place. Measurements will be made in straight lines along the centerline of the conduit between ends and changes in direction. Vertical conduit will be measured for payment. The vertical distance required for breakaway devices, barrier wall, concrete pedestals, etc., and the depth of any burial will be measured. Changes in direction shall assume perfect straight line runs, ignoring actual raceway sweeps.

Basis of Payment. This work will be paid for at the contract unit price per foot for CONDUIT IN TRENCH, CONDUIT PUSHED, or CONDUIT, DIRECTIONAL BORED of the type and size specified.

ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 2/0

Effective: March 16, 2024

Revised: August 2, 2024

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: 1534

Standard Drawings: None Applicable

This work shall consist of furnishing and installing electric cable as specified in raceways, complete with all splicing, identifications, and terminations.

Materials. Cable shall meet all requirements of Material Specification 1534.

Construction Requirements. All cables shall be installed with care to prevent damage to the cable. Any defects found in the cable shall be reported to the Resident Engineer. Damaged cable shall be replaced.

Cable shall be pulled into the conduit with a minimum of dragging on the ground or pavement. This shall be accomplished by means of reels mounted on jacks or other suitable devices located for unreeling cable directly into duct. Lubricants shall be used to facilitate installation if deemed necessary by the contractor.

Bends in the cable shall conform to the recommended minimum radii as outlined in the National Electric Code.

Cable passing through manholes shall be trained and racked around the sides of the manhole into a permanent position. If racks are non-existent or in poor condition, the contractor shall install racks. Installation of racks will be paid for as INSTALL RACK IN HANDHOLE OR MANHOLE.

Where cable runs continue from manhole to manhole without tapping within a light pole, cable shall be continuous without splices unless authorized by the Resident Engineer.

All cable within the distribution panels and control cabinets shall be properly trained and have sufficient slack provided for any rearrangement of equipment or future additions. There shall be at least two feet of slack in a street light pole base or street light controller base. A handhole shall have at least five feet of slack and a manhole, at least ten feet of slack.

Method of Measurement. The length of cable furnished and installed will be measured per foot as the length of conduit plus three feet for cable entering and leaving a light pole or street light control cabinet, plus any slack in manholes or handholes.

Basis of Payment. This work will be paid for at the contract unit price per foot for ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 2/0 of the size specified.

ELECTRIC CABLE IN CONDUIT, TRIPLEX, 2-1/C NO. 6, 1-1/C NO. 8 GROUND

Effective: March 16, 2024

Revised: August 2, 2024

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: 1534

Standard Drawings: None Applicable

This work will consist of furnishing and installing triplex electric cable in raceways, complete with all splicing, identifications, and terminations.

Materials. Cable shall conform to the requirements of Material Specification 1534.

Construction Requirements. All cables shall be installed with care to prevent damage to the cable. Any defects found in the cable shall be reported to the Resident Engineer. Damaged cable must be replaced.

Cable shall be pulled into the conduit with a minimum of dragging on the ground or pavement. This will be accomplished by means of reels mounted on jacks or other suitable devices located for unreeling cable directly into duct. Lubricants must be used to facilitate installation if deemed necessary by the contractor.

Bends in the cable shall conform to the recommended minimum radii as outlined in the National Electric Code.

Cable passing through manholes shall be trained and racked around the sides of the manhole into a permanent position. If racks are non-existent or in poor condition, the contractor shall install racks. Installation of racks will be paid for as INSTALL RACK IN HANDHOLE OR MANHOLE.

Where cable runs continue from manhole to manhole without tapping within a light pole, they shall be continuous without splices unless authorized by the Resident Engineer.

Cable installation shall be color coded so that each lead of all circuits may be easily identified, and lighting units connected to the proper leg as indicated on the plans. The equipment grounding conductor (no. 8) must be color coded green.

All cable within the distribution panels and control cabinets shall be properly trained and have sufficient slack provided for any rearrangement of equipment or future additions.

There shall be at least three feet of slack in a street light pole base or street light controller base. A handhole shall have at least five feet of slack and a manhole at least ten feet of slack.

Method of Measurement. The length of triplex cable furnished and installed will be measured as the length of conduit plus three feet for cable entering and leaving a light pole or street light control cabinet, plus any slack in manholes or handholes.

Basis of Payment. This work shall be paid for at the contract unit price per foot for CABLE IN CONDUIT, TRIPLEX, 2-1/C NO. 6, 1-1/C NO. 8 GROUND.

LIGHT POLE, ALUMINUM, DAVIT, 35 FT. M.H., 15 FT. DAVIT ARM

Effective: March 9, 2024

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: 1452, 1453

Standard Drawings: 837, 950, 971

This item will consist of furnishing and installing a light pole complete with an arm of the length specified, and all hardware and accessories required for the permanent use of the pole.

Materials. Pole shafts shall meet the requirements of Material Specification 1452 and Standard Drawing 971. Davit arms shall meet the requirements of Material Specification 1453 and Standard Drawings 948, 949, and 950. The finish shall be as indicated on the plans.

General Requirements. Installation shall be in accordance with Sections 801 and 830 of the IDOT Standard Specifications for Road and Bridge Construction and Standard Drawing 837 to provide ventilation within the pole and the ability to plumb the pole.

Any exposed portions of anchor rods extending above the nuts which interfere with the installation of the bolt covers must be cut off to provide the necessary clearance for installation. The excess shall not be burned off.

Basis of Payment. Light poles will be paid for at the contract unit price per each for LIGHT POLE, ALUMINUM, 35 FT. M.H., 15FT DAVIT ARM

LIGHT POLE FOUNDATION, METAL. 15" BOLT CIRCLE, 8 5/8" X 7'

Effective: March 2, 2023

Revised: June 30, 2025

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: 1526, 1593

Standard Drawings: 936

This work shall consist of furnishing and installing a steel light pole foundation with cable anti-theft device.

Materials. Steel foundations shall meet the requirements of Material Specification 1526. and the applicable requirements of Article 1070.01 of the IDOT Standard Specifications for Road and Bridge Construction (SSRBC). Fully threaded and galvanized anchor rods or stud bolts with washers and nuts shall be furnished with the foundations and shall be according to Article 1006.09 of the SSRBC. Anchor rods shall be according to ASTM F 1554 shall be Grade 105 (Grade 725). Cable anti-theft devices shall meet the requirements of Material Specification 1593.

Construction Requirements. The installation shall follow the requirements of Article 836.03 (b) of the SSRBC. The foundation shall be plumb with the base plate level with the existing grade. If installed in a sidewalk, the helix shall be set lower than the sidewalk and topped with concrete level to the top of the sidewalk. An expansion joint shall also be installed. Any improperly installed or damaged foundations shall be replaced at no additional cost to the City.

Basis of Payment. Metal foundations will be paid for at the contract unit price per each for LIGHT POLE FOUNDATION, METAL, 15" BOLT CIRCLE, 8 5/8" X 7'.

REMOVAL OF POLE FOUNDATION

Description. This work shall consist of removing and disposing an existing concrete foundation for lighting, traffic signal, or other electrical equipment.

General Requirements. Removal shall consist of completely removing a foundation or breaking a foundation down to a point three feet below grade, disposing of the debris offsite in an approved manner, backfilling the excavation with screenings or other approved backfill material, and reconstructing the surface area. For foundations removed from within the parkway, the parkway shall be restored with topsoil to match the existing grade. For foundations removed from within sidewalk, the sidewalk shall be restored. Restoration of sidewalk shall be paid for separately. Debris shall be disposed of according to Section 202.03 of the Standard Specifications. Backfill shall meet the requirements of Section 1003.04 of the Standard Specifications.

Basis of Payment. Breakdown of foundations will be paid for at the contract unit price per each for BREAKDOWN CONCRETE FOUNDATION, of the type specified.

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.

TRAFFIC SIGNAL POST

Effective: May 22, 2002

Revised: March 1, 2025

875.01TS

Revise Article 1077.01 (c) of the Standard Specifications to read:

- (c) Anchor Rods. The anchor rods shall be a minimum of 5/8 in. in diameter and 16 in. long and shall be according to Article 1006.09. The anchor rods shall be threaded approximately 6 in. at one end and have a bend at the other end. The first 12 in. at the threaded end shall be galvanized. One each galvanized nut and trapezoidal washer shall be furnished with each anchor rod. The washer shall be properly sized to fully engage and sit flush on all sides of the slot of the base plate.

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

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

MAST ARM ASSEMBLY AND POLE

Effective: May 22, 2002
Revised: July 01, 2015
877.01TS

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

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

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

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

CONCRETE FOUNDATIONS

Effective: May 22, 2002
Revised: March 1, 2024
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. at the threaded end.

Depending on the foundation type, the top of foundation shall be between 1 in. and 6 in. above finished grade or as directed by the Engineer.

No foundation is to be poured until the Resident Engineer gives their approval as to the depth of the foundation.”

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

“The concrete apron in front of the cabinet and UPS shall be included in this pay item.”

Revise the first paragraph of Article 878.05 of the Standard Specifications to read:

“Basis of Payment. This work will be paid for at the Contract unit price per foot (meter) of depth of CONCRETE FOUNDATION of the type specified, or CONCRETE FOUNDATION, TYPE A 12-INCH DIAMETER for pedestrian post concrete foundations.”

LIGHT POLE FOUNDATION (SPECIAL)

Effective: March 17, 2024

Location south of centerline utilizes the specification below.

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: 1465, 1467, 1533

Standard Drawings: 937A

This work shall consist of furnishing and installing a concrete foundation to support a light pole, traffic signal pole, traffic signal post, or other pedestal mounted equipment. The foundation shall be poured in place and be complete with reinforcement, anchor rods, raceways, and grounding, as shown in the Standard Drawings referenced below.

Pay Item	Standard Drawing	Usage
Concrete Foundation, 24" Diameter, Offset, 1 1/4" Anchor Rods, 15" Bolt Circle	937A	arterial light poles and traffic signal poles with 16', 20' or 26' mast arms

Materials. Concrete shall be Portland cement concrete meeting the requirements of Section 1020 of the IDOT Standard Specifications for Road and Bridge Construction for Class SI concrete. Anchor rods shall meet the requirements of Material Specification 1467. Ground rods shall meet the requirements of Material Specification 1465. Conduit shall be PVC and meet the requirements of Material Specification 1533.

Construction Requirements. The top surface of foundation shall be at an elevation of two inches above grade or as directed by the Resident Engineer. Care shall be taken to install a level foundation and to ensure adequate anchor rod projections for double nut installation. The foundation top shall be chamfered 3/4 of an inch. The foundation shall be centered back from the face of the curb in accordance with dimensions shown on the construction plans. When the foundation is in a solid sidewalk area, the foundation shall be installed level, with the height of the foundation as close to the height of the sidewalk as possible, or as directed by the Engineer. An expansion joint shall be installed between the sidewalk and the foundation.

Anchor rods shall be set in accordance with applicable Standard Drawing so that when poles are installed on the foundations, the mast arms are oriented as shown in the plans. The anchor rods shall be set by means of a metal template which shall be submitted for approval before any foundation work is begun. The template must hold the rods vertical, and in proper position.

Foundation raceways shall consist of large radius conduit elbow(s) in quantity, size and type specified in the applicable Standard Drawing or as indicated in the plans. Elbow ends above

ground shall be capped with standard conduit bushings.

Method of Measurement. Concrete foundations will be measured for payment in feet in place or per each, as designated in the contract. Offset foundations will be measured along the vertical and horizontal centerlines of the foundation without overlap.

Basis of Payment. This work will be paid for at the contract unit price per foot for LIGHT POLE FOUNDATION (SPECIAL) of the diameter and bolt circle specified.

DETECTOR LOOP

Effective: May 22, 2002
Revised: March 1, 2024
886.01TS

Procedure.

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

Installation.

Revise Article 886.04 of the Standard Specifications to read:

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

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

Each loop detector lead-in wire shall be labeled in the handhole using a waterproof tag secured to each wire with nylon ties.

Resistance to ground shall be a minimum of 500 mega-ohms under any conditions of weather or moisture. Inductance shall be more than 50 and less than 700 microhenries.

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

- (2) Handholes shall be placed next to the shoulder or back of curb when preformed detector loops enter the handhole. CNC, included in this pay item, shall be used to protect the preformed lead-ins from back of curb to the handhole.
- (3) Preformed detector loops shall be factory assembled with ends capped and sealed against moisture and other contaminants. The loop configurations and homerun lengths shall be assembled for the specific application. The loop and homerun shall be constructed using a minimum 5/8 in. (16 mm) outside diameter, minimum 3/8 in. (9.5 mm) inside diameter Class A oil resistant synthetic cord reinforced hydraulic hose with 250 psi (1,720 kPa) internal pressure rating or a similarly sized XLPE cable jacket. The hose for the loop and homerun assembly shall be one continuous piece. No joints or splices shall be allowed in the hose except where necessary to connect homeruns to the loops. This will provide maximum wire protection and loop system strength. Hose tee connections shall be heavy duty high temperature synthetic rubber. The tee shall be of proper size to attach directly to the hose, minimizing glue joints. The tee shall have the same flexible properties as the hose to ensure that the whole assembly can conform to pavement movement and shifting without cracking or breaking. For XLPE jacketed preformed loops, all splice connections shall be soldered, sealed, and tested before being sealed in a high impact glass impregnated plastic splice enclosure. The wire used shall be #16 THWN stranded copper. The number of turns in the loop shall be application specific. Homerun wire pairs shall be twisted a minimum of eight turns per foot. No wire splices will be allowed in the preformed loop assembly. The loop and homeruns shall be filled and sealed with a flexible sealant to ensure complete moisture blockage and further protect the wire. The preformed loops shall be constructed to allow a minimum of 6-1/2 ft of extra cable in the handhole."

Method of Measurement.

Add the following to Article 886.05 of the Standard Specifications:

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

Basis of Payment.

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

REBUILD EXISTING HANDHOLE

Effective: January 1, 2002

Revised: March 1, 2025

895.04TS

This item shall consist of rebuilding and bringing to grade a handhole, double handhole, or heavy duty handhole at a location shown on the plans or as directed by the Engineer. The work shall consist of removing the handhole frame and cover and the walls of the handhole to a depth of eight (8) inches below the finished grade.

Handhole and Heavy Duty Handhole

Four (4) holes, four (4) inches in depth and one half (1/2) inch in diameter, shall be drilled into the remaining concrete; one hole centered on each of the four handhole walls. Four (4) #3 epoxy coated steel rebar, eight (8) inches in length, shall be furnished and shall be installed in the drilled holes with a masonry epoxy.

Double Handhole

Six (6) holes, four (4) inches in depth and one half (1/2) inch in diameter, shall be drilled into the remaining concrete; one hole centered on both short walls and two spaced equally on both long walls. Six (6) #3 epoxy coated steel rebar, eight (8) inches in length, shall be furnished and shall be installed in the drilled holes with a masonry epoxy.

All concrete debris shall be disposed of outside the right-of-way. All rebar must meet the specifications set forth in 1006.10.

The area adjacent to each side of the handhole shall be excavated to allow forming. All steel hooks, handhole frame, cover, and concrete shall be provided to construct a rebuilt handhole according to applicable portions of Section 814 of the Standard Specification and as modified in 814.01TS HANDHOLES Special Provision. The existing frame and cover shall be replaced if it was damaged during removal or as determined by the Engineer.

Basis of Payment.

This work shall be paid for at the contract unit price each for REBUILD EXISTING HANDHOLE, which price shall be payment in full for all labor, materials, and equipment necessary to complete the work described above and as indicated on the drawings.

TREE, SYRINGA RETICULATA IVORY SILK (IVORY SILK JAPANESE TREE LILAC), 2-1/2" CALIPER, TREE FORM, BALLED AND BURLAPPED

TREE, GLEDITSIA TRIACANTHOS VAR INERMIS IMPERIAL (IMPERIAL THORNLESS HONEYLOCUST), 2-1/2", BALLED AND BURLAPPED

TREE, ULMUS 'PROSPECTOR' (PROSPECTOR ELM), 2-1/2" CALIPER, BALLED AND BURLAPPED

PERENNIAL PLANTS, ORNAMENTAL TYPE, GALLON POT

Description. This work shall consist of excavation of the planting sites, removal and disposal of spoil, root removal as required: the purchase, transportation, storage, preparation and all tools required to plant balled and burlapped (B & B) trees, shrubs, annuals, perennials, vines, grasses, groundcovers and bulbs designated for parkways and miscellaneous areas; traffic control and protection: watering and all work necessary to assure healthy and well established plantings. Newly constructed landscape areas will be backfilled with soil as specified under separate line items.

Materials. Materials shall be according to the following Articles of Division 1000 - Materials of the Standard Specifications except as herein modified:

	Article/Section
Materials for Planting.....	1081.01

1. Trees and Shrubs-Nursery stock shall comply with American Standard for Nursery Stock ANZI Z60.1- 2014 (or latest edition). All trees shall be selected and tagged with a seal by Streets and Sanitation Bureau of Forestry ("BOF") or CDOT Foresters.
 - a. Provide nursery grown stock unless specifically indicated otherwise.
 - i. General: Well-branched and well-formed, sound, fibrous, healthy and free from disease, sun-scald, wind burn, abrasion and harmful insects or insect eggs with healthy, normal and unbroken root systems.
 - ii. Deciduous trees and shrubs: Symmetrically developed of uniform habit of growth with straight trunks or stems and free from objectionable disfigurements.
 - iii. Coniferous evergreen trees and shrubs: Well-developed symmetrical tops with typical spread of branches for each particular species or variety.
 - iv. Provide stock complying in all respects with ANSI Z60.1 and in sizes indicated, measured in accordance with ANSI Z60.1. Larger sizes with larger roots and root containment may be furnished if approved by the Engineer.
 - Do not spread or compress branches when measuring.
 - Measure main body of branches; do not measure extreme tips of single branches.
 - Pruning to size is not acceptable.
 - Up to 4 inches caliper, measure caliper at 5 inches above ground.
 - v. Tag each variety of tree or shrub to indicate common and botanical name.

- b. Shade and ornamental trees
Balled and Burlapped (B&B)
 - c. Deciduous shrubs
Balled and Burlapped (B&B) or container, as specified in plans
 - d. Coniferous evergreens
Container grown only
2. Ground Cover, Perennials and Ornamental Grasses
3. Provide field-grown or acclimatized container-grown plants from a commercial nursery, healthy, vigorous, of sizes indicated.
4. Bulbs, Corms, Tubers, and Rhizomes
- Provide bulbs, corms, tubers, and rhizomes shall be free of rot or disease. Top sized bulbs shall be provided unless otherwise specified.
5. Miscellaneous Landscape Materials
- a. Anti- desiccant: Film-forming emulsion, permeable to transpiration, while retarding excessive moisture loss.
 - b. Staking and guying materials: (per Engineer request only)
 - i. Stakes: 6' metal T posts.
 - ii. Wire: Galvanized mild steel wire, minimum 12 gauge; provide double strands.
 - iii. Hose: Rubber or plastic garden hose.
 - iv. Turnbuckles: Aluminum or galvanized steel.
 - v. Warning flaps: Fluorescent orange plastic surveyor's tape.
 - c. Tree wrap tape: Nurseryman's standard protective tape.

General Requirements. The Contractor shall begin locating all specified plant material immediately upon contract award or make arrangements for custom grown nursery stock as per CDOT request. All specified plant material requiring substitution due to unavailability or inferior quality shall be selected and/or approved by CDOT Landscape Architect. Proof that the plant material is secured must be on file with the Engineer prior to the processing of any payment to the Contractor, however, if the Contractor proceeded to do everything required to secure the specified plants and for reasons beyond the Contractor's control plant substitutions are required, such substitution shall follow the process detailed below.

Substitutions:

The Contractor shall make every effort to maintain the design intent of all landscape plans. To this end, substitutions of plant material shall be kept to an absolute minimum and requests for substitutions shall adhere to the following requirements.

1. Requests for substitution of plant material shall be submitted for review **eight (8) weeks PRIOR** to scheduled plant installation or, for projects scheduled over a year in duration,

as indicated by CDOT. All proposed substitutions are subject to approval by the CDOT Landscape Architect.

2. Requests for plant substitutions shall be submitted in writing and list contract item numbers, quantity, original plant name (botanical and common), original size, nurseries contacted (with phone numbers) for original material. The Contractor shall contact a minimum of ten (10) nurseries in search of a plant before that plant can be eligible for substitution. Contractor shall provide the list of ten (10) nurseries contacted along with the substitution request. nursery availability list shall be provided to assist in picking the substitute. If substitutions are approved for smaller sized plant material, new line items will be added to the contract as a contract modification. The unit price will be adjusted to reflect the lower cost of smaller plant material. The units may be increased depending on the plant material in question and upon approval by the Landscape Architect.

Inspections:

1. Plant/Tree Preliminary Approval Submittal Form must entered into the CDOT CMQA system and be approved by the Division of City Services at least **6 weeks prior** to the expected date of installation. No trees shall be delivered without CDOT Seal. Plant material not installed within 60 days of initial inspection will be required to be re-inspected. Plant/Tree Preliminary Approval Submittal Form's for fall planting will not be accepted after September 1 unless otherwise approved by CDOT Citywide Services.
2. Trees will be inspected at the Nursery. Plant inspections for materials other than trees will occur through submission of three (3) digital photographs per species which includes but is not limited to the following:
 - a. Photo of a representative plant next to a ruler
 - b. Photo the root system of said plant
 - c. Group photo of entire crop

Photographed plant materials shall be inspected at the nursery as directed by the Engineer.

3. An on-site inspection by CDOT will be made prior to the installation of plant material. Plants shall be unloaded in shaded area and lined up by species for final inspection. Any plant material not meeting specification (that being of good health) must be moved off the site.

Plant Delivery, Storage and Handling:

1. Schedule delivery to avoid storage on site. If planting does not occur immediately, store plants in a location protected from sun, weather and theft.
2. Do not prune trees and shrubs unless directed by the Engineer.
3. Cover to protect stock during transport. Plant material transported without cover shall be automatically rejected.
4. Bind stock to protect branches, bark, and overall shape during transport. Protect tree trunks prior to loading and unloading..
5. Balled and burlapped stock: Provide freshly dug stock unless otherwise approved.

6. Do not drop stock. Load and unload with care.
7. Protect tree trunks prior to loading and unloading. Damaged trees will be rejected on site.

Guidelines:

1. Planting season (as herein specified or as directed by the Engineer):

Herbaceous Plants:

- | | |
|------------------|----------------------------------|
| Where Irrigated: | April 15 to October 15 |
| Non-Irrigated: | April 15 to June 15 |
| | June 16 to September 14 |
| | (Requires SUPPLEMENTAL WATERING) |
| | September 15 to October 15 |

Woody Plants:

- | | |
|------------------|--------------------------|
| Where Irrigated: | March 15 to November 30 |
| Non-Irrigated: | March 15 to June 30 |
| | October 1 to November 30 |

- | | |
|--------|---------------------------|
| Bulbs: | October 15 to November 30 |
|--------|---------------------------|

2. Do not plant when soil is muddy or during frost.
3. Dates are dependent on species of plant material and weather. Planting might begin or end prior or after above dates as approved by Engineer or otherwise noted in plans.
4. No plant material shall be installed prior to the approval of final grade by CDOT City Services.
5. No plant material shall be installed before below-ground irrigation system components have been installed and operational.
6. Trees must be installed first to establish proper layout and to avoid damage to other plantings.

Preparation and Execution:

1. Installation cannot begin until the final grade has been achieved.
2. The Contractor shall be responsible for all plant layout. The layout must be performed by qualified personnel. The planting locations must be laid out as shown in the landscape plan this will require the use of an engineer's scale to determine some dimensions. The tree locations must be marked by staking and bed limits must be painted. The Engineer will approve the layout prior to installation.
3. In temperatures above 84 F, all plant material will be treated with anti-desiccant prior to installation. The Engineer may direct the contractor to treat with anti-desiccant for installations after September 1st.

Initial Maintenance:

1. Initial Maintenance: The Contractor is responsible for maintenance of each area until it has been accepted by the Engineer by issuance of Final Punch-List Completion letter, and the warranty period is formally started.
2. Begin maintenance when the final grade has been achieved in any one location.
3. Initial maintenance includes weeding, staking and guying of trees and trash removal from the area to be landscaped. The contractor will provide initial maintenance a minimum of once per week, or as directed by the Engineer.
4. Plants shall be watered immediately upon installation and on a regular basis thereafter. If the irrigation system is not able to provide enough water to establish the plants, the contractor will provide supplemental watering at no additional cost, except for Herbaceous Plants in non-irrigated areas planted during June 16 to September 14, which will be paid for according to the special provision SUPPLEMENTAL WATERING.
5. Initial Maintenance is intended to maintain all plants in a healthy and vigorous condition. This may require pruning, cultivating, replanting, tightening and repairing of supports, repair of wrapping, and furnishing and applying sprays as necessary to keep the plants free of insects and disease.
6. Initial Maintenance is included in the cost of these pay items.

Submittals.

1. Within 60 days of Contract Award, Contractor must submit proof that required plant material for Contract is secured. (For Substitutions see the General Requirements section.)
2. Request for Materials Inspection Sheet.
3. Anti-desiccant – Material Safety Data Sheet
4. Tree wrap – sample

Construction Requirements.

1. Excavation for Trees and Shrubs
 - a. Pits, beds and trenches: Excavate with sides vertical, bottom flat but with high center for drainage. Deglaze sides and loosen bottom.
 - b. Minimum dimensions, individual pits (unless prevented by planter wall):
 - i. The diameter of the hole shall be 1 foot wider than the root spread.
 - ii. The depth of the hole shall be such that the top of the root ball is 2 to 3 inches above finish grade (to allow for settling).
 - c. Remove all excavated subsoil from the site and dispose of legally. Do not backfill excavation with subsoil.
2. Planting Trees and Shrubs
 - a. Setting layer: Place and compact a layer of planting soil, of thickness indicated, in bottom of excavation.
 - b. Balled and Burlapped Stock: Set plants in excavation with top of ball 2 to 3 inches above finished grade. Add soil as required under ball to achieve plumb.

- i. Untie all cords binding burlap to trunk. Remove all burlap and wire baskets from top 1/3 of the root ball.
 - ii. Place backfill in 6" inch-thick layers. Work each layer by hand to compact backfill and eliminate voids. Maintain plumb during backfilling.
 - iii. When backfilling is approximately 2/3 complete, saturate backfill with water and repeat until no more can be absorbed.
 - iv. Place and compact remainder of backfill and water again.
 - c. Inspect and, if necessary, treat trunks for physical damage or insect infestation. Wrap trunks of smooth barked trees in November and remove in April.
3. Container-Grown Plants: Place and backfill as specified for balled and burlapped stock and as follows:
 - a. Immediately before placing, remove container and do not damage the root system.
 - b. Set and plumb plants even with grade. Place backfill to thoroughly cover all roots.
4. Form watering basin around trunk with backfill holding at least 5 gallons for shrubs and 10 gallons for trees. Apply moisture retaining mulch.
5. Pruning
 - a. Remove dead or broken branches.
 - b. Make cuts with sharp instruments within the branch collar. Do not remove leaders from trees. All pruning must be performed under the direct supervision of a certified arborist.
6. Planting Ground Cover and Small Plants
 - a. Open holes sized to accommodate roots, place plants at proper elevation and backfill with planting soil, working carefully to avoid damage to roots and to leave no voids. Build up a small water basin of planting soil around each plant.
 - b. Immediately after planting water well. Do not wash soil onto crowns of plants.
7. Bulbs

Plant all bulbs as detailed and as shown on the landscape drawings.
8. Staking and Guying of Trees (per Engineer Directive Only)
 - a. Guy and stake trees the same day as planting (per Engineer Directive only).
 - b. Staking
 - i. Tree stakes: six (6) foot Sterling Fence T-posts. The stake shall be embedded two (2) feet.
 - ii. Ties: Provide length of rubber or plastic hose to prevent wire loop from contracting tree trunk. Adjust to provide firm but not rigid support.
 - iii. Place guys equally spaced around trunk, with top of guy 6 to 7 feet above grade, and at 45 degree angle to vertical.
 - iv. Provide one turnbuckle per guy.

- v. Securely tie caution tape at the 1/3 and 2/3 points of each guy wire.

9. Shredded Hardwood Bark Mulch

- i. See SHREDDED HARDWOOD BARK MULCH special provision.

QC/QA Requirements.

1. All plants shall be obtained from Illinois Nurserymen's Association or appropriate state chapter nurseries, in hardiness zones of comparable local climatic range to the City of Chicago and approved by the Engineer. All trees and shrubs shall be dug prior to leafing out (bud break) in the spring or when plants have gone dormant in the fall, except for the following species which are only to be dug prior to leafing out in the spring. The Engineer reserves the right to expand this list upon submittal of the Planting Schedule.
 - a. Quercus (Oak)
 - b. Robinia (Black Locust)
 - c. Syringa reticulata (Japanese Tree Lilac)
 - d. Ulmus 'Frontier' (Frontier Elm)
2. Labor
 - a. Qualifications
 - i. The landscape contractor shall provide proof that the firm has the experience, ability and equipment that the work requires.
 - ii. The landscape contractor shall provide at least one supervisor who shall be present at all times during execution of this portion of the work and who shall be thoroughly familiar with the type of materials and design methods of the material being installed.
 - iii. The designated supervisor shall be present at all pertinent construction meetings and shall be on-site throughout the duration of the landscape portion of the project. This designated supervisor is the main point of contact between all parties involved in the landscape installation and shall be responsible for all submittals, schedules and samples required pursuant to the Contract Documents.
 - iv. The designated supervisor shall manage a minimum sized crew consisting of at least four (4) individuals. The crew shall not work on site without the designated supervisor present.
 - v. The designated supervisor shall be familiar with all pertinent Drawings and Specifications included in the Contract Documents and shall provide clear direction for all crew members involved.
 - b. Experience Requirement: The landscape contractor and the designated supervisor outlined above must meet the following requirements:
 - i. Minimum of five (5) years of successful and continuous experience on projects of this type, size and scope.
 - ii. Proof of the above requirements including photographic evidence of projects at installation and at different stages of maturity.

- iii. If applicable, demonstrate previous successful projects installed on behalf of CDOT.

Method of Measurement. Trees, Shrubs, Annuals, Perennials, Vines, Grasses, Groundcovers, and Bulbs will be measured per each of the type and size specified for open areas. Only acceptable plants will be measured for payment.

All materials and maintenance activities required to provide and establish healthy, thriving plant material shall be included in the cost of this item.

When supplemental watering is applied as required for Herbaceous Plants in non-irrigated areas during June 16 to September 14, it will be measured for payment according to the special provision SUPPLEMENTAL WATERING.

Basis of Payment. This work will be paid for at the contract price per each TREE, SYRINGA RETICULATA IVORY SILK (IVORY SILK JAPANESE TREE LILAC), 2-1/2" CALIPER, TREE FORM, BALLED AND BURLAPPED, and TREE, GLEDITSIA TRIACANTHOS VAR INERMIS IMPERIAL (IMPERIAL THORNLESS HONEYLOCUST), 2-1/2", BALLED AND BURLAPPED, and TREE, ULMUS 'PROSPECTOR' (PROSPECTOR ELM), 2-1/2" CALIPER, BALLED AND BURLAPPED, and PERENNIAL PLANTS, ORNAMENTAL TYPE, GALLON POT regardless of species. Payment shall include furnishing and installing the plant material of the type and size specified, and all materials, equipment, and labor necessary to complete the work.

PLANTING WOODY PLANTS

IDOT D1 LSP 2021

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

Delete Article 253.03 Planting Time and substitute the following:

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

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

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

- Red Maple (*Acer rubra*)
- Alder (*alnus* spp.)
- Buckeye (*Aesculus* spp.)
- Birch (*Betulus* spp.)
- American Hornbeam (*Carpinus carolina*)
- Hickory (*Carya* spp.)
- Eastern Redbud (*Cercis* spp.)
- American Yellowwood (*Cladrastis kentuckea* spp.)
- Corylus (Filbert spp.)
- Hawthorn (*Crataegus* spp.)
- Walnut (*Juglans* spp.)
- Sweetgum (*Liquidambar* spp.)
- Tuliptree (*Liriodendron* spp.)
- Dawn Redwood (*Metasequoia* spp.)
- Black Tupelo (*Nyssa sylvatica*)
- American Hophornbeam (*Ostrya virginiana*)
- Planetree (*Platanus* spp.)
- Poplar (*Populus* spp.)
- Cherry (*Prunus* spp.)
- Oak (*Quercus* spp.)
- Willow (*Salix* spp.)
- Sassafras (*Sassafras albidum*)
- Baldcypress (*Taxodium distichum*)
- Broadleaf Evergreens (all)
- Vines (all)

Fall Planting. This work shall be performed between October 1 and November 30 except that evergreen planting shall be performed between August 15 and October 15.

Planting dates are dependent on species of plant material and weather. Planting might begin or end prior or after above dates as approved by the Engineer. Do not plant when soil is muddy or during frost.

Add the following to Article 253.05 Transportation:

Cover plants during transport to prevent desiccation. Plant material transported without cover shall be automatically rejected. During loading and unloading, plants shall be handled such that stems are not stressed, scraped, or broken and that root balls are kept intact.

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

Trees must be installed first to establish proper layout and to avoid damage to other plantings such as shrubs and perennials.

The Contractor shall be responsible for all tree, shrub, and vine layout. The layout must be performed by qualified personnel. The planting locations must be laid out as shown in the landscape plan. This will require the use of an engineer's scale to determine dimensions.

Tree and shrub locations within each planting area shall be marked with different color stakes/flags and labeled to denote the different tree and shrub species.

Shrub and vine beds will first be marked out with flags to delineate the perimeter of the planting bed. Once the planting bed has been approved by the Roadside Development Unit, the perimeter shall be painted prior to the removal of the flags and turf. The removal of the existing turf will be by a method approved by the Engineer.

Prior to shrub, vine installation, all plants shall be placed above ground or planting locations clearly marked out.

All utilities shall have been marked prior to contacting the Roadside Development Unit. The Engineer will contact the Roadside Development Unit at (847) 705-4171 to approve the layout prior to installation. Allow a minimum of seven (7) working days prior to installation for approval.

Delete the first paragraph to Article 253.08 Excavation of Plant Holes and substitute with the following:

Protect structures, utilities, sidewalks, bicycle paths, knee walls, fences, pavements, utility boxes, other facilities, lawns, and existing plants from damage caused by planting operations. Excavation of the planting hole may be performed by either hand, machine excavator, or auger.

The excavated material shall not be stockpiled on turf, in ditches, or used to create enormous water saucer berms around newly installed trees or shrubs. Remove all excess excavated subsoil from the site and dispose as specified in Article 202.03.

Delete the second sentence of Article 253.08 Excavation of Plant Holes (a) and the third paragraph of Article 253.08(b) and substitute with the following:

Excavation of planting hole width. Planting holes for trees, shrubs, and vines shall be three times the diameter of the root mass and with 45-degree sides sloping down to the base of the root mass to encourage rapid root growth. Roots can become deformed by the edge of the hole if the hole is too small and will hinder root growth.

Planting holes dug with an auger shall have the sides cut down with a shovel to eliminate the glazed, smooth sides and create sloping sides.

Excavation of planting hole depth. The root flare shall be visible at the top of the root mass. If the trunk flare is not visible, carefully remove soil from around the trunk until the root flare is visible without damaging the roots. Remove excess soil until the top of the root mass exposes the root collar.

The root flare shall always be slightly above the surface of the surrounding soil. The depth of the hole shall be equal to the depth of the root mass minus one (1) inch allowing the tree or shrub to sit one (1) inch higher than the surrounding soil surface for trees that have a 1-inch caliper or smaller. The depth of the hole shall be equal to the depth of the root mass minus two (2) inches allowing the tree or shrub to sit two (2) inches higher than the surrounding soil surface for trees that have a 2-inch caliper or larger.

For stability, the root mass shall sit on existing undisturbed soil. If the hole was inadvertently dug too deep, backfill and recompact the soil to the correct depth.

Excavation of planting hole on slopes. Excavate away the slope above the planting hole to create a flattened area uphill of the planting hole to prevent the uphill roots from being buried too deep. Place the excess soil on the downslope of the planting hole to extend the planting shelf to ensure roots on the downhill side of the tree remain buried. The planting hole shall be three times the diameter of the root mass and saucer shaped. The hole may be a bit elongated to fit the contour of the slope as opposed to the typical round hole on flat ground.

Add backfill to create a small berm on the downhill portion of the planting shelf to trap water and encourage movement into the soil to increase water filtration around the tree. Smooth out the slope above the plant where you have cut into the soil so the old slope and the new slope transition together smoothly.

Add the following to Article 253.08 Excavation of Plant Holes (b):

When planting shrubs in shrub beds or vines in vine beds as shown on the plans or as directed by the Engineer, the Contractor will contact the Roadside Development Unit at (847) 705-4171 to

approve the layout prior to removing the existing turf. The removal of the existing turf will be by a method approved by the Engineer. Areas damaged outside the delineated planting beds shall be restored at the Contractor's expense.

Spade a planting bed edge at approximately a 45-degree angle and to a depth of approximately 3-inches around the perimeter of the shrub bed prior to placement of the mulch. Remove any debris created in the spade edging process and dispose of as specified in Article 202.03.

Delete Article 253.09 (b) Pruning and substitute with the following:

Deciduous Shrubs. Shrubs shall be pruned to remove dead, conflicting, or broken branches and shall preserve the natural form of the shrub.

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

Approved watering equipment shall be at the immediate work site area and in operational condition PRIOR TO STARTING the planting operation and DURING all planting operations OR PLANTING WILL NOT BE ALLOWED.

All plants shall be placed in a plumb position and avoid the appearance of leaning. Confirm the tree is straight from two directions prior to backfilling.

Before the plant is placed in the hole, any paper or cardboard trunk wrap shall be removed. Check that the trunk is not damaged. Any soil covering the tree's root flare shall be removed to expose the crown prior to planting.

Check the depth of the root ball in the planting hole. With the root flare exposed, one-inch caliper trees shall be set one inch higher than the surrounding soil and two-inch and larger caliper trees shall be set two inches higher than the surrounding soil. The root flare shall always be slightly above the surface of the surrounding soil. For stability, the root ball shall sit on existing undisturbed soil. If the hole was inadvertently dug too deep, backfill and recompact the soil to the correct depth.

After the plant is placed in the hole, all cords and burlap shall be removed from the trunk. Remove the wire basket from the top three quarters (3/4) of the root ball. The remaining burlap shall be loosened and scored to provide the root system quick contact with the soil. All ropes or twine shall be removed from the root ball and tree trunk. All materials shall be disposed of properly.

The plant hole shall be backfilled with the same soil that was removed from the hole. Clay soil clumps shall be broken up as much as possible. Where rocks, gravel, heavy clay, or other debris are encountered, clean topsoil shall be used. Do not backfill excavation with subsoil.

The hole shall be 1/3 filled with soil and firmly packed to assure the plant remains in plumb, then saturated with water. After the water has soaked in, complete the remaining backfill in 8" lifts, tamping the topsoil to eliminate voids, and then the hole shall be saturated again. Maintain plumb

during backfilling. Backfill to the edge of the root mass and do not place any soil on top of the root mass. Visible root flair shall be left exposed, uncovered by the addition of soil.

Add the following to Article 253.10 (b):

After removal of the container, inspect the root system for circling, matted or crowded roots at the container sides and bottom. Using a sharp knife or hand pruners, prune, cut, and loosen any parts of the root system requiring corrective action.

Delete the first sentence of Article 253.10(e) and substitute with the following:

Water Saucer. All plants placed individually and not specified to be bedded with other plants, shall have a water saucer constructed of soil by mounding up the soil 4-inches high x 8-inches wide outside the edge of the planting hole.

Delete Article 253.11 and substitute the following:

Individual trees, shrubs, shrub beds, and vines shall be mulched within 48 hours after being planted. No weed barrier fabric will be required for tree and shrub plantings.

The mulch shall consist of wood chips or shredded tree bark free not to exceed two (2) inches in its largest dimension, free of foreign matter, sticks, stones, and clods. Mulch shall be aged in stockpiles for a minimum of four (4) months where interior temperatures reach a minimum of 140-degrees. The mulch shall be free from inorganic materials, contaminants, fuels, invasive weed seeds, disease, harmful insects such as emerald ash borer or any other type of material detrimental to plant growth. A sample must be supplied to the Roadside Development Unit for approval prior to performing any work. Allow a minimum of seven (7) working days prior to installation for approval.

Mulch shall be applied at a depth of 4-inches around all plants within the entire mulched bed area or around each individual tree forming a minimum 5-foot diameter mulch ring around each tree. An excess of 4-inches of mulch is unacceptable, and excess shall be removed. Mulch shall not be tapered so that no mulch shall be placed within 6-inches of the shrub base or trunk to allow the root flare to be exposed and shall be free of mulch contact.

Care shall be taken not to bury leaves, stems, or vines under mulch material. 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 in accordance with Article 202.03.

Pre-emergent Herbicide shall be used in the around the plant beds and tree rings after the placement of mulch. See specification for Weed Control, Pre-emergent Herbicide.

Delete Article 253.12 Wrapping and substitute the following:

Within 48 hours after planting, screen mesh shall be wrapped around the trunk of all deciduous trees with a caliper of 1-inch or greater. Multi-stem or clump form trees, with individual stems having a caliper of 1-inch or greater, shall have each stem wrapped separately. The screen mesh shall be secured to itself with staples or single wire strands tied to the mesh. Trees shall be wrapped at time of planting, before the installation of mulch. The lower edge of the screen wire shall be in continuous contact with the ground and shall extend up to a minimum of 36-inches or to the lowest major branch, whichever is less. Replacement plantings shall not be wrapped.

Delete Article 253.13 Bracing and substitute with the following:

Unless otherwise specified by the Engineer, within 48 hours after planting all deciduous and evergreen trees, with the exception of multi-stem or clump form specimens, over 8-feet in height shall require three 6-foot long steel posts so placed that they are equidistant from each other and adjacent to the outside of the ball. The posts shall be driven vertically to a depth of 18-inches below the bottom of the hole. The anchor plate shall be aligned perpendicular to a line between the tree and the post. The tree shall be firmly attached to each post with a double guy of 14-gauge steel wire. The portion of the wire in contact with the tree shall be encased in a hose of a type and length approved by the Engineer.

During the life of the contract, within 72 hours the Contractor shall straighten any tree that deviates from a plumb position. The Contractor shall adjust backfill compaction and install or adjust bracing on the tree as necessary to maintain a plumb position. Replacement trees shall not be braced.

Delete the second sentence of the first paragraph of Article 253.14 Period of Establishment and substitute the following:

This period shall begin in April and end in November of the same year.

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

During the period of establishment, the Contractor shall properly care for all plants including weeding, watering, adjusting of braces, repair of water saucers, pruning, cultivating, tightening, and repairing supports, repair of wrapping, and furnishing and applying sprays as necessary to keep the plants free of insects and disease, or other work which is necessary to maintain the health and satisfactory appearance of the plantings. The Contractor shall provide plant care a minimum of every two weeks, or within 36 hours following notification by the Engineer. All requirements for plant care shall be considered as included in the cost of the contract.

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

During the period of establishment, watering (initial) shall be performed at least every 30 days following installation during the months of May through November and is included in the cost of the contract unit price per each for TREES, SHRUBS, or VINES, of the species, root type, and plant size specified. The Contractor shall apply per week a minimum of 15 gallons of water per tree, 10 gallons per large shrub, 5 gallons per small shrub, and 2 gallons per vine.

Additional watering will be done once a week (3 times a month) following installation during the months of May through November. Any required additional watering in between the regularly scheduled (initial) watering(s) will be paid for as Supplemental Watering.

Special consideration in determining water needs must be given during extreme weather conditions or if plants exhibit any signs of stress in between the regularly scheduled every thirty-day watering during the period of establishment. Water immediately if plants show signs of wilting or if top (1) inch to two (2) inches of soil is dry. Water to ensure that moisture penetrates throughout the root zone, including the surrounding soil, and only as frequently as necessary to maintain healthy growth. **Do not overwater.**

The Engineer may direct the Contractor to adjust the watering rate and frequency depending upon weather conditions. Should excess moisture prevail, the Engineer may delete any or all the additional watering cycles.

Add the following to Article 253.15 Plant Care (c):

The contractor shall correct any vine growing across the ground plane that should be growing up desired vertical element (noise wall, retaining wall, fence, knee wall, etc.). Work may include but is not limited to carefully weaving vines through fence and/or taping vines to vertical elements.

Add the following to Article 253.15 Plant Care (d):

The Contractor shall inspect all trees, shrubs, and vines for pests and diseases at least every two weeks during the months of initial planting through final acceptance. Contractor must identify and monitor pest and diseases and determine action required to maintain the good appearance, health, and top performance of all plant material. Contractor shall notify the Engineer with their inspection findings and recommendations within twenty-four (24) hours of findings. The recommendations for action by the Contractor must be reviewed and by the Engineer for approval/rejection. All approved corrective activities will be considered as included in the cost of the contract and shall be performed within thirty-six (36) hours following notification by the Engineer.

Add the following to Article 253.16 Method of Measurement:

Pre-emergent Herbicide will be measured for payment as specified in Weed Control, Pre-emergent Granular Herbicide. Additional Watering will be measured for payment as specified in Supplemental Watering.

Delete Article 253.17 Basis of Payment and substitute the following:

This work will be paid for at the contract unit price per each for TREES, SHRUBS, or VINES, of the species, root type, and plant size specified, and per unit for SEEDLINGS. The unit price shall include the cost of all materials, equipment, labor, plant care, removal, disposal, and incidentals

required to complete the work as specified herein and to the satisfaction of the Engineer. Payment will be made according to the following schedule:

- (a) Initial Payment. Upon completion of planting, mulching, wrapping, and bracing, 75 percent of the pay item(s) will be paid.
- (b) Final Payment. Upon inspection and acceptance of the plant material, or upon execution of a third-party bond, the remaining 25 percent of the pay item(s) will be paid.”
- (c) The placement of Pre-emergent Herbicide shall be paid for at the contract unit price for WEED CONTROL, PRE-EMERGENT GRANULAR HERBICIDE.
- (d) Additional Watering will be paid for as specified in SUPPLEMENTAL WATERING.

PLANTING PERENNIAL PLANTS

IDOT D1 LSP February 2020
CBBEL Modified

Delete Article 254.05 Layout of Planting and substitute the following:

When plants are specified to be planted in prepared soil planting beds, the planting bed shall be approved by the Engineer prior to planting. The Contractor shall be responsible for all plant layout. The layout must be performed by qualified personnel. The planting locations must be laid out as shown in the landscape plan. This will require the use of an engineer's scale to determine some dimensions. Bed limits shall be painted or flagged. Individual plants layout shall be marked prior to installation. The Engineer will contact the Roadside Development Unit at (847) 705-4171 to approve the layout prior to installation. Allow a minimum of three (3) days prior to installation for approval.

Add the following to Article 254.06 Planting Procedures:

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

- Spade a planting bed edge at approximately a 45 degree angle and to a depth of approximately three (3) inches around the perimeter of the perennial bed. Remove any debris created in the spade edging process and dispose of as specified in Article 202.03.
- Do not plant when soil is muddy.

- Trees and shrubs must be installed first to establish proper layout and to avoid damage to other plantings.
- Perennial plants shall be planted by a hand method approved by the Engineer. Open holes sized to accommodate roots, place plants so it is level with the surrounding soil and backfill with soil, working carefully to avoid damage to roots and to leave no voids. Build up a small water basin of soil around each plant.
- Thoroughly water plant beds within 2 hours of installation. Do not wash soil onto crowns of plants.

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

A mulch sample shall be submitted to the Engineer for approval seven (7) days prior to placing. Mulch shall be per SHREDDED HARDWOOD BARK MULCH special provision.

Within 24 hours, the entire perennial plant bed shall be mulched with two (2) inches of fine grade Shredded Hardwood Bark Mulch. Hardwood bark mulch shall be clean, finely shredded mixed-hardwood bark not to exceed two (2) inches in its largest dimension, free of foreign matter, sticks, stones, and clods. All hardwood mulch shall be processed through a hammer mill. Hardwood bark not processed through a hammer mill shall not be accepted.

Care shall be taken to place the mulch to form a saucer around each perennial so as not to smother the plants or bury leaves, stems, or vines under mulch material.

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

Perennial plants must undergo a 30-day period of establishment. Additional watering shall be performed not less than once a week for four weeks following installation. Any signs of stress exhibited by plant material must be given special consideration in determining water needs. Water immediately if plants begin to wilt, or if top (1) inch to two (2) inches of soil is dry. Water shall be applied at the rate of a minimum of 2 gallons per square foot. Water to ensure that moisture penetrates throughout the root zone, including the surrounding soil, and only as frequently as necessary to maintain healthy growth. **Do not over water.**

Should excess moisture prevail, the Engineer may delete any or all of the additional watering cycles. In severe weather, the Engineer may require additional watering.

Water must be applied in such a manner so as not to damage plant material. Water must trickle slowly into soil and completely soak the root zone. An open end hose is unacceptable. Water early in the day and apply water as close to the

soil as possible without washing out soil or mulch. Water at the base of the plant to keep as much water as possible off plant leaves in order to minimize fungus problems. Watering of plants in beds shall be applied in such a manner that all plant holes are uniformly saturated without allowing water to flow beyond the periphery of the bed. Thoroughly saturate all areas of the perennial bed, not just individual plants. The plants to be watered and the method of application will be approved by the Engineer.

The Contractor will not be relieved in any way from the responsibility for unsatisfactory plants due to the amount of watering. Any loss of newly installed plant material determined by the Engineer to be due to lack of water, is the responsibility of the contractor to replace at no additional cost. Any damage to plant material due to incorrect watering must be corrected or replace at the Contractors expense, to the satisfaction of the Engineer.

Add the following Article 254.08 Period of Establishment:

During the period of establishment, weeds and grass growth shall be removed from within the mulched perennial beds. This weeding shall be performed a minimum of once per week or within 48 hours following notification by the Engineer during the 30-day period of establishment. The Contractor will not be relieved in any way from the responsibility for unsatisfactory plants due to the extent of weeding.

The weeding may be performed in any manner approved by the Engineer provided the weed and grass growth, including their roots and stems, are removed from the area specified. Mulch disturbed by the weeding operation shall be replaced to its original condition. All debris that results from this operation must be removed from the right-of-way and disposed of at the end of each day in accordance with Article 202.03.

Add the following to Article 254.09 Method of Measurement:

- a) Disposal of weeds, sod, containers, and debris (rock, stones, concrete, bottles, plastic bags, etc.) removed from the perennial planting bed as specified in Article 202.03.
- b) All perennials shall be paid under this pay item regardless of species.

Add the following to Article 254.10 Basis of Payment:

- a) Payment for Shredded Mulch shall be included in contract unit price of the perennial plant pay item.
- b) The unit price shall include the cost of all materials, equipment, labor, plant care, removal, disposal, and incidentals required to complete the work as specified herein and to the satisfaction of the Engineer.

FAILURE TO COMPLETE PLANT CARE AND ESTABLISHMENT WORK ON TIME

IDOT D1 LSP 2025

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 “Planting Woody Plants” 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
- \$40.00 per large shrub/per day
- \$35.00 per small shrub/per day
- \$20.00 per vine/per day
- \$20.00 per perennial/per day
- \$20.00 per sq yd sod/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.

PROTECTION OF EXISTING TREES

IDOT D1 LSP 2025

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

The Contractor shall coordinate with the city and **village forester or arborist (Roadside Development Unit 847.705.4171)** prior to the start of construction to do a walk through and determine which trees or shrubs are to be protected, method of protection, and determine type of work to minimize damage to the tree.

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

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

1. Whenever proposed excavation falls within a drip-line of a tree, the Contractor shall:
 - a. Root prune 6-inches behind and parallel to the proposed edge of trench a neat, clean vertical cut to a minimum depth directed by the Engineer through all affected tree roots.
 - b. Root prune to a maximum width of 4-inches using a reciprocating saw blade for cutting tree roots or similar cutting machine. Trenching machines will not be permitted.
 - c. Exercise care not to cut any existing utilities.
 - d. If during construction it becomes necessary to expose tree roots which have not been pre-cut, the Engineer shall be notified and the Contractor shall provide a clean, vertical cut at the proper root location, nearer the tree trunk, as necessary, by means of hand-digging and trimming with chain saw or hand saw. Ripping, shredding, shearing, chopping, or tearing will not be permitted.
 - e. Top Pruning: When thirty percent (30%) or more of the root zone is pruned, an equivalent amount of the top vegetative growth or the plant material shall be pruned off within one (1) week following root pruning.
2. Whenever curb and gutter is removed for replacement, or excavation for removal of or construction of a structure is within the drip line/root zone of a tree, the Contractor shall:
 - a. Root prune 6-inches behind the curbing so as to neatly cut the tree roots.

- b. Depth of cut shall be 12 inches for curb removal and replacement and 24 inches for structural work. Any roots encountered at a greater depth shall be neatly saw cut at no additional cost.
 - c. Locations where earth saw cutting of tree roots is required will be marked in the field by the Engineer.
3. All root pruning work is to be performed through the services of a licensed arborist to be approved by the Engineer.

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

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

B. Temporary Fence:

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

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

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

C. Tree Trunk Protection:

- 1. The Contractor shall erect trunk protection around all trees within the

construction area to prevent damage to the trunk of the tree when temporary fence is not an option before any work begins or any material is delivered to the jobsite. No work is to be performed (other than root pruning), materials stored, or vehicles driven or parked within the "tree protection zone".

2. The 2 inch x 8 inch x 8 foot boards shall be banded continuously around the trunk of each tree to prevent scarring of the trees shown on the plans or designated by the Engineer.
3. Multi-stem trees, saplings, and shrubs to be protected within the area of construction, temporary fence may be used for trunk protection.

Tree trunk protection will be paid for at the contract unit price per each for TREE TRUNK PROTECTION), which price shall include materials, installation, and removal.

D. Tree Limb Pruning:

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

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

E. Removal of Driveway Pavement and Sidewalk:

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

F. Backfilling:

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

G. Damages:

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

SHREDDED HARDWOOD BARK MULCH

Effective: June 1, 2012

Revised: March 21, 2022

Description. The work under this item shall consist of furnishing, transporting, and placing shredded hardwood mulch into proposed planting beds or around proposed trees as described herein.

Materials. Hardwood bark mulch shall be clean, finely shredded mixed hardwood bark, not to exceed two (2) inches in its largest dimension, free of foreign matter, sticks, stones, and clods. All hardwood bark mulch shall be processed through a hammermill.

General Requirements. The Contractor shall supply and install shredded hardwood bark mulch to mulch around trees, shrubs and herbaceous plants in landscaped planting beds. Existing trees require a four (4) foot minimum diameter ring around the base of the tree. Annual areas shall be mulched with pine bark fines.

The Contractor shall remove all litter and plant debris, repair grade by raking and adding planter soil mix or pulverized topsoil as needed prior to mulching. Care shall be taken not to bury leaves, stems, or vines under mulch material.

All finished mulch areas shall be left smooth and level to maintain a uniform surface and appearance. All work areas shall be clean of debris and mulch prior to leaving the site.

Submittals. A sample shall be provided prior to performing the work.

Construction Requirements. Place mulch manually around plants as follows:

Annuals: Spread one (1) inch of mulch lightly through annual plantings.

Perennials, bulbs, groundcovers, vines, grasses: **Spread two (2) inches of mulch around plants.** Ensure mulch is away from crowns of plants.

Shrubs, including roses: Spread three (3) inches of mulch around shrub. Ensure mulch is away from stems and crown of shrub.

Trees, shade and ornamental: Spread three (3) inches of mulch around trees. Do not pile mulch around trunk; ensure root flare is visible.

Mechanical or power mulch systems are not acceptable methods of placing shredded hardwood mulch.

Method of Measurement. SHREDDED HARDWOOD BARK MULCH will not be measured for payment in place.

Basis of Payment. This work will be paid for at the contract unit price per tree, annual, perennial, bulb for completing the work as specified.

MULCH PLACEMENT

IDOT D1 LSP 2025
CBBEL Modified

This work shall be done in accordance with the applicable portion of Section 253.02 (c) and Section 1081.06 of the Standard Specifications for Road and Bridge Construction.

Description: This work shall consist of furnishing, transporting, and spreading an approved shredded hardwood bark mulch to the depth specified in areas as shown in the plans or as directed by the Engineer.

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.
- Per SHREDDED HARDWOOD BARK MULCH

A sample must be supplied to the Roadside Development Unit for approval prior to performing any work. Allow a minimum of seven (7) working days prior to installation for approval.

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

The Contractor shall spade a planting bed edge at approximately a 45-degree angle and to a depth of approximately 3-inches around the perimeter of the tree mulch ring, remove all weeds, litter, and plant debris prior to placement of the mulch. Remove any debris created in the spade edging process and dispose of as specified in Article 202.03. The Contractor shall repair the grade by raking and adding topsoil as needed before mulching.

Mulch shall be applied at a depth of 4-inches around all plants within the entire mulched bed area or around each individual tree to form a mulch ring. An excess of 4-inches of mulch is unacceptable and excess shall be removed. Mulch shall be tapered so that no mulch shall be placed within 6-inches of the shrub base or trunk to allow the root flare to be exposed and shall be free of mulch contact.

The diameter of the mulch rings shall be as follows:

- Trees with a diameter less than 10 inches shall have a minimum 5 – foot diameter mulch ring, 10' diameter preferred.
- Trees with a diameter between 10 -15 inches shall have a minimum 6 - foot diameter mulch ring, 10' diameter preferred.
- Trees with a diameter of 16 inches or greater shall have a minimum 8 – foot diameter mulch ring, 10' diameter preferred.

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. Mulch volcanos are unacceptable.

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.

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. Areas not meeting the satisfaction of the Engineer shall not be measured for payment. Plan quantities are estimates only. Actual quantities will be measured in place. Agreement to plan quantities will not be allowed.

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

TELEVISION INSPECTION OF SEWER

Effective: January 1, 2023

Description. Work under this item includes televised inspections and documentation of existing sewer conditions as detailed in the plans, standard drawings, work order and/or as directed by the Engineer.

General Requirements. All sewer(s) must be videotaped within one (1) month of the start of construction, unless directed otherwise by the Engineer. Any out of focus or distorted audio on any portion of the videotape will be cause for rejection of the videotape and require re-taping the inspection of the sewer at the Contractor's expense. No additional working days will be allowed due to delays in securing the videotaping services of a private vendor.

Televising Procedures:

Televised sewer inspections must be restricted to one (1) section of the sewer at a time, starting and stopping at manholes, junction structures, or other point of access to provide a high-quality video inspection. The televising procedure must be performed so as to avoid creating backups in sewage flow sufficient enough to cause disruptions in service or flooding. When a high volume of sewage flow is present within the sewer and prevents a televised inspection, the Contractor must notify the Engineer on how to proceed with the work. The Contractor is to flush sewers when necessary to remove light accumulations of debris to facilitate the televised inspection.

The video camera must be passed through the sewer at a uniform rate of travel not to exceed 30-feet per minute. The inspection must show the top and sides of sewer pipes, manholes, junctions, house connections, obstructions, or other conditions, which reveal the sewers architecture and physical condition. Panning and zoom rates must be controlled to provide clarity of the videotaped inspection during playback.

If the video camera is inhibited by any obstruction, which was not removed by flushing, the Contractor must re-set the equipment in a manner so that the inspection can continue from the opposite direction. If the obstruction prevents further videotaping of the sewer, the Contractor must notify the Engineer on how to proceed with the work.

The contractor is responsible for locating all live drains, dead drains and lateral sewers connected to the main sewer section being videotaped.

All sewer and lateral connections, manhole risers, missing bricks, voids, and dark areas are to be videotaped. The camera must be held in the viewing position long enough for a proper evaluation to be performed.

If necessary, a high-pressure water jet spray will be utilized downstream of the camera. The spray must be equally spread out within the sewer to define the contour shape of the sewer.

If the camera should go underwater, the Contractor must upright or adjust the camera height and re-videotape the omitted portion of the sewer.

Measurements for location references within the sewer must be referenced to above ground locations by means of a metering device. Marking of the transport cable(s), or similar method requiring interpolation for distances or sewer depths, is not acceptable. Location references must begin at the centerline of the upstream manhole or access point, unless directed otherwise by the Engineer. All distance measurements must be narrated and electronically shown on the videotaped inspection as appropriate.

Recorded Information for Sewer Inspections:

- a. Audio and written documentation must accompany all videotapes submitted to the Engineer.
- b. The voice narrations on the videotape(s) must provide brief but informative comment on data of significance, i.e., the distance traveled within the sewer, location of any unusual conditions or damage, collapsed pipe or manhole sections, blockages, or other discernible features.
- c. The videotape(s) must include the following information:
 - i. Data View:
 1. Name of streets containing sewers being televised.
 2. Report or videotape number.
 3. Date of TV inspection.
 4. Upstream and downstream manhole or station numbers.
 - ii. Current distance of travel (tape counter distance).
 - iii. Printed labels on tape container and tape cartridge must include location, date, format, and other descriptive reference information.

Submittals. The Contractor must provide two videotaped inspections for documenting the condition of existing City sewers within the area of construction, or in areas as directed by the Engineer. The first videotaped inspection must be made before the start of any construction. The second videotaped inspection is to be made after the installation of the sewer liner, and restoration of street and parkway areas has been completed. The location and narration of both the pre-construction and post construction videotaped inspections must be synchronized to enable a comparison to be made in the condition of the sewer(s) before and after construction.

Videotaped inspections must be recorded in a CD/DVD format, in high quality color. All disks submitted to the Engineer must be read only format. Printed labels on diskette cases and diskette must include the contract name and number, date of inspection, and the location of the inspection.

Method of Measurement. This work will be measured at the contract unit price per foot for each size of sewer televised, documented, and accepted by the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per foot for the TELEVISION INSPECTION OF SEWER. The cleaning of sewers prior to videotaping shall be included in the cost of this work.

WASHOUT BASIN

Description: This item shall consist of constructing and maintaining a washout basin for concrete trucks and other construction vehicles.

Requirements: The work shall include general maintenance and removal of all construction debris, relocating basin as needed, and removing the basin at project completion .

Method of Measurement and Basis of Payment: This item will be measured and paid for at the contract unit lump sum price for WASHOUT BASIN.

TRASH RECEPTACLE

BENCHES

BICYCLE RACKS

Description. Work under this item shall consist of furnishing and installing a new site furnishing item(s) as detailed in the plans, standard drawings, work order and/or as directed by the Engineer, except as herein modified.

Materials. The item(s) shall be of the size, height, and shape as shown on the plans. Additional features shall be included as shown on the plans.

Products of equal quality and material having essentially the feature, design, and assembly as specified and indicated on the drawings may be considered as acceptable substitutes but are subject to the review and approval of the Engineer.

The materials shall be according to the following:

Steel and Iron: Free of surface blemishes and complying with the following:

- (a) Plates, Shapes, and Bars: ASTM A36
- (b) Tubing: Cold-formed steel tubing complying with ASTM A500 or ASTM A513, based on the type of use intended
- (c) Sheet: Commercial steel sheet complying with ASTM A1011 or A1008, based on type of use intended
- (d) Malleable-Iron Castings: ASTM A47, grade as recommended for type of use intended.
- (e) Gray-Iron Castings: ASTM A48 class as recommended for type of use intended.
- (f) Stainless-Steel Sheet, Strip, Plate, and Flat Bars: A240 or ASTM A666, Type 316L, class as recommended for type of use intended.

Wood: Surfaced smooth on four sides with eased edges; kiln dried, free of knots, solid stock of species indicated. Clear Grade or better

Plastic: Color impregnated, color and UV-light stabilized, and mold resistant Polyethylene, fabricated from virgin plastic HDPE resin.

Decal: Flexible, printable, color and UV-light stabilized, and mold resistant Cast Vinyl with clear permanent self-adhesive. 2 mil minimum thickness. Gloss finish or as shown on the plans.

Anchors, Fasteners, Fittings, and Hardware: ASTM A193, manufacturers or fabricators standard, corrosion-resistant-coated or noncorrodible materials; commercial quality, tamperproof, vandal and theft resistant, concealed, recessed, and capped or plugged. Unless otherwise indicated, provide Type 316 stainless steel fasteners.

Finish. The item shall be coated as specified below. Color of the coating shall be per the plans. The coating shall be applied only after the item has been fabricated. Apply coating to produce surface films without cloudiness, spotting, holidays, laps, runs, sags, ropiness, or other surface imperfections. The final product shall not contain cracks in the coating, ripples in the curved areas, nor any damage due to fabrication and or shipping.

- (a) Steel and iron shall be shot blast to near white steel and then an iron phosphate

pretreatment shall be applied.

- (b) Primer shall be a thermosetting epoxy powder coating electrostatically applied and cured six minutes at 250 °F (121 °C). The primer thickness shall be 1.8-10 mils (45-250 µm).
- (c) Topcoat shall be triglycidyl isocyanurate (TGIC) polyester powder coating, electrostatically applied and cured in an oven for 20 minutes at 250 °F (121 °C). The total of all the coatings shall be 8-10 mils (200-250 µm).

General Requirements. Form metal components of the item to required shapes and sizes with true, consistent curves, lines, and angles. Form simple and compound curves of rods, pipes, and tubes by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of the components. Rods, pipes, and tubes shall be a continuous piece as shown on the plans and shall not be welded in segments.

Weld connections continuously. Weld solid members with full-length, full-penetration welds and hollow members with full-circumference welds. At exposed connections, finish surfaces smooth and blended, so no roughness or unevenness shows after finishing and welded surface matches contours of adjoining surfaces.

Place, align, or locate any material seams or similar items in less prominent or less visible locations on the final fabrication.

Polish, sand, or otherwise finish all exposed surfaces to a smooth and uniform finish across all fabrications. Surfaces shall be free of burrs, barbs, splinters, and sharpness; all edges and ends shall be rolled, rounded, or capped. Surfaces shall be free of blemishes including pitting, dents, cuts, gouges, seam welds, seam marks, roller marks, rolled trade names, stains, discolorations, and any other roughness or defects caused by the manufacturing or fabrication process

Separate metals from dissimilar materials to prevent electrolytic action.

Noticeable variations in the appearance of the items is unacceptable. Factory assemble components to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.

Attach decals as shown on the plans. Application surfaces shall be clean and free of foreign material prior to placement. Decals shall be placed straight, level, and true and burnished in place. Seams or joints shall be tight without overlap. Decal surface shall be free of bubbles, wrinkles, or other imperfections.

Each item will be placed at the location(s) indicated in the plans and per the CDOT Street and Site Plan Design Standards. The locations will be field marked and verified for approval by the Engineer prior to installation. The placement of the item shall be in relation to the surrounding elements and follow the standard setbacks and requirements. The placements shall be centered and aligned with the adjacent streetscape elements such as light poles, benches, planters, etc, in a uniform and consistent manner. Items with graphics or openings shall be orientated with direction of travel, as shown on the plans, and/or as directed by the Engineer. The items shall also be placed centered within the sidewalk panels or along control joints. Product markings or logos shall be hidden from view.

Items located within sidewalk area shall be anchored to the PORTLAND CEMENT CONCRETE SIDEWALK of the thickness specified.

Items located within a paver field shall be anchored to the CONCRETE BASE SLAB of the thickness specified below the surface of the unit pavers.

At locations where no concrete base material is present, the Contractor shall construct and provide it. The concrete base material shall be sized, located, and constructed as shown on the plans or as directed by the Engineer. Concrete base material shall be measured for payment and paid for under PORTLAND CEMENT CONCRETE SIDEWALK of the thickness specified and the subbase shall be paid for under SUBBASE GRANULAR MATERIAL, TYPE B.

Litter receptacles located along special event routes are not to be anchored in place. The Contractor shall confirm if the location is along one of these routes with the Engineer prior to installation.

Submittals. The following information shall be provided for approval prior to performing the work:

- (a) Shop drawings and product data of each item type
- (b) Hardware and Fasteners: Product data sheets and material sample(s) of each type
- (c) Epoxy: Product data sheets
- (d) Finish: Product data sheets and material sample(s) of each color
- (e) Decal: Product data sheets, shop drawings of graphic layout, and material sample(s)
- (f) Other: Product data sheets

Construction Requirements. Deliver items to site in manufacturer's original, unopened containers and packaging. Upon delivery, examine packages immediately to ensure all items are complete and undamaged. Store items in a protected, dry area in manufacturer's unopened containers. Protect item's finish from damage during handling and installation.

Installation may only occur when the base surface material work has been completed and has cured.

Anchor bolts must be located with the assembled item in place. The items must be assembled and mounted as detailed in the plans. Anchor the items with stainless steel threaded rod, minimum 3/4 inch diameter x 7 inch or as necessary for proper embedment, tamperproof nuts, and washers. The hardware must be drilled and epoxy set into the concrete base for pavers, the concrete wearing surface, and/or the concrete sidewalk surface only after the item location has been finalized. Minimum embedment of the anchor is 4 inches or two-thirds the depth of the concrete material for thicker base materials. Bicycle racks located in areas of concrete sidewalk may be installed using stainless steel mushroom head spikes, minimum 3/8 inch diameter x 4 inch, in lieu of the other method. Clean surfaces of debris and dust after drilling and prior to setting the anchor bolts and item. Items are to be placed level, true, flush, and plumb in all directions. Anchored items shall be secure, stable, and free from movement.

Protect finishes from damage during construction period by use of temporary protective coverings. Remove protective covering at project completion or when directed by the Engineer. Restore finishes damaged during installation and construction period so that no evidence remains of correction work. Return items which cannot be refinished in the field to the shop; make required alterations and refinish entire unit or provide new units as required.

Manufacturer's Warranty. Manufacturer's written warranty must be submitted to CDOT prior to installation of the items.

Method of Measurement. This work will be measured for payment in place per each installed.

Basis of Payment. This work will be paid for at the contract unit price per each site furnishing of the standard type specified.

Mounting hardware will not be paid for separately but shall be included this item.

BRICK PAVERS

Description. Contractor shall provide all equipment and materials, and do all work necessary to construct the brick paving as indicated on the Drawings and as specified.. Any required testing not covered by Article 1041 shall be provided by the supplier.

General Requirements. Drawings and general provisions of Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

Quality Assurance. Except as modified herein, the work shall be in accordance with the applicable portions of the Standard Specifications.

Submittals: The contractor shall submit the following for approval of the Engineer:

- A. Manufacturer's Literature: Materials descriptive literature, installation instructions, and paver color selection chart.
- B. Test Reports: Three (3) copies, showing compliance with specified ASTM requirements.
- C. Shop Drawings: Layout drawings of each paved area showing the pattern of pavers, indicate pavers requiring cutting, indicate setting bed methods in each area, drainage patterns and drains. Drawings shall also include details of setting beds, tie bars, and note all materials and their thickness.
- D. Mockup. Provide mockup of each layout pattern (including polymeric sand), with all paver colors represented in each mockup. If pattern abuts another pattern, mockup shall span both patterns. Contractor shall submit to the Engineer paver samples indicating full color range of all BRICK PAVERS on slab in the specified colors and patterns.
- E. Contractor shall submit to the Engineer a minimum of 25 SF of unit pavers for approval. Submit paver samples indicating full color range of all BRICK PAVERS on slab in the specified colors and patterns.

Delivery, Storage, and Handling: Deliver and handle pavers in such a manner as to prevent damage. Units shall be stored above ground on blocking. Blocking shall be clean and nonstaining. All damaged or otherwise unsuitable material shall be immediately removed from the job site.

Access to Businesses and Homes. During the installation of the pavers and base Contractor shall keep driveways and entrances serving the businesses and homes clear and available to the Owner and the business' employees at all times. Customer access shall be maintained during normal business hours. Contractor is responsible for providing temporary structures such as wooden bridges, ramps, or walkways as required to provide the public safe, secure, and recognizable access ways to businesses during construction.

Pavers:

A. Pavers shall be:

- A. Model: As shown in the plans
- B. Color: As shown in the plans
- C. Size: As shown in the plans
- D. Installed as indicated on drawings.

Bituminous Setting Bed Components:

- A. Asphalt Cement: Shall conform to ASTM D3381 with a viscosity grade of A.C. 10 or A.C. 20.
- B. Aggregates: Clean, hard sand with durable particles and free from adherent coating, lumps of clay, alkali salts, and organic matter. Sand shall be uniformly graded from coarse to fine with all passing the No. 4 sieve and shall meet screen analysis test, ASTM C136.
- C. Mix Ratios: 7 percent asphalt (by weight), 93 percent aggregates (by weight). Each ton shall be apportioned by weight in the approximate ratio of 145 pounds asphalt cement to 1,855 pounds aggregate.
- D. Mix Requirements: Bituminous setting bed shall be plant mixed and heated to approximately 300°F.
- E. Contractor shall determine exact proportions to produce the appropriate mixture for construction of the bituminous setting bed to meet construction requirements.
- F. Setting Bed Primer: Shall conform to ASTM D 2028 - Standard Specification for Cutback Asphalt (Rapid-Curing Type).

Neoprene Tack Coat Components:

- A. Mastic (asphalt adhesive):
 - Solids (base): 75 percent \pm 1 percent.
 - Pounds/gallon: 8-8.5 pounds/gallon
 - Solvent: Varsol (over 100° F. flash)
- B. Solids (base): 2 percent Neoprene.
 - 2 percent Neoprene.
 - 10 percent Fiber.
 - 88 percent Asphalt.
- Melting Point: ASTM D 36, 200°F. minimum.
- Penetration: 77 ° F 100 gram load,
5-second (.1 mm) 23-27.
- Ductility: ASTM D 113 at 25°C., \pm 0.5°C (77°F \pm 0.9°F)
5 cm per minute (\pm 5%)

Paver Joint Material. Polymeric sand as recommended by paver manufacturer and approved by Engineer. See plans for color.

Portland Cement Concrete Underlayment. The Portland Cement Concrete Underlayment with 2" drainage weep holes as indicated in the plans shall be filled with pea gravels and covered with filter fabric. The tie bars shall be in accordance with Standard Specification Section 282, 424, 442, Article 1004.01, and as shown in the plans.

General.

- A. All pavers shall be installed per the respective manufacturer's recommendations.
- B. No paver setting work shall be performed when the underlayment has free moisture, ice, or snow, or when the underlayment is frozen.
- C. Concrete underlayment shall be sound, clean, and free from debris and materials or substances which will hinder the bond of the setting bed. The top surface of concrete underlayment slab shall not vary more than one quarter (1/4) inch of its proposed elevation.
- D. No bituminous setting bed work shall be performed when the ambient temperature is below 40°F. or at 40°F. and falling, or at any time when the setting bed stiffens before paver units are installed.

Paver Cutting.

- A. To reduce dust during paver installation, unit pavers shall only be cut using wet saws. No dry cutting permitted.
- B. Cut pavers shall be placed in areas shown on the details in the plans. "L" shaped pavers shall be avoided where possible.
- C. Pavers shall be cut radially when joints between pavers on curves exceed 1/8 inch.
- D. Radial cut pavers shall be created by trimming both sides of paver.
- E. Pavers shall not be trimmed less than 2" wide. Placed pavers shall not be less than 60% of original size.

Bituminous Setting Bed Preparation.

- A. Place 3/4-inch deep control bars in parallel directly over base to be used as guides for striking board. Use wood shims under control bars to set proper grade.
- C. Place hot (250°F+) bituminous setting bed material between control bars and strike with striking board to create a smooth, firm, and even setting bed. Additional bituminous material may be necessary to achieve consistent quality setting bed.
- D. After completion of first setting bed panel, advance first control bar and wood shims to next position to prepare next panel. Contractor shall carefully fill depressions that remain between panels.
- E. Repeat procedure for successive setting bed panels. No wood shims or control bars shall be allowed to remain in the bituminous setting bed.
- F. Roll hot setting bed with a power roller (not over one (1) ton in weight) to a nominal depth of 3/4 inches. This thickness shall be adjusted so that when the pavers are placed and rolled, the top surface of the pavers will be at the required final grade.
- G. Tack coat goes on directly before paver is set. Only apply as much tack coat that can be set. Apply neoprene tack coat to surface of bituminous setting bed by mopping, squeegeeing, or troweling.

Paver Installation - Bituminous Setting Bed.

- A. Place pavers by hand in straight courses with hand tight joints and uniform top surface. Good alignment (deviation smaller than 1/4" over 10' run length) shall be kept and patterns shall be as shown on plans and details. Tolerances and deviations for pattern alignment, shall not exceed 1/4" over 5' run length. Tolerances and deviations for elevation alignment shall not exceed 1/4" over 5' run length. Tolerances and deviations for lippage shall not exceed 1/8".
- B. Protect the alignment and elevations of the newly laid pavers with plywood sheeting at all times. Advance the plywood as work progresses and maintain plywood protection over all areas subject to movement of materials, workers, and equipment.
- C. Pavers shall be cut only when necessary and used in courses as indicated on plans and details.
- D. Joints in the underlayment, if any, shall not reflect up through the setting bed and paver system.
- E. When all pavers are installed, apply joint sand to paving and sweep into all joints until joints are completely filled. Sweep clean the entire surface and remove all excess sand. Do not allow traffic on pavers prior to joints being filled.
- F. Protect newly laid pavers, slabs and curbs with plywood panels on which workers stand. Advance protective panels as work progresses but maintain protection in areas subject to continued movement of materials and equipment to avoid creating depressions or disrupting alignment of installed pavers, slabs or curbs.
- G. Replace cracked or chipped unit pavers at no additional cost to the Engineer.

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

Method of Measurement. BRICK PAVERS will be measured for payment of replaced pavers in place and the area computed in square feet.

Basis of Payment. BRICK PAVERS will be paid for at the Contract Unit Price per square foot for which such price shall include all labor, materials and equipment necessary to perform the work as herein specified.

VALVE VAULTS TO BE ABANDONED

Description: The tops of existing valve vaults to be filled shall be removed to an elevation of at least 3 inches below the earth subgrade of the proposed improvement. All water mains that connect to the valve vault shall be securely sealed with Class SI concrete or brick and mortar. After the concrete or mortar has set, the existing structure shall be filled with sand and the sand compacted.

Disposal of Excess Material: All material resulting from the filling of existing valve vaults shall be disposed of by the Contractor according to Article 202.03 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 VALVE VAULTS TO BE ABANDONED.

LUMINAIRE (SPECIAL)

Effective: March 9, 2024

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: 1351, 1546, 1608, 1612
Standard Drawings: 912, 959A

This work shall consist of furnishing and installing an LED ornamental acorn luminaire of the color indicated on the plans with internal smart node and mid-mount arm onto a street light pole at 14 feet from grade.

Materials. Luminaires shall meet the requirements of Material Specification 1612. The arm shall meet the requirements of Material Specification 1546. The luminaire shall have the general appearance of Standard Drawing 912. The arm shall have the general appearance of Standard Drawing 959A. Pole wire shall meet the requirements of Material Specification 1351. Smart lighting nodes shall meet the requirements of Material Specification 1608.

General Requirements. Installation shall meet all applicable requirements of Section 801 and Article 821.03 of the Standard Specifications. The pole wire shall be spliced to the field wire at the base of the pole using splicing methods approved by the Engineer. The luminaire shall be properly mounted to a 3-inch high by 3-inch diameter tenon with set screws. The contractor shall level and adjust the luminaire for proper illumination.

The wire hole shall be free from burrs and must be smooth. A rubber or nylon grommet shall be inserted into the hole. The arm shall be bolted to the pole and installed

Basis of Payment. This work will be paid for at the contract unit price per each for LUMINAIRE (SPECIAL).

TRENCH BACKFILL (SPECIAL)

Description: This work shall consist of placing trench backfill in accordance with section 208 of the Standard specifications. The trench backfill shall be compacted only by Method 1 as defined in Article 550.07 of the Standard Specifications.

Trench backfill must be performed mechanically with a compactor weighing 500 lbs or more.

Fine aggregate may not be used.

Method of Measurement and Basis of Payment: This work will be paid for at the contract unit price per cubic yard for TRENCH BACKFILL (SPECIAL), which price shall include all material, equipment, and labor necessary to place and compact the trench backfill as specified. The quantity of trench backfill for payment shall be determined by using the method of measurement defined in Article 208.03 (b) of the Standard Specifications.

TRENCH AND BACKFILL WITH SCREENINGS

Effective: March 9, 2024

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: Not Applicable
Standard Drawings: 579, 813

This work shall consist of excavating a trench for the installation of conduit and backfilling with limestone screenings as a portion of the total backfill of the trench, all as shown in Division of Electrical Operations Standard Drawings No. 579 and No. 813. This work shall meet all applicable requirements of Article 810.04(a) of the Standard Specifications.

Materials. Underground Cable Marking Tape shall meet the requirements of Section 1066.05 of the Standard Specifications. Backfill shall meet the requirements of Section 1003.04 of the Standard Specifications.

Construction Requirements. The trench shall be deep enough to provide thirty inches (30") of cover over the conduit to be installed. The trench shall not exceed twelve inches (12") in width unless approved by the Resident Engineer. The bottom of the trench shall be tamped, and the trench inspected by the Resident Engineer before conduit is installed. All trenches shall be backfilled as soon as possible after the installation of the conduit or cable. Any material excavated from the trenches that in the opinion of the Resident Engineer is satisfactory backfill, may be used for backfill above the layer of screenings. The limestone screenings shall be used to fill the bottom of the trench to a depth of one foot above the top of the conduit or duct encasement. Cinders, rocks, or other inappropriate materials shall not be permitted to be used as backfilling material. Backfilling material, beginning with limestone screenings shall be deposited in the trench in layers not to exceed six inches (6") in depth, and shall be thoroughly compacted with a mechanical tamper before the next layer is deposited in the trench. All trenches for conduit shall be backfilled as per this specification. Unsuitable material shall be disposed of according to the requirements of Section 202.03 of the Standard Specifications. Underground cable marking tape shall be installed twelve inches (12") below the finished grade for all conduit runs.

Method of Measurement. This work will be measured in feet along the centerline of the trench. Trench and backfill will not be measured for payment for conduit which is installed by pushing or by directional boring. Where more than one (1) conduit is installed in a single trench, only one run will be measured for payment.

Basis of Payment. This work will be paid for at the contract unit price per foot, measured with conduit in place, for TRENCH AND BACKFILL WITH SCREENINGS. This price shall include the cost of all excavation, furnishing and placing all backfill material, and disposal of all surplus excavated material. If sidewalk, driveway pavement or pavement must be removed and replaced, such work will be paid for separately.

TOPSOIL FURNISH AND PLACE, 4" (SPECIAL)

Description: This work shall consist of furnishing and placing topsoil. This work shall include all required excavation of suitable or unsuitable materials unless otherwise specified in the contract, ground preparation and pulverized topsoil. Work shall be completed in accordance with sections 202, 211, and 212 of the standard specifications.

Materials: Topsoil shall be loamy soil from the 'A' horizon of soil profiles of local soils. Loamy soil and the 'A' horizon soil profile are defined in the IDOT Geotechnical Manual. The loamy soil shall have an organic content between one and ten percent according to AASHTO T 194. It shall be relatively free from large roots, sticks, weeds, brush, or stones larger than 1 in. (25 mm) in diameter, or other waste products. At least 90 percent shall pass the No. 10 (2.00 mm) sieve according to Illinois Modified AASHTO T 27, and the pH shall be between 5.0 and 8.0 according to ASTM D 4972.

Topsoil shall be free of any residual herbicides and capable of supporting and germinating vegetation. Should the Village question the quality of the topsoil provided, for any reason, testing may be required in order to prove compliance with the specification. This testing, as requested, will be included in the cost of the contract.

Furnishing Topsoil: The Contractor shall furnish any topsoil from areas outside the limits of the right-of-way. A sample with an indicated source must be supplied to the City for their approval prior to its installation.

Placing Topsoil: Prior to placing topsoil, the ENGINEER, or his designee, shall identify, and appropriately mark, all areas to be restored. Areas disturbed as a result of the work, which fall outside the limits of construction, shall be restored per the specification at no additional cost. All areas shall be edged and squared to provide a neat and uniform appearance. Topsoil shall not be placed until the area to be covered has been shaped, trimmed, and finished. All silt fence and temporary erosion control devices shall be fully removed, and all irregularities or depressions in the surface due to weathering or other causes shall be filled or smoothed out before the topsoil is placed. Additionally, excavations, trenches, and restoration areas within twenty-four (24) inches of newly installed or replaced curbing, sidewalk, or path shall receive thorough compaction with a jumping jack style, or vibratory plate, compactor prior to placing topsoil. The final 50 mm (2in.) of topsoil placed shall be from a pulverized source, or sufficiently screened to provide a loose, even bedding for seed application.

If the existing surface has become hardened, compacted, or crusted, it shall be disked or raked or otherwise broken up to provide a bond with the lift of topsoil to be applied.

Total topsoil depths shall be a minimum of 6 inches in all turf areas. To prevent settling, every 3 inches of placed fill or topsoil shall be compacted utilizing a jumping jack style, or vibratory plate, compactor, or equal as approved by the project manager, or his designee.

Finishing: The surface of the topsoil shall be free from clods, stones, sticks and debris and shall be according to the lines/grades as shown on the plans.

Clearing Area and Disposal of Surplus Material: Upon completion of the work, all areas shall be cleared of equipment, debris, and excess material. Surplus or waste material resulting from construction operations shall be disposed of according to Article 202.03. of Illinois Department of Transportation Standard Specifications Current Edition. Excess material will not be paid for separately but shall be included in the cost of the topsoil placement.

Method of Measurement and Basis of Payment: This work will be paid for at the contract price per SQUARE YARD as TOPSOIL FURNISH AND PLACE, 4" (SPECIAL), which price shall be payment in full for all labor, material, and equipment necessary for the removal and disposal of excess material, the supply, and installation of the topsoil and all work and materials herein specified.

TEMPORARY ACCESS (COMMERCIAL ENTRANCE)

Revise Article 402.10 of the Standard Specifications to read:

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

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

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

Maintaining the temporary access shall include relocating and/or regrading the aggregate surface coarse 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 (COMMERCIAL ENTRANCE).

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

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

TEMPORARY SIDEWALK

Description. This work shall include the installation, maintenance, and removal of ADA compliant temporary sidewalk (including sidewalk, ramps, and detectable warnings), at locations as directed by the ENGINEER and per Section 424 and 440 of the Standard Specifications.

Materials. Concrete as approved by the Engineer.

Construction. All temporary sidewalk shall be a minimum of 2" thick, 5' wide, and ADA compliant. Contractor shall determine all grades, slopes and components to achieve ADA compliance.

Method of Measurement and Basis of Payment. The work shall be measured and paid for at the contract unit price per square foot for TEMPORARY SIDEWALK which price shall be payment in full for all material, labor, equipment, and any other items required to complete the work.

DETECTABLE WARNINGS (SPECIAL)

Effective: December 1, 2008

Revised: August 29, 2023

Description. Work under this item shall consist of installing detectable warning tiles on ADA ramps according to Section 424 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified. This work shall comply with the latest Chicago Department of Transportation (CDOT) ADA standard details and as detailed in the plans and/or work order. Tiles shall be linear and curved as required to meet plan layout.

Materials. The detectable warning tiles shall be provided by a Manufacturer on the current CDOT Approved List of Detectable Warning Products.

Construction Requirements. The equipment and installation procedures used shall be according to the Manufacturer's recommendations.

The Contractor shall install detectable warning tiles flush with adjacent concrete and snug to adjacent tiles resulting in a system that limits water infiltration around the perimeter and between tiles, or as directed by the Engineer.

Method of Measurement. Detectable warning tiles will be measured for payment in place and the area computed in square feet.

Basis of Payment. This work will be paid at the contract unit price per square feet for DETECTABLE WARNINGS (SPECIAL).

HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH

Description. Work under this item shall be performed according to Section 440 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified.

This work shall consist of the removal of hot-mix asphalt (HMA) surfaces, including adjacent Portland cement concrete pavement, trenches, and patches, in preparation for subsequent resurfacing as shown in the plans and as directed by the Engineer.

Construction Requirements. Prior to the start of grinding operations, all open lid structures shall be protected to prevent any grinding debris from entering the structure. Any debris entering structures shall be immediately removed and the entire structure shall be cleaned at no cost to the City.

Method of Measurement. This work will be measured for payment in square yards. No adjustment will be made for variations in the depth of material removed.

Basis of Payment. This work will be paid for at the contract unit price per square yard for HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH.

CURED-IN-PLACE PIPE LINER

A. General

1. Scope

- a. CONTRACTOR shall repair defective sewer segments without excavation using cured-in-place pipe (CIPP) as specified herein and where shown on the Plans.
- b. A thin, dry felt tube (pre-liner) shall be installed prior to CIPP installation, due to mitigate potential resin curing issues due to extensive infiltration at locations throughout the project.
- c. The reconstruction will be accomplished using CIPP which shall consist of a resin-impregnated flexible tube that is inverted into an existing sewer pipe through existing manholes and expanded to fit tightly against the existing pipe by the use of water or air pressure. The resin is cured by circulating hot water or by introducing controlled steam within the tube. When the thermosetting resin cures, the finish pipe will be continuous and tight fitting, and the total wall thickness shall be a homogeneous and monolithic felt and resin composite matrix that is chemically resistant to withstand internal exposure to domestic sewage. Once the tube/resin composite is cured, the inversion bladder and the carrying device are removed.

CIPP pulled into place according to ASTM F1743 will not be allowed.

B. Materials

1. Flexible Liner Material

The tube will consist of one or more layers of flexible needled felt or an equivalent nonwoven material. The tube will be continuous in length and the wall thickness shall be uniform. No overlapping sections shall be allowed in the circumference or the length of the liner. The tube will be capable of conforming to offset joints, bells, and disfigured pipe sections. The tube shall have sufficient strength to bridge missing pipe and stretch to fit irregular pipe sections. The wall color of the interior pipe surface of the CIPP after installation shall be a relatively light color so that a clear and detailed examination with closed circuit television inspection equipment can be made. The resin will be polyester or vinyl ester with proper catalysts as designed for the specific application. Each installation shall have a design report documenting the design criteria for a fully deteriorated pipe section, relative to the hydrostatic pressure, depth of soil cover, and type of soil.

All lining products, installation and testing of CIPP shall be in accordance with the specification reference standards from the American Society for Testing and Materials (ASTM) including: ASTM F1216, ASTM D638, ASTM D543, ASTM D790, and ASTM D5813.

The composite of the materials above shall upon installation inside the host pipe, exceed the applicable minimum requirements of ASTM F1216, including 4,500 psi for flexible strength, 250,000 psi for modulus of elasticity and 3,000 psi for tensile strength (tensile strength applies to pressure pipe only).

The CONTRACTOR shall submit to the ENGINEER for review prior to installation, the Manufacturer's product literature and certification, application and installation requirements for materials used in liner. The submittal shall include the liner pipe thickness to be used in this application with supporting design thickness calculations. The design shall assume fully deteriorated pipe conditions.

2. Acceptable Liner Products

The following CIPP Liners are acceptable products: Insituform, National Liner, CIPP Corporations.

3. CIPP Lining Thickness Design Criteria

- a. Diameter – 8" to 24"
- b. Depth – varies
- c. Ground Water Depth = assume half of soil cover
- d. Soil density = assume 120 lbs/c.f.
- e. Soil Modulus = assume 1000 psi
- f. Loading = assume highway loading
- g. Safety factor = 2.0

C. Execution

1. General

Installation shall be in accordance with standard practice for rehabilitation of existing pipelines and conduits by the inversion and curing of a resin – impregnated tube ASTM F1216 and AWWA C950.

2. Flow Bypassing

The CONTRACTOR, when required, shall provide for the transfer of flow around the section or sections of pipe that are to be lined. The bypass shall be made by diversion of the flow at an existing upstream access point and pumping the flow into a downstream access point or adjacent system. The pump and bypass lines shall be of adequate capacity and size to handle the flow. Bypass pumping hoses shall not cross roadways unless other approved in writing by the VILLAGE. The proposed bypassing system shall be approved in advance by the VILLAGE.

3. Preliminary Cleaning and Inspection

Prior to any lining of designated (sanitary and storm) sewer line segments, the CONTRACTOR shall remove internal deposits as necessary to assure proper liner installation. Video and a suitable log shall be provided by the CONTRACTOR which shall document, to the satisfaction of the ENGINEER, the condition of the sewer line segment both immediately before and after lining has been installed. CLEANING SHALL BE INCLUDED IN THE COST OF THE CIPP LINING PAY ITEM.

CLEANING.

Standard grade cleaning measures shall be used to clean sewers (storm and sanitary) of the size indicated in preparation for televised inspection at locations determined by the Engineer. All storm sewer to be lined as part of this project shall first be cleaned and televised to determine any required point repairs.

SEWER CLEANING CRITERIA.

The CONTRACTOR shall provide all labor, materials, and equipment to clean the sewers segments specified. Sewer cleaning is defined as the removal of all foreign materials from the pipe system so as to restore the hydraulic capacity to within ninety-five percent of the theoretical carrying capacity. Generally, this performance will be considered to be achieved when all loose debris and deposits, and all tree roots exceeding four inches (4") in length have been removed.

Sewer cleaning is considered as the activity common to the preparation required for the televised inspection. Such cleaning involves the removal of all sludge, dirt, sand, rocks, grease, light root growth, and other solid and semi-solid materials with such hydraulic or mechanically powered equipment as balls, scooters, brushes, cutters, and water pressure jetting equipment. Sewer cleaning is classified as either standard grade or heavy grade. The use of standard grade cleaning is expected to be applied to all sewer lengths identified under this project. Standard cleaning shall be three (3) passes or less with the cleaning equipment. One pass is considered cleaning from the starting manhole to the finishing manhole and back to the original starting position. However, in those areas where excessive sediment and debris deposits or extensive root growth is found, which cannot be satisfactorily cleaned by standard grade cleaning methods, then heavy grade cleaning will be applied to the extent authorized by the VILLAGE. The VILLAGE must be consulted and work authorized prior to initiating any heavy grade cleaning operations.

If cleaning of an entire section of sewer cannot be successfully performed from one manhole set-up position, then the equipment shall be reset on the next adjacent manhole and the cleaning again attempted. If the sewer section cannot be satisfactorily cleaned, or the equipment again fails to traverse the problem section, it will be assumed that a major blockage exists. In this instance the cleaning shall be suspended for the identified problem section until other measures can be arranged.

If during the televised inspection of the sewer, portions of the pipe section are found not to have been satisfactorily cleaned, then said portions shall be re-cleaned to the satisfaction of the VILLAGE at no additional cost to the VILLAGE. Exception is made for those sections where heavy cleaning is found to be required following a light cleaning activity.

The CONTRACTOR shall, during cleaning operations, take precautions so as to not damage the manhole structures or pipe sections. Damaged portions of the sewer system, if determined by the VILLAGE to be the result of careless operations, shall be repaired at the expense of the CONTRACTOR. All identified unstable or unsound parts of the sewer system shall be documented and brought to the attention of the VILLAGE.

The cleaning equipment to be used in this operation shall be based upon the specific conditions identified. The equipment shall be capable of removing dirt, sand, grease, rocks, bricks, tree roots, and other deleterious materials and obstructions commonly found in sewer pipe lines. The equipment shall be heavy-duty municipal or industrial grade with a powered unit capable of cleaning in one section, up to 1,200 lineal feet of sewer from a single access point. The jetter

equipment shall have the capability of generating a hydraulic pressure in excess of 1,500 pounds per square inch of pressure. The equipment shall be able to pull brushes, swabs, and other implements and shall also have a distance meter so that the location of the cleaning tools can be determined at all times.

The CONTRACTOR is to remove and dispose of all waste material extracted during the sewer cleaning operation in a proper waste disposal facility. The material developed during the cleaning operation shall be removed at the next downstream manhole. Passing material over extended distances, from manhole section to manhole section, which would cause service line blockages or otherwise deter the operation of the sewer system will not be permitted. The CONTRACTOR shall note the approximate volume and type of materials removed from each cleaned section.

1. Notification of the Public

The CONTRACTOR shall notify all properties affected by the liner installation work at least 48 hours prior to commencement of the work. The CONTRACTOR shall make every effort to maintain sewer service usage throughout the duration of the project.

2. Water Usage

The CONTRACTOR may obtain municipal water in bulk, at no charge, as long as there is not a watering ban in effect, from location(s) approved by the VILLAGE. The contractor shall obtain water from the VILLAGE in accordance with the WATER FOR CONSTRUCTION PURPOSES provision included herein.

3. Line Obstructions

It shall be the responsibility of the CONTRACTOR to clear line obstructions such as solids and roots that will prevent the insertion of CIPP. Line obstructions identified on the pre-bid video (if available) and/or revealed during the pre-installation CCTV inspection such as dropped joints, or a collapsed or crushed pipe that cannot be removed by conventional sewer cleaning and root cutting equipment shall be removed or repaired by the CONTRACTOR. The CONTRACTOR shall make a point repair excavation to uncover and remove or repair the line obstruction. Such excavation shall be approved in writing by the VILLAGE prior to the commencement of the work. Point repairs approved by the VILLAGE shall be paid for in accordance with the appropriate SEWER REMOVAL AND REPLACEMENT pay item and special provision included herein.

4. Pre-liner Installation

Using air pressure, a thin, dry felt tube (pre-liner) shall be inserted into the section of pipe to be lined. The polyurethane layer should be against the host pipe after inversion to prevent resin washout from infiltration. Maintain pressure in pre-liner while inverting the resin impregnated felt tube to prevent the resin impregnated felt tube from inverting over folds in the pre-liner. The pre-liner will remain in place after the CIPP has cured. **Unless otherwise directed by the ENGINEER, the CONTRACTOR may choose not to install a pre-liner.**

The CONTRACTOR shall be responsible to stop any infiltration preventing the proper installation of the CIPP liner per the Manufacturer's installation requirements. Any defects in the pipe liner that are found to be caused by not using a pre-liner shall be replaced at the CONTRACTOR's expense.

5. Flexible Liner Installation

- a. The tube shall be inspected for tears and frayed sections. The tube, in good condition, will be vacuum impregnated with the thermoset resin. The resin will be introduced into the tube creating a slug of resin at the beginning of the tube. A set of calibration rollers will assist the resin slug to move throughout the tube. All air in the tube shall be removed by vacuum allowing the resin to thoroughly impregnate the tube. The point of vacuum shall be no further than 25-feet from the point of initial resin introduction. After vacuum in the tube is established, a vacuum point shall be no further than 75-feet from the leading edge of the resin. The leading edge of the resin slug shall be as near to perpendicular to the longitudinal axis of the tube as possible. All resin shall be contained to ensure no public property or persons are exposed to the liquid resin. A resin impregnated sample (wick), shall be retained by the installer to provide verification of the curing process taking place in the host pipe.

The wet out tube shall be positioned in the pipeline using either inversion or a pull-in method. If pulled into place, a power winch should be utilized and care should be exercised not to damage the tube as a result of pull-in friction. The tube should be pulled-in or inverted through an existing manhole or approved access point and fully extend to the next designated manhole or termination point.

- b. Temperature gauges shall be placed between the tube and the host pipe's invert position to monitor the temperatures during the cure cycle.
- c. Curing shall be accomplished by utilizing hot water under hydrostatic pressure or steam pressure in accordance with the manufacturer's recommended cure schedule.
- d. Third party test results supporting the chemical resistance requirements and structural performance of the liner shall be provided to the VILLAGE before project approval. CIPP samples shall be prepared and physical properties tested in accordance with ASTM F1216 or ASTM F1743, Section 8, using either method proposed. The flexural properties must meet or exceed the values listed in Table 1 of the applicable ASTM. Samples shall be prepared for all CIPP installations. Approximately 20% of all samples, or at least one per week, shall be tested, unless otherwise determined by the Engineer. If the selected samples fail testing, all remaining samples shall be tested. Liners not meeting the design criteria shall be rejected for payment and removed at the CONTRACTOR's expense. Wall thickness of samples shall be determined as described in paragraph 8.1.6 of ASTM F1743. The minimum wall thickness at any point shall not be less than 87½% of the minimum design wall thickness as calculated in section B.3 of this document. Visual inspection of the CIPP shall be in accordance with ASTM F1743, Section 8.6.

- e. Where liner is installed through a manhole uninterrupted, the invert shall be maintained smooth through the manhole, with approximately the bottom half of the liner continuous through the manhole. The invert of the manhole shall be shaped and grouted as necessary to support the liner. The cost of this work shall be included in the CIPP unit price.
- f. A second TV inspection is performed to verify the proper cure of the material, the proper opening of service laterals, and the integrity of the seamless pipe. The VILLAGE will receive a digital format video on a flash or external hard drive documenting the inspection and written report documenting the project. The televising shall be the entire length of sanitary/storm sewer between both manholes regardless of the size of the repair or lining.

Measurement and Payment: Payment shall be made at the unit price per lineal foot for CURED-IN-PLACE PIPE LINER (of the diameter specified) indicated on the Bid Proposal and shall include all labor, materials and equipment including internal cleaning and disposal of debris, internal TV inspection for both before and after conditions, bypass pumping, testing and restoration (4" Topsoil, Class 1A Seeding, and Erosion Control Blanket) necessary to perform the work.

STORM SEWERS, TYPE 2, DUCTILE IRON PIPE 8"

STORM SEWERS, TYPE 1, WATER MAIN QUALITY PIPE, 8"

Description. Work under these items shall be performed according to Section 550 of the Standard Specifications and the current City of Chicago Department of Water Management (DWM) Regulations for Sewer Construction and Stormwater Management and DWM Standard Specifications for Water and Sewer Main Construction, except as herein modified. This item consists of constructing sewers to carry storm, sanitary, or a combination of sanitary and storm flows, as shown on the plans or at locations designated by the Engineer.

This work shall consist of constructing storm sewers at locations designated by the Engineer, including any excavation and disposal, bedding, dewatering, sheeting and/or shoring required to perform the work as specified.

Materials. Materials shall be per the most current DWM Standard Specifications for Water and Sewer Main Construction.

Construction Requirements. Where a storm sewer or drain connection is to be made to a proposed E.S.V.C.P. sewer a manufactured Y or T branch pipe shall be installed in the sewer at this junction.

Where a storm sewer or drain connection is to be made to a proposed R.C.P. sewer a pipe section with a predrilled hole of the proper diameter shall be installed at this junction.

Where a storm sewer or drain connection is made to an existing sewer, a "T" or "Y" saddle shall be installed. The circular opening in the existing storm sewer shall be core drilled to the same size as the external diameter of the proposed sewer or drain connection. The protrusion of the proposed sewer into the existing sewer shall not exceed a maximum of 1 inch. Edge of core holes shall be a minimum of 1.5 feet from the edge of pipe and a minimum distance of 5 feet horizontally between holes. Do not drill holes higher than 10 and 2 o'clock.

All ductile iron pipe shall be encased in 4-mil, cross-laminated, high density polyethylene tubing meeting the requirements of AWWA C105.

Where less than three feet of cover exists, use ductile iron pipe.

QC/QA Requirements. The Contractor shall provide a Manufacturer's written certification that the materials comply with these specifications.

Inspection and Acceptance. Sewer televising requirements shall be as described in the specification for TELEVISION INSPECTION OF SEWER.

Clean all sewers prior to videotaping. The final acceptance of the sewer shall be based on the sewer videotape. All deficiencies exposed on the videotape shall be corrected by the Contractor within 30 calendar days of notification.

All costs incurred by the Contractor to make the required repairs are to be borne solely by the Contractor. Pavement removal, if required, shall be in full panel sections and pavement anchors will be required for pavement restoration. The Contractor is required to re-videotape the sewer to verify

that the deficiencies noted on any previous videotape have been corrected to the satisfaction of the Chicago Department of Sewers. All costs to re-videotape the sewer, regardless of the number of times required, will be borne solely by the Contractor. Every effort is to be made by the Contractor to correct all deficiencies prior to the placement of the final wearing surface. If, in the opinion of the Engineer, the Contractor has delayed in submitting the videotape, the placement of the final wearing surface may be suspended. No time extension will be granted due to this suspension and the Engineer will be sole judge as to any delays. Include location maps, legends and descriptions on all videotape submittals. 2 copies of each submittal are required.

Method of Measurement. This work will be measured for payment in place per foot. When a proposed sewer is to be placed at the same location of an existing sewer, the removal of the existing sewer will not be measured for payment. Televising and inspection of sewers will not be measured separately for payment and is included in the cost of this pay item.

Basis of Payment. This work will be paid for at the contract unit price per foot for STORM SEWERS, TYPE 2, 8 INCH (DUCTILE IRON PIPE) and STORM SEWERS, TYPE 1, WATER MAIN QUALITY PIPE, 8". Excavation in rock will be measured and paid for according to Section 502.

DUCTILE IRON WATER MAIN FITTINGS

Description: This item shall include the furnishing and complete installation of ductile iron fittings as indicated on the contract drawings, or required by constructing this improvement. The unit price bid shall include the fittings, the required jointing materials, and the cost of any cutting. Where fittings are called for on the contract plans, and the engineer directs another fitting to be used, the weight of the actual fitting used shall be the basis of the theoretical weight of the body casting only, as set forth in the material suppliers published weights for ductile fittings. All such fittings furnished shall be compact", mechanical joint, unless otherwise approved by the engineer. All glands furnished shall be MEGA LUGS or TufGrips (Clow) retainer glands as described elsewhere in these specifications.

All ductile iron fittings shall conform in accordance with ANSI/AWWA C153/A21.53 for the mechanical joint, suitable for a maximum working pressure of three hundred fifty pounds (350lbs) per square inch.

Weights of proposed fittings that shall be used on the project shall be included with shop drawings submittals for the project, prior to construction.

Mechanical Joint Bolts: All bolts and nuts used on this project shall be 316 S.S. T- Head bolt and nut and no substitutes will be accepted.

Retainer Glands: Whenever any type of gland for making up a mechanical joint connection is required or specified under this contract, MEGA LUGS or TufGrips (Clow) retainer glands shall be furnished. No additional compensation will be allowed for furnishing and installing MEGA LUGS or TufGrips (Clow) retainer glands. Thrust blocks shall also be required at all mechanical joint fittings in addition to retainer glands.

Method of Measurement and Basis of Payment: This work shall be paid for at the contract unit price per POUND for DUCTILE IRON WATER MAIN FITTINGS, for which the weight of the joint accessories will be included for payment.

CUT AND CAP EXISTING WATER MAIN

Description: This work shall consist of cutting and capping the existing water main to be abandoned. Existing water main to be abandoned in place shall be mechanically capped and the water main that will remain in service shall be plugged.

Construction: The work shall include mechanical fittings, sawcutting and excavation.

Method of Measurement and Basis of Payment: This work shall be paid for at the contract unit price per each for CUT AND CAP EXISTING WATER MAIN, of the size specified.

CONNECTION TO EXISTING WATER MAIN 6"

CONNECTION TO EXISTING WATER MAIN 8"

Description: This work shall consist of connecting proposed water main to existing water main.

Construction: The work shall include mechanical fittings, sawcutting, excavation, thrust blocks and all labor and other materials necessary to complete the connections.

Method of Measurement and 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.

CATCH BASINS AND INLETS (CITY OF CHICAGO)

Effective: July 15, 2009
Revised: August 10, 2023

Description. Work under this item shall be performed as detailed in the plans, standard drawings, work order and/or as directed by the Engineer, and according to Sections 602 and 604 of the IDOT Standard Specifications for Road and Bridge Construction (SSRBC) and the current City of Chicago Department of Water Management Standard Specifications for Water and Sewer Main Construction, except as herein modified.

Materials. Materials shall be according to the following:

- (a) Coarse aggregate for bedding material shall meet a CA 11 gradation in accordance with Article 1004.05 of the SSRBC.
- (b) Fine aggregate for backfilling material shall meet a FA 6 gradation in accordance with Article 1003.04 of the SSRBC.
- (c) City of Chicago standard frame and lid shall be in accordance with the City of Chicago Department of Water Management Standard Specifications for Water and Sewer Main Construction.
- (d) All precast structures shall be from an IDOT approved precast source.

General Requirements. An ADA compliant open lid shall be placed on all catch basins and manholes located within the cross walk or as directed by the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per each for CATCH BASINS, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, OPEN LID (CITY OF CHICAGO) and INLETS, TYPE A, TYPE 1 FRAME, OPEN LID (SPECIAL).

VALVE VAULTS TO BE REMOVED

Description: Where directed by the ENGINEER, this item shall be performed in accordance with applicable provision of Section 605 of the "Standard Specifications for Road and Bridge Construction". The word STRUCTURE shall be understood to mean valve vault.

Construction Requirements: In addition to the requirements of Article 605.03 of the Standard Specifications, the Contractor shall saw cut a square area around the structure to be removed sufficient to remove the structure and construct the replacement structure.

All removed frames and lids shall be salvaged and reused (if possible) as directed by the ENGINEER. Frames and lids shall be stored on site adjacent to the removed structure until the new structure has been installed. If they are to be reused for the new structure, they shall be placed on the structure once installed. If they are not to be reused for the new structure, they shall remain on site until the replacements are delivered to site.

Method of Measurement and Basis of Payment: This work shall be measured and paid for at the contract unit price per each for VALVE VAULTS TO BE REMOVED.

STRUCTURES TO BE ADJUSTED

Effective: October 12, 2022

Revised: April 24, 2024

Description. Work under this item shall be performed as detailed in the plans, standard drawings, work order and/or as directed by the Engineer, and according to Section 602 of the IDOT Standard Specifications for Road and Bridge Construction (SSRBC), except as herein modified. This work shall consist of the adjustment of existing catch basins, manholes, inlets, valve vaults, water meter vaults, water valve vaults, water valve basins, and handhole.

Included in this work will be all those existing catch basins, manholes, inlets, valve vaults, water valve vaults, water meter vaults, water valve basins and handholes or other structures which are to be adjusted where two feet or less of masonry will be either added, removed or rebuilt to bring the specified casting to the finished grade of the proposed improvement.

Materials. High Early Strength (HES) concrete shall conform to the requirements of a class SI concrete, except that the use of Type III cement shall not be permitted, and an IDOT/CDOT approved PP-1 patching or high early SI mixture shall be used, final acceptance for use is at the discretion of the Engineer. The class SI minimum strength requirement of 3,500 psi shall be achieved within 3 days.

The use of HDPE plastic adjusting rings (Article 602.02 Note 1) is not allowed.

The use of Recycled Rubber Adjusting rings (Article 602.02 (m)) is not allowed.

With approval of the Engineer the Contractor may use pre-cast adjusting rings. Adjustment bricks, rings and castings are to be set in a full Type M mortar bed. Shimming of the frame with wood and stones will not be allowed. Use of partial bricks will not be allowed. Bricks must be laid in full header courses only.

Bricks shall meet the requirements of Sections 1041 and 1042 of the SSRBC. If in any load of brick more than ten percent do not meet the satisfaction of the Engineer, the whole load will be rejected. If less than ten percent do not meet the satisfaction of the Engineer, the brick may be accepted, provided the Contractor will, at his expense, cut out all inferior bricks, and remove them from the site of the work at once.

General Requirements. The existing pavement shall be saw-cut full depth prior to removal and adjustment, see Standard Details. Saw-cutting will not be paid for separately but considered included in the cost of these items.

Existing frames and lids that are obsolete or damaged must be replaced when ordered by the Engineer in writing, except that existing frames and lids damaged by the Contractor's operations during construction must be replaced by the Contractor at no additional cost to the City.

Removal and patching of pavement around a structure will be included in the cost of the adjustment or reconstruction of that structure, and no additional payment will be made.

Prior to patching around the structure, the Contractor shall install expansion tie anchors, see **Standard Details**. Expansion tie anchors will not be paid for separately but included in the cost of this item.

Pavement patching with hot-mix asphalt will not be allowed. Patching around the structure must be in accordance with the applicable portions of Section 442 of the SSRBC.

Under no circumstance will an adjustment not be completed in the same day as it is started. Under no circumstance will any debris be left in the street overnight. Occurrence under these circumstances will be considered a traffic control deficiency and the Contractor shall be charged.

The Contractor shall coordinate their schedule with other utility companies. The Contractor shall stage adjustment work to prevent traffic congestion, lane closures and lane confusion due to barricades placed in closed proximity of each structure.

The Contractor shall maintain one lane of traffic in each direction at all times. The Contractor shall provide two (2) flaggers per Article 701.13 of the SSRBC to maintain traffic control when structure adjustment is performed on roadways open to traffic. The Contractor shall adhere to rush hour traffic restrictions.

Prior to starting construction, an inspection of all the existing structures, shall be made by the Engineer and the Contractor to determine the amount of existing debris in these structures.

Failure to comply with these requirements will be considered a traffic control deficiency and the contractor shall be charged.

Method of Measurement. This work will be measured on a per each basis which will include up to the first two (2) feet of required masonry work.

Basis of Payment. This work will be paid for at the contract unit price per each for CATCH BASINS TO BE ADJUSTED, MANHOLES TO BE ADJUSTED, INLETS TO BE ADJUSTED, VALVE VAULTS TO BE ADJUSTED, WATER VALVE VAULTS TO BE ADJUSTED, WATER VALVE BASINS TO BE ADJUSTED, WATER METER VAULTS TO BE ADJUSTED, HANDHOLES TO BE ADJUSTED, MANHOLES TO BE ADJUSTED WITH frame and lid of the type specified, INLETS TO BE ADJUSTED WITH frame and lid of the type specified, CATCH BASINS TO BE ADJUSTED WITH frame and lid of the type specified, and HANDHOLES TO BE ADJUSTED WITH frame and lid of the type specified, as well as "City of Chicago" pay items..

COMBINATION CONCRETE CURB AND GUTTER, TYPE B-V.12 (CDOT)

Effective: December 1, 2008

Revised: February 22, 2024

Description. Work under this item shall be performed as detailed in the plans, standard drawings, work order and/or as directed by the Engineer, and according to Section 606 of the IDOT Standard Specifications for Road and Bridge Construction (SSRBC), IDOT Highway Standards, and to the City of Chicago Department of Transportation Rules and Regulations for Construction in the Public Way, except as herein modified.

Materials. Paint shall be according to Section 780 of the SSRBC.

Equipment. Equipment for painting the curb adjacent to fire hydrants shall be according to Section 780 of the SSRBC.

General Requirements. The Contractor is responsible for the correct layout of the proposed curb. In coordination with any required fire hydrant relocation, prior to installation of the curb and gutter, and this work is included in the cost of COMBINATION CONCRETE CURB AND GUTTER, TYPE B-V.12 work specified.

In accordance with Section 780 of the SSRBC, all curb installations adjacent to fire hydrants must be painted 'safety yellow' for 15 feet on each side of the fire hydrant except where the 15-foot dimension intersects a crosswalk, driveway or similar feature, and this work is included in the cost of COMBINATION CONCRETE CURB AND GUTTER, TYPE B-V.12. Paint does not require glass beads and should be painted to have neat straight edges along back of curb and vertically up the curb face.

Method of Measurement. COMBINATION CONCRETE CURB AND GUTTER, TYPE B-V.12 will be measured for payment per foot.

Basis of Payment. This work will be paid at the contract unit price per foot for COMBINATION CONCRETE CURB AND GUTTER, TYPE B-V.12.

TRAFFIC CONTROL PLAN

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

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

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

List of Highway Standards:

701006-05	OFF-RD OPERATIONS, 2L, 2W, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
701101-05	OFF-RD OPERATIONS, MULTILANE, 15' (4.5 m) TO 24" (600 mm) FORM PAVEMENT EDGE
701301-04	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701501-06	URBAN LANE CLOSURE 2L, 2W, UNDIVIDED
701502-09	URBAN LANE CLOSURE, 2L, 2W, WITH BIDIRECTIONAL LEFT TURN LANE
701602-10	URBAN LANE CLOSURE MULTILANE, 2W WITH BIDIRECTIONAL LEFT TURN LANE
701701-10	URBAN LANE CLOSURE, MULTILANE INTERSECTION
701801-06	SIDEWALK, CORNER OR CROSSWALK CLOSURE
701901-10	TRAFFIC CONTROL DEVICES

Details:

TC-22	ARTERIAL ROAD INFORMATION SIGNING
TC-26	DRIVEWAY ENTRANCE SIGNING

Special Provisions:

X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)
X7200061	TEMPORARY INFORMATION SIGNING
BDE	VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE);
BDE	WORK ZONE TRAFFIC CONTROL DEVICES (BDE);

The work shall be accomplished such that the streets will be left open to local traffic at the end of each working day.

It will also be necessary for the Contractor to provide advance written notice to residents, police, fire, school districts and trash haulers when access to any street and/or driveway will be temporarily closed or limited. At least one lane access shall be provided to all commercial property at all times. Notices shall be delivered 24 hours prior to any temporary closures and shall provide a re-entrance date to the residents. Notices shall be reviewed and approved by the Engineer prior to issuance.

During construction, the Contractor shall provide lighted barricades, flagmen and other temporary protection where necessary for public safety at all times. Should traffic protection be determined to be inadequate by the Engineer, the Village will take the necessary actions to protect the public, and the cost of this work will be charged to the Contractor.

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

Basis of Payment. This work will be considered included in the contract lump sum price for TRAFFIC CONTROL AND PROTECTION, (SPECIAL).

TEMPORARY INFORMATION SIGNING (D-1)

Effective: November 13, 1996

Revised: January 2, 2007

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

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

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

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

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

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

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

GENERAL CONSTRUCTION REQUIREMENTS

Installation.

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

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

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

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

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

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

Basis of Payment. This work shall be paid for at the contract unit price per square foot for TEMPORARY INFORMATION SIGNING.

ELECTRIC SERVICE CONNECTION

Effective: March 9, 2024

Description. This work shall consist of providing a service connection from City cable to a Commonwealth Edison secondary cable. For an aerial service, this will be on a wood pole. For an underground service, this will be in a Commonwealth Edison manhole or ground mounted transformer enclosure.

General Requirements. This work shall consist of splicing or terminating City service cable to a Commonwealth Edison secondary cable, as directed by the Engineer. The contractor must obtain permission from Edison for the service at the required location. The contractor will inform Edison of the load required. Edison will make the connections unless Edison gives the contractor permission to make the connections. All costs associated with the connection will be borne by the contractor.

Basis of Payment. This work will be paid for at the contract unit price per each for ELECTRIC SERVICE CONNECTION.

HANDHOLES

Effective: January 01, 2002
Revised: November 1, 2023
814.01TS

Description.

Add the following to Section 814 of the Standard Specifications:

All conduits shall enter the handhole at a depth of 30 in. (762 mm) except for the conduits for detector loops when the handhole is less than 5 ft (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 epoxy coated and must meet the specifications set forth in 1006.10. Hooks shall be a minimum of 5/8 in. (16 mm) diameter with 90-degree bend and extend into the handhole at least 6 in. (152 mm). Hooks shall be placed a minimum of 12 in. (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 IDOT 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."

Revise Article 814.03(c) of the Standard Specifications to read:

"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 in. (13 mm) thickness shall be placed between the handhole and the sidewalk."

Add the following to Section 814 of the Standard Specifications:

Cast-In-Place Handholes.

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

For grounding purposes, the handhole frame shall have provisions for a 7/16 in. (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 1 ft (305mm).

Precast Round Handholes.

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

For grounding purposes, the handhole frame shall have provisions for a 7/16 in. (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 in. (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 in. (152 mm).

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

LUMINAIRE, LED (SPECIAL)

Effective: March 9, 2024
Revised: January 22, 2025

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: 1351, 1608, 1630, 1631, 1632
Standard Drawings: None Applicable

This item shall consist of furnishing and installing an LED street light luminaire with external smart node of the output noted on the plans.

Materials. luminaires shall meet the requirements of Material Specification 1630, 1631, or 1632. Smart lighting nodes shall meet the requirements of Material Specification 1608. Pole wire shall meet the requirements of Material Specification 1351.

Construction Requirements. This work shall meet the applicable requirements of Section 801 and Article 821.03 of the IDOT Standard Specifications for Road and Bridge Construction. Each luminaire shall be installed per the manufacturer's instructions. Luminaires shall be securely attached to the end of a two-inch diameter pipe arm and leveled to provide proper illumination.

Pole wiring shall be connected to the luminaire terminal block, or quick disconnect, in accordance with the Material Specifications and the manufacturer's recommendation. Pole wires shall be spliced to the field wires at the base of the pole using splicing methods approved by the Engineer, and as detailed under related special provisions. The pole wires shall be of sufficient length to connect the luminaire to the field wires at the base of the pole.

Basis of Payment. This work will be paid for at the contract unit price per each for LUMINAIRE, LED, SPECIAL, of the type and wattage specified on the plans.

LIGHTING UNIT COMPLETE (SPECIAL)

Description: This item shall consist of furnishing and installing a new street lighting assembly complete on a concrete foundation at the locations shown on the contract drawings.

Construction Requirements: All work shall be installed in accordance with Sections 821, 830, and 838 of the Standard Specifications, contract plan drawings, NEC, and local ordinances.

Materials: The contractor shall furnish and install new light pole (complete including all hardware and accessories), pole, clamshell base, breakaway couplings, luminaire arms, luminaires, GFI receptacle, wiring, fuse kit(s), and fusing as shown on the drawings.

All materials shall be in accordance with the contract plan drawings and Sections 1065, 1066, 1067, 1069, and 1070 of the Standard Specifications.

Measurement and Payment: The work shall be paid for at the contract unit price Each for LIGHTING UNIT COMPLETE (SPECIAL), which price shall be payment in full for all material, labor and any other items required to complete the work.

LIGHTING CONTROLLER (SPECIAL)

Effective: March 9, 2024

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: 1375, 1428, 1606
Standard Drawings: 736, 785, 876, 983, 984

This work shall consist of furnishing and installing a street lighting controller cabinet with ballast housing base at the locations shown in the plans.

The controller provided shall be configured for the voltage and phasing noted on the plans.

Materials. The controller cabinet and components shall meet the requirements of Material Specification 1606. Circuit breakers shall meet the requirements of Material Specification 1428. The ballast housing base shall meet the requirements of Material Specification 1375. Controller components shall be laid out per Drawing 984. The controller shall be wired as shown on Drawing 983. Branch circuit breakers must be as indicated on the plans. The cabinet shall be grounded with a bare copper wire, #4 AWG between the ground lug in the cabinet to the grounding clamp on the ground rod.

General Requirements. The cabinet shall be installed on a ballast housing base secured to a concrete foundation as shown on Drawing 876. The foundation, including anchor rods, washers, and nuts will be paid for separately.

The installation of feeder cables and branch circuit cables shall be performed in a neat and workmanlike manner with all cable trained around the cabinet, secured to the proper terminals and identified either by tagging of the cables, or by identification of the branch breakers, all as part of the controller installation and not as a separate pay item. The lighting circuit shall be placed in operation as soon as practical.

The Contractor shall be responsible for all electrical service charges until the circuits are accepted by the Chicago Department of Transportation Division of Electrical Operations.

Basis of Payment. This work will be paid for at the contract unit price per each for LIGHTING CONTROLLER SPECIAL, of the phase, voltage, and amperage specified.

LIGHTING CONTROLLER FOUNDATION

Effective: March 17, 2024

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: 1465, 1467, 1533
Standard Drawings: 880

This work shall consist of constructing a lighting controller foundation.

Materials. Concrete shall be Portland cement concrete, Class SI , meeting the requirements of Section 1020 of the IDOT Standard Specifications for Road and Bridge Construction (SSRBC). Ground rods shall meet the requirements of Material Specification 1465. Conduit shall be PVC meeting the requirements of Material Specification 1533. Anchor rods shall meet the applicable requirements of Material Specification 1467.

Construction Requirements. The Contractor shall install a concrete foundation for a base mounted lighting controller cabinet, as shown on City of Chicago Drawing Number 880. Work under this item shall be performed in accordance with Section 800 of the SSRBC.

The foundation shall have a minimum depth of at least forty inches (40") below grade and shall have large radius conduit elbows in quantity, size and type shown. The elbow ends above ground shall be capped with standard conduit bushings. The Contractor shall furnish anchor bolts, hardware, conduit elbows, and all other material shown on the foundation construction drawing.

All excavation and restoration of parkway shall be considered as part of this item. If the foundation is in sidewalk, an expansion joint shall be provided between the sidewalk and the foundation.

Basis of Payment. Lighting controller foundations will be paid for at the contract unit price per each for LIGHTING CONTROLLER FOUNDATION.

MAINTENANCE OF STREET LIGHTING SYSTEM (CITY OF CHICAGO)

Effective: February 27, 2024

Revised: January 22, 2025

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: 1351, 1428, 1447, 1630, 1631, 1632, 1640

Standard Drawings: None Applicable

This work shall consist of furnishing all labor, equipment, and incidental materials for maintaining existing street lighting systems owned by the Chicago Department of Transportation (CDOT) until the proposed equipment is installed, energized, tested, and accepted for operation by CDOT.

The work shall include any necessary temporary equipment to maintain existing illumination. The location and protection of equipment necessary to comply with these requirements shall be subject to the approval of the Engineer. The Engineer will be the sole judge of satisfying existing illumination levels.

Any temporary wire or cable required to be installed overhead between existing poles or temporary devices shall be furnished, installed, terminated, and maintained in service until the proposed lighting equipment is installed, tested, and accepted for operation by the Engineer.

Materials. Materials shall be according to the following CDOT Division of Electrical Operations (DEO) Specifications and applicable Articles of Section 1000 of the IDOT Standard Specifications for Road and Bridge Construction (SSRBC):

<u>Item</u>	<u>Requirement</u>
(a) Aerial Cable Assembly	Material Specification 1640
(b) Cable Splicing and Termination	SSRBC Article 1066.06
(c) Luminaires	Material Specifications 1630, 1631, 1632
(d) Metal Light Poles	Material Specification 1447
(e) Pole Wire	Material Specification 1351
(f) Thermal Magnetic Circuit Breaker	Material Specification 1428
(g) Wood Poles	SSRBC Article 1069.04

General Requirements. General requirements shall be in accordance with Section 801 of the Standard Specifications, and in accordance with Division of Electrical Operations Standards and the City of Chicago Electrical Code, except as herein modified.

Effective the day the Contractor starts work (including non-electrical work), the Contractor shall maintain the existing lighting equipment located within the project limits as it then exists. The

Contractor shall also maintain any street lighting equipment outside of the project limits but connected to a controller situated within the project limits.

The Scope of Work shall include the assumption of responsibility for the continuing operation of existing, temporary, or other lighting-systems affected by the work as may be specified elsewhere herein. Existing lighting systems, when depicted on the Plans, are intended only to indicate the general nature of the systems involved and shall not be construed as an exact representation of the field conditions. It remains the Contractor's responsibility to visit the site to confirm and ascertain the exact nature of systems to be maintained.

Preconstruction Inspection. Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall initiate a request for preconstruction inspection, to be held in the presence of the Engineer and a representative of the Chicago Department of Transportation Division of Electrical Operations. The request for the maintenance preconstruction shall be made no less than seven (7) calendar days prior to the desired inspection date. The maintenance preconstruction inspection shall:

- Establish details of any formal transfers of maintenance responsibility required for the construction period.
- Establish approximate locations of known lighting and/or traffic control systems, which may be affected by the work.
- Establish the condition of lighting and/or traffic control systems which may be affected by the Work.

Lighting System Maintenance Operations. The Contractor's responsibility shall include all applicable responsibilities of the City of Chicago Division of Electrical Operations. These responsibilities shall include the maintenance of lighting units, cable runs, and lighting controls. In the case of a pole knockdown or damage caused by normal vehicular traffic, the Contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service.

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

INCIDENT OR PROBLEM	SERVICE REPOSE TIME	SERVICE RESTORATION TIME	PERMANENT REPAIR TIME
Control cabinet out	1 hour	4 hours	7 calendar days
Hanging mast arm	1 hour to clear	n/a	7 calendar days
Motorist caused damage or leaning	1 hour to clear	4 hours	7 calendar days

light pole 10 degrees or more			
Circuit out – reset breaker	1 hour	2 hours	n/a
Circuit out – cable trouble	1 hour	24 hours	21 calendar days
Outage of 3 or more successive luminaires	1 hour	4 hours	n/a

Service Response Time – amount of time from the initial notification to the Contractor until a patrolman physically arrives at the location.

Service Restoration Time – amount of time from the initial notification to the Contractor until the time the system is fully operational again. (In case of motorist caused damage the undamaged portions of the system are operational.)

Permanent Repair Time – amount of time from initial notification to the Contractor until the time permanent repairs are made if the Contractor was required to make temporary repairs to meet service restoration requirement.

If at any time the Contractor fails to perform all work as specified herein to keep the traffic signal and street lighting in proper operating condition or if the Commissioner cannot contact the Contractor's designated personnel within one (1) hour, the City will perform the maintenance work required. The Contractor will be charged the total cost of the work with a 500% mark-up. The cost of such work will be deducted from the amount due to the Contractor.

Installation Requirements for Temporary Lighting Units. The Contractor shall furnish and install a temporary lighting unit to replace any existing lighting unit that is removed prior to the new lighting system being operational.

Temporary lighting unit shall include pole, mast arm, luminaire, and temporary wiring connections. The Contractor shall furnish and install temporary lighting units and all associated electrical equipment to ensure compliance with the applicable codes, standards, and Specifications.

The Contractor shall coordinate temporary lighting with the sequence of construction and maintenance of traffic for this Project.

The wiring on the pole shall consist of aerial electric cables and waterproof splices at each light pole.

All equipment furnished shall be functional and shall be maintained. The Contractor shall own all the temporary lighting equipment furnished and installed.

The Contractor shall disconnect and remove temporary lighting and all associated electrical equipment upon energizing and acceptance of the permanent lighting system.

Temporary Wiring. The Contractor shall furnish and install aerial electric cable meeting the requirements of Material Specification 1640.

Temporary Poles. Temporary lighting poles may be used steel or wood poles in accordance with Article 1069.04 of the Standard Specifications for wood poles and Material Specification 1319 for embedded steel poles.

Temporary Luminaires. Each luminaire shall be a LED unit that meets the requirements of Material Specification 1609. Each luminaire shall be mast arm or bracket arm mounted on the top of the pole. Existing removed luminaires may be used as temporary luminaires.

Installation. Location of cables and fixtures for temporary lighting shall be adjusted and supported to accommodate field conditions encountered, including any potential interferences with other construction or equipment to be installed.

The Contractor shall determine the exact route and location of each temporary lighting fixture and associated wiring, prior to installation.

Temporary lighting shall be installed to permit removal (without damage to other parts) of parts requiring periodic replacement or maintenance.

Temporary wiring/lighting shall be removed immediately upon acceptance of permanent lighting.

QC/QA Requirements. The Contractor shall provide a Manufacturer's written certification that the materials comply with these specifications.

Method of Measurement. MAINTENANCE OF STREET LIGHTING SYSTEM (CITY OF CHICAGO) will not be measured for payment but will be paid on a lump sum basis.

Basis of Payment. This work will be paid at the contract lump sum price for MAINTENANCE OF STREET LIGHTING SYSTEM (CITY OF CHICAGO).

REMOVE EXISTING LIGHTING SYSTEM

Effective: March 9, 2024

Description. This work shall consist of removing all obsolete street lighting equipment at various locations shown on the plans.

General Requirements. Street lighting poles (anchor base or embedded), ballast housing bases, mast arms, luminaires, controllers, secondary racks, cable and all related equipment shall be removed as indicated on the plans. Embedded poles shall be removed by means other than burning where possible. Embedded CTA poles shall be burned off at a minimum of eighteen inches below ground level.

All equipment, with the exception of cable, shall remain the property of the City of Chicago. The Contractor shall deliver the equipment to the Division of Electrical Operations facility at 2451 South Ashland Avenue. Cable shall become the property of the Contractor and be disposed of outside the right-of-way. Twenty-four hours advance notice shall be provided before delivery. Street lighting cable shall be removed as indicated on the plans and become the property of the Contractor to be disposed of by him, outside the right of way, at his sole expense.

The Contractor shall provide three (3) copies of a list of equipment that is to remain the property of the City, including model and serial numbers where applicable. The contractor shall also provide a copy of the contract plan or special provisions showing the quantities and type of equipment. The Contractor shall be responsible for the condition of the street lighting equipment from the time of removal until the acceptance of a receipt drawn by the City indicating that the items have been returned.

Basis of Payment. This work will be paid for at the contract lump sum price for REMOVE EXISTING LIGHTING SYSTEM at the various locations shown on the plans. This price will be payment in full for removing the equipment and disposing of it as required. The salvage value of the cable retained by the Contractor must be reflected in this contract lump sum price. Removal of manholes, foundations, and conduit will not be part of this item.

ILLUMINATED SIGN (SPECIAL)

Description.

This work shall consist of furnishing and installing a LED internally illuminated sign with cabling as shown on the RRFB plans with the MUTCD R1-9a sign. Per the MUTCD, the sign shall be 90 inches by 24 inches.

Materials.

The illuminated street name sign shall be as follows.

(a) Description.

The LEDs shall be white in color. The LED internally illuminated sign shall display "STOP FOR PEDESTRIANS IN CROSSWALK" clearly and legibly in the daylight hours without being energized and at night when energized. Type ZZ reflective sheeting sign faces with the sign acrylic panels which shall be affixed to the interior of the sign enclosure. Sheeting material shall be of one continuous piece. Paneling shall not be allowed. Hinged door(s) shall be provided for easy access to perform general cleaning and maintenance operations. Illumination shall occur with LED Light Engine as specified.

(b) Environmental Requirements.

The LED lamp shall be rated for use in the ambient operating temperature range of -40 to +50°C (-40 to +122°F) for storage in the ambient temperature range of -40 to +75°C (-40 to +167°F).

(c) General Construction.

1. The LED components, power supply, and wiring harness shall be arranged as to allow for maintenance, up to and including the replacement of all three components. The LED Light Engine shall be mounted in the top and/or bottom of the sign housing and no components of the light source shall sit between the sign faces.
2. The assembly and manufacturing processes of the LED Light Engine shall be designed to ensure that all LED and electronic components are adequately supported to withstand mechanical shocks and vibrations in compliance with the specifications of the ANSI C136.31-2001 standards.

(d) Mechanical Construction.

1. The sign shall be constructed using a weatherproof, aluminum housing consisting of an extruded aluminum with the maximum sign dimensions of 30" in height, 96" in length, 10.75" in depth (including the drip edge) and shall not weight more than 110 pounds. All housing corners are continuous TIG (Tungsten Inert Gas) welded to provide a weatherproof seal.
2. The sign doors shall be continuous TIG welded along the two corners with the other two screwed together to make one side of the door removable for installation of the sign face. The door is fastened to the housing on the bottom by a full length stainless steel hinge. The sign shall also be fabricated in a way to ensure that no components fall out while a technician is opening or working inside the sign enclosure. The door shall be held secure onto a 1" wide by 5/32" thick neoprene gasket by an appropriate number of quarter-turn fasteners to form a watertight seal between the door and the housing.

3. The sign face shall be constructed of .125" white translucent polycarbonate or acrylic. Sign legend shall be according to MUTCD.
4. All fasteners and hardware shall be corrosion resistant stainless steel. No special tools shall be required for routine maintenance.
5. All wiring shall be secured by insulated wire compression nuts or barrier type terminal blocks.
6. A wire entrance junction box shall be supplied with the sign assembly. The box may be supplied mounted to the exterior or interior of the sign and shall provide a weather tight seal.
7. A photoelectric switch shall be mounted inside control cabinet to control lighting functions for day and night display. Each sign shall be individually fused.
8. Brackets and Mounting: LED internally illuminated signs will be factory drilled to accommodate mast arm two-point support assembly mounting brackets unless indicated otherwise in the plans. A 72" stainless steel safety cable shall be included and installed with each mounting bracket.

(e) Electrical.

1. Photocell shall be rated 105-305V, turn on at 1.5 fcs. with a 3-5 second delay. A manufacturer's warranty of six (6) years shall be provided. Power consumption shall be no greater than 1 watt at 120V.
2. The LED Light Engine shall operate from a 60 +/- 3 cycle AC line power over a voltage range of 80 to 135 Vac rms. Fluctuations in line voltage over the range of 80 to 135 Vac shall not affect luminous intensity by more than +/- 10%.
3. Total harmonic distortion induced into the AC power line by the LED Light Engine, operated at a nominal operating voltage and at a temperature of +25°C (+77°F), shall not exceed 20%.
4. The LED Light Engine shall cycled ON and OFF with a photocell as shown on the detail sheet and shall not exceed 120 Watts. The signs shall be installed such that they are not energized when traffic signals are powered by an alternate energy source such as a generator or uninterruptable power supply (UPS).

(f) Photometric Requirements.

1. The entire surface of the sign panel shall be evenly illuminated. The average maintained luminous intensity measured across the letters, operating under the conditions defined in Environmental Requirements and Wattage Sections shall be of a minimum value of 100 cd/m².
2. The manufacturer shall make available independent laboratory test results to verify compliance to Voltage Range and Luminous Intensity Distribution Sections.
3. LED shall have a color temperature of 5200k nominal, CRI of 80 with a life expectancy of 75,000 hrs.

(g) Quality Assurance.

The LED Light Engine shall be manufactured in accordance with a vendor quality assurance (QA) program. The production QA shall include statistically controlled routine tests to ensure minimum

performance levels of the LED Light Engine build to meet this specification. QA process and test result documentations shall be kept on file for a minimum period of seven (7) years. The LED Light Engine that does not satisfy the production QA testing performance requirements shall not be labeled, advertised, or sold as conforming to these specifications. Each LED Light Engine shall be identified by a manufacturer's serial number for warranty purposes. LED Light Engines shall be replaced or repaired if they fail to function as intended due to workmanship or material defects within the first sixty (60) months from the date of acceptance. LED Light Engines that exhibit luminous intensities less than the minimum value specified in Photometric Section within the first thirty-six (36) months from the date of acceptance shall be replaced or repaired.

Installation.

The sign shall be located on a steel traffic signal mast arm at a height of between 16 to 18-feet above traveled pavement. Mounting hardware shall be from an approved vendor, utilizing stainless steel components.

Basis of Payment.

This work will be paid for at the contract unit price each for ILLUMINATED SIGN (SPECIAL), of the length as specified by the MUTCD (90 inches by 24 inches) which shall be payment in full for furnishing and installing the LED internally illuminated sign, complete with cabling, circuitry and mounting hardware including photo cell, circuit breaker, fusing, relay, connections and cabling as shown on the plans for proper operation and installation.

PLANTER CURB

Description: This item shall consist of furnishing all labor, materials, tools and equipment required to construct cast-in-place concrete curb curbs as indicated on the drawings in accordance with the drawings and as herein specified. In addition to the concrete, the work shall include, but is not limited to, the furnishing and installation of all; joints, preformed expansion joint filler, dowel bars, necessary reinforcement, subgrade and compacted aggregate subbase preparation, and other appurtenant items required for construction of cast-in-place concrete curbs. Except as modified herein, the work shall be done in accordance with applicable articles of Section 606 of the Standard Specifications at locations as shown on the plans or as directed by the Engineer.

General Requirements: Product: Membrane curing compound shall be approved by the Engineer. Technical information shall be submitted no less than two weeks before application.

Execution: Additional granular subbase material, shall be placed below all curbs/mounds when directed by the Engineer.

To provide a straight edge to the curb, face boards, or an equivalent method will be used. Radius plates will be used at corners. Backfilling behind the curb with suitable material shall be placed immediately after the concrete pour. All additional debris shall be removed from the project in preparation for topsoil placement.

Method of Measurement. This work will be measured for payment in feet for CONCRETE PLANTER CURB of the type specified along the front face at ground interface.

Basis of Payment. This work will be paid for at the contract unit price per foot for CONCRETE PLANTER CURB of the type specified.

MODULAR CONCRETE PAVERS (SPECIAL)

Description. Contractor shall provide all equipment and materials, and do all work necessary to construct the unit paving as indicated on the Drawings and as specified. Pavers shall be tested in accordance with Article 1041 from the IDOT Standard Specifications for Road and Bridge Construction. Any required testing not covered by Article 1041 shall be provided by the supplier.

General Requirements. Drawings and general provisions of Contract, including General and Supplementary Conditions and all other Divisions of the Project Manual, apply to this Section.

Quality Assurance. Except as modified herein, the work shall be in accordance with the applicable portions of the Standard Specifications.

Submittals: The contractor shall submit the following for approval of the Engineer:

- F. Manufacturer's Literature: Materials descriptive literature, installation instructions, and paver color selection chart.
- G. Test Reports: Three (3) copies, showing compliance with specified ASTM requirements.
- H. Shop Drawings: Layout drawings of each paved area showing the pattern of pavers, indicate pavers requiring cutting, indicate setting bed methods in each area, drainage patterns and drains. Drawings shall also include details of setting beds, tie bars, and note all materials and their thickness.
- I. Mockup. Provide mockup of each layout pattern (including polymeric sand), with all paver colors represented in each mockup. If pattern abuts another pattern, mockup shall span both patterns. Contractor shall submit to the Engineer paver samples indicating full color range of all PAVER ON SLAB in the specified colors and patterns.
- J. Contractor shall submit to the Engineer a minimum of 25 SF of unit pavers for approval. Submit paver samples indicating full color range of all PAVER ON SLAB in the specified colors and patterns.

Delivery, Storage, and Handling: Deliver and handle pavers in such a manner as to prevent damage. Units shall be stored above ground on blocking. Blocking shall be clean and nonstaining. All damaged or otherwise unsuitable material shall be immediately removed from the job site.

Access to Businesses and Homes. During the installation of the unit pavers and base Contractor shall keep driveways and entrances serving the businesses and homes clear and available to the Owner and the business' employees at all times. Customer access shall be maintained during normal business hours. Contractor is responsible for providing temporary structures such as wooden bridges, ramps, or walkways as required to provide the public safe, secure, and recognizable access ways to businesses during construction.

Pavers:

A. Pavers shall be:

- E. Model: As shown in the plans
- F. Color: As shown in the plans
- G. Concrete Pavers shall meet the minimum material and physical properties set forth in ASTM C 936, Standard Specification for Concrete Paving Units.

- H. Concrete Pavers shall conform to severe freeze-thaw test requirements set forth in ASTM C 1645-06 on sampling and testing interlocking concrete paving units.
- I. Pigment in concrete pavers shall conform to ASTM C 979. ACI Report No. 212.3R provides guidance on the use of pigments.
- J. Pavers shall be installed as indicated on drawings.

Bituminous Setting Bed Components:

- A. Asphalt Cement: Shall conform to ASTM D3381 with a viscosity grade of A.C. 10 or A.C. 20.
- B. Aggregates: Clean, hard sand with durable particles and free from adherent coating, lumps of clay, alkali salts, and organic matter. Sand shall be uniformly graded from coarse to fine with all passing the No. 4 sieve and shall meet screen analysis test, ASTM C136.
- C. Mix Ratios: 7 percent asphalt (by weight), 93 percent aggregates (by weight). Each ton shall be apportioned by weight in the approximate ratio of 145 pounds asphalt cement to 1,855 pounds aggregate.
- D. Mix Requirements: Bituminous setting bed shall be plant mixed and heated to approximately 300°F.
- E. Contractor shall determine exact proportions to produce the appropriate mixture for construction of the bituminous setting bed to meet construction requirements.
- F. Setting Bed Primer: Shall conform to ASTM D 2028 - Standard Specification for Cutback Asphalt (Rapid-Curing Type).

Neoprene Tack Coat Components:

- A. Mastic (asphalt adhesive):
 - Solids (base): 75 percent \pm 1 percent.
 - Pounds/gallon: 8-8.5 pounds/gallon
 - Solvent: Varsol (over 100° F. flash)
- B. Solids (base): 2 percent Neoprene.
 - 2 percent Neoprene.
 - 10 percent Fiber.
 - 88 percent Asphalt.
 - Melting Point: ASTM D 36, 200°F. minimum.
 - Penetration: 77 ° F 100 gram load,
5-second (.1 mm) 23-27.
 - Ductility: ASTM D 113 at 25°C., \pm 0.5°C (77°F \pm 0.9°F)
5 cm per minute (\pm 5%)

Paver Joint Material. Polymeric sand as recommended by paver manufacturer and approved by Engineer. See plans for color.

Portland Cement Concrete Underlayment. The Portland Cement Concrete Underlayment with 2" drainage weep holes as indicated in the plans shall be filled with pea gravels and covered with filter fabric. The tie bars shall be in accordance with Standard Specification Section 282, 424, 442, Article 1004.01, and as shown in the plans.

General.

- A. All pavers shall be installed per the respective manufacturer's recommendations.
- B. No paver setting work shall be performed when the underlayment has free moisture, ice, or snow, or when the underlayment is frozen.

- C. Concrete underlayment shall be sound, clean, and free from debris and materials or substances which will hinder the bond of the setting bed. The top surface of concrete underlayment slab shall not vary more than one quarter (1/4) inch of its proposed elevation.
- D. No bituminous setting bed work shall be performed when the ambient temperature is below 40°F. or at 40°F. and falling, or at any time when the setting bed stiffens before paver units are installed.

Paver Cutting.

- A. To reduce dust during paver installation, unit pavers shall only be cut using wet saws. No dry cutting permitted.
- B. Cut pavers shall be placed in areas shown on the details in the plans. "L" shaped pavers shall be avoided where possible.
- C. Pavers shall be cut radially when joints between pavers on curves exceed 1/8 inch.
- D. Radial cut pavers shall be created by trimming both sides of paver.
- E. Pavers shall not be trimmed less than 2" wide. Placed pavers shall not be less than 60% of original size.

Bituminous Setting Bed Preparation.

- A. Place 3/4-inch deep control bars in parallel directly over base to be used as guides for striking board. Use wood shims under control bars to set proper grade.
- C. Place hot (250°F+) bituminous setting bed material between control bars and strike with striking board to create a smooth, firm, and even setting bed. Additional bituminous material may be necessary to achieve consistent quality setting bed.
- D. After completion of first setting bed panel, advance first control bar and wood shims to next position to prepare next panel. Contractor shall carefully fill depressions that remain between panels.
- E. Repeat procedure for successive setting bed panels. No wood shims or control bars shall be allowed to remain in the bituminous setting bed.
- F. Roll hot setting bed with a power roller (not over one (1) ton in weight) to a nominal depth of 3/4 inches. This thickness shall be adjusted so that when the pavers are placed and rolled, the top surface of the pavers will be at the required final grade.
- G. Tack coat goes on directly before paver is set. Only apply as much tack coat that can be set. Apply neoprene tack coat to surface of bituminous setting bed by mopping, squeegeeing, or troweling.

Paver Installation - Bituminous Setting Bed.

- A. Place pavers by hand in straight courses with hand tight joints and uniform top surface. Good alignment (deviation smaller than 1/4" over 10' run length) shall be kept and patterns shall be as shown on plans and details. Tolerances and deviations for pattern alignment, shall not exceed 1/4" over 5' run length. Tolerances and deviations for elevation alignment shall not exceed 1/4" over 5' run length. Tolerances and deviations for lippage shall not exceed 1/8".
- B. Protect the alignment and elevations of the newly laid pavers with plywood sheeting at all times. Advance the plywood as work progresses and maintain plywood protection over all areas subject to movement of materials, workers, and equipment.
- C. Pavers shall be cut only when necessary and used in courses as indicated on plans and details.
- D. Joints in the underlayment, if any, shall not reflect up through the setting bed and paver system.

- E. When all pavers are installed, apply joint sand to paving and sweep into all joints until joints are completely filled. Sweep clean the entire surface and remove all excess sand. Do not allow traffic on pavers prior to joints being filled.
- F. Protect newly laid pavers, slabs and curbs with plywood panels on which workers stand. Advance protective panels as work progresses but maintain protection in areas subject to continued movement of materials and equipment to avoid creating depressions or disrupting alignment of installed pavers, slabs or curbs.
- G. Replace cracked or chipped unit pavers at no additional cost to the Engineer.

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

Method of Measurement. MODULAR CONCRETE PAVERS (SPECIAL) will be measured for payment in place and the area computed in square feet.

Basis of Payment. MODULAR CONCRETE PAVERS (SPECIAL) will be paid for at Contract Unit Price per square foot for which such price shall include all labors, materials and equipment necessary to perform the work as herein specified. Portland Cement Concrete Underlayment with weep holes filled with pea gravels and filter fabric and tie bars, and Bituminous Setting Bed and Neoprene Tack Coat shall be included in the Contract Unit Price.

SUB-BASE GRANULAR MATERIAL, TYPE B, will be paid for separately as depth indicated on plans.

CAST IRON TREE GRATES

Description. Work under this item shall consist of furnishing and installing the cast iron tree grates, grate frame, P.C.C thickened slab, and lava rock mulch, as shown on the plans or as ordered by the Engineer, and specified herein, and shall conform to the requirements of applicable portions of the Standard Specifications for Road and Bridge Construction.

General Requirements.

Material.

The material shall be gray iron castings conforming to A.S.T.M. A48 or A-48-75, class 35 or 5B, and Article 1006.14 of the Standard Specifications. Concrete shall be Class SI and conform to the requirements of Section 1020 of the Standard Specifications.

Design

Grate pattern shall comply with ADA Guidelines for equal access. Tree grates will be 1.5" thick with accompanying frame. Grate will consist of two halves with 24" minimum diameter opening for trees. Grate openings shall meet or exceed ADA Standard. Grate dimensions will be specified in plans or by the Engineer. Grate halves shall be bolted together with tamperproof bolts. The frames and grates installed south of Devon Avenue centerline shall be imprinted with cast letters indicating "City of Chicago" per the standard detail drawings included in the contract plans. The frames and grates installed north of Devon Avenue centerline shall be imprinted with cast letters indicating "Lincolnwood" per the standard detail drawings included in the contract plans.

Frame

Frame shall be 1 3/4" x 1 3/4" x 1/4" steel frame, or shall coordinate with grate dimensions, surrounding the entire perimeter of the tree pit. Frame shall be manufactured with anchor tabs for concrete installation.

Finish

1. Surface Preparation :

The top surface shall be cleaned in accordance with Section 506 of the Standard Specifications for Method 2 (power or hand tool cleaning) and shall be free of all loose rust and loose mill scale.

2. Coating:

Before installation, in an effort to reduce the appearance of oxidation, all surfaces (top, bottom and edges) of the grates are to be coated and rubbed with two applications of a Type 1 Membrane Curing Compound meeting the requirements of Article 1022.01 of the Standard Specifications, or alternative compound as approved by the Engineer.

Surface preparation and coating will not be measured and paid for separately but will be included in the cost of all items listed herein.

Shop Drawings

Shop drawings of all items related to the manufacture and installation of the tree grate and frame shall be submitted and approved by ENGINEER before fabrication.

Manufacturer

Tree grates can be supplied by the following suggested manufacturers:

- a. Neenah Foundry, Neenah, Wisconsin
- b. Urban Accessories, Woodinville, WA;
- c. Ironsmith, Palm Desert, CA;
- d. Fairweather/Olympic Foundry, Seattle, WA.

And shall match in similarity the following Neenah tree grate styles; (rectangle) R-8811.

Fasteners

Tree grate halves shall be joined together with tamper resistant bolts with tamper resistant bolt assembly packages as provided by the manufacturer. Eliminate drill tap, countersink and assemble for (24) 3/8-16 x 2" flat head with stainless steel screw with pin (kit no. 90357). Tree grates shall be secured from beneath only.

Inspection

Installation assumes responsibility for performance.

Surface conditions

Examine frame, concrete ledge, or ground surface to receive grate. The seat for the grates shall be cleaned prior to setting the grates. Correct conditions to comply with manufacturer's recommended installation procedures.

Opening to receive grates & frame installation

Sub-base granular material Type B shall be placed and compacted to 95% proctor prior to installation of frame. Frame will then be placed on top of compacted sub-base surface. Wood forms shall be placed inside frame to prevent concrete seepage into pit area, and expansion joints placed on the outside of the frame. .

Tree grate frame shall be installed in thickened concrete slab at tree pit perimeter as indicated in plans
and as recommended by manufacturer.

If installing grate at back of curb, a C-channel shall be installed at curb to accept tree grate frame. If installing grate at pavers on concrete slab, an L-channel shall be installed at the slab to accept tree grate frame. Hilti-type Anchoring system for C-channel or L-channel shall have a minimum shear capacity of 12 kips live wheel load. Detailed product information shall be submitted for approval prior to installation.

Join Grate Halves

Bring tree grate halves together around tree at a level to allow easy access to underside. Join sections at preformed holes using temper-resistant bolt packages provided by manufacturer as suggested. The cost for this work and equipment will be included with these items.

Warranty

Manufacturer's written warranty shall be handed over to ENGINEER prior to installation of grates.

Material under Grate

Lava rock shall be black, 1/2 inch diameter to 1 inch diameter, 2 inches minimum in depth, clean and free of foreign matter, sticks, stones, and clods. The cost of furnishing and installing lava rock mulch will be included in the cost of this item.

Lava rock shall meet the bottom of the tree grates and filled around the opening level with grade.

The Contractor shall remove all litter and plant debris before mulching. The Contractor shall repair grade by raking and adding planting soil (as described in PLANTING SOIL, FURNISH AND PLACE 24") as needed, before mulching. Care shall be taken not to bury leaves, stems, or vines under mulch material.

All finished mulch areas shall be left smooth and level to maintain a uniform surface and appearance. All tree grate areas or work areas shall be clean of debris and mulch, prior to leaving the site.

Method of Measurement. CAST IRON TREE GRATES, of the size shown will be measured for payment per each tree pit constructed, complete in place.

Basis of Payment. The work under this item will be paid for at the contract unit price per each as shown in the Schedule of Unit Prices for CAST IRON TREE GRATES, which price will include; all necessary excavation, furnishing and placing the porous base, forms, reinforcement, concrete, lava rock, filter fabric, and any other work needed to complete the construction of the tree grate supports. No separate measurement nor payment shall be made for Class SI Concrete, castings, frames or other appurtenant work, the cost of which will included in the unit price each for CAST IRON TREE GRATES.

WATER SERVICE INSTALL, 1" COMPLETE

Description: This work consists of replacing existing water services from the main to the new buffalo box (public side of the right-of-way). Replacement of private side lead water services will be paid for separately, but public side services shall be quantified under this item. One water service replacement will be a 6" fire line and will require its own meter and RPZ.

General: This work shall be completed in accordance with Section 562 of the Standard Specifications and Section 41-2.11 of the Water and Sewer Specifications. New service lines shall be installed from the existing water main to the water service box.

The work shall include the replacement of all existing service boxes and reconnection of the existing services lines to the new service box. The Contractor shall provide the fittings necessary to connect new service boxes to the existing lines, regardless of the material composition of existing service lines which may include lead, copper, galvanized iron, or other materials.

Construction Requirements: The following items shall be provided for each water service in the Village of Lincolnwood.

1. Service Pipe shall be copper type K conforming to ASTM B88, with flared fittings. Minimum depth shall be four and one half (4- 1/2) ft of cover to finished grade.
2. Corporation stops shall be flared with a plug valve. Accepted Manufacturers are Mueller, Ford, or McDonald.
3. Curb stops shall be flared with a ball valve and Minneapolis pattern. Accepted manufactures are Mueller, Ford, or McDonald.
4. Service boxes shall be Mueller.

All services shall require full circle stainless steel tapping clamps. An accepted model is Ford FC202. The tap should be made at a forty-five (45) degree angle from the top of the main. Service taps shall be made no closer than sixteen (16) inches from other connections, bells, or fittings. The service line should be installed at a ninety (90) degree angle from the water main up to the service box. Tapping of main must be completed by an Illinois licensed plumber.

All work shall be in accordance with the details noted in the plans. House connections to the existing water main shall be made individually and in as short a time period as possible after testing and disinfection. No water customer shall be without water more than two (2) hours and shall be notified prior to disconnecting service.

Open trenching shall be used for the installation of short side services with a maximum allowable trench width of two feet. The Contractor shall "pothole" proposed drill path for all bored services and expose utilities.

Included in the work is the restoration of any landscaped areas, sodding, hard surfaces, curb and gutter, sidewalk, and tree removal/replacement required to complete the installation.

All new curb stops and service boxes shall be located in the parkway **out of driveways and sidewalks (unless approved by Engineer)** and approximately 2 to 3 feet behind the back of curb. The service box shall be installed over the curb stop and held in a truly vertical position until

sufficient backfill has been placed to ensure permanent vertical alignment of the box. The top of the box shall be adjusted and set flush with the established ground surface grade.

The installation of the new curb stops and service boxes and the removal and disposal of the existing curb stops and services boxes will not be paid for separately but shall be included in the cost of this pay item.

The existing valve boxes shall be removed in their entirety and the resulting hole backfilled with sand. All material resulting from the removal of existing valve boxes shall be disposed of by the Contractor according to Article 202.03 of the Standard Specifications.

If the existing meter vault is to be abandoned, they shall be removed and the resulting hole filled with sand. The existing water meters and 12" meter lids shall be removed and salvaged for use in proposed water meter vaults. The existing meter, meter vault frames, meter vaults, and any other materials that are not to be re-used shall be disposed of in accordance with Article 202.03 of the Standard Specifications. The surrounding surface shall be restored to match proposed elevations.

All connections to Village watermain, old or new, shall be scheduled to be performed under the supervision/inspection of the Village Community Development Department.

Method of Measurement and Basis of Payment: This work shall be measured and paid for at the contract unit price each for WATER SERVICE INSTALL, 1" COMPLETE, which payment shall be full compensation for all work, including tapping the existing water main, corporation stops, service box, curb stop, copper water service line, directional drilling of the copper water service line, service line reconnections, bushings, unions, or other fittings to disconnect existing services from the existing water main. The work shall also include all required excavation, backfilling of the trench including trench backfill (aggregate material) under all roadway, driveway, sidewalks etc., in accordance with the typical details in the plans, and aggregate used for temporary access. The work for all other restoration shall be paid for separately.

PEDESTRIAN ACTIVATED CROSSWALK WARNING SYSTEM

Description: This work shall include furnishing and installing the RRFB system complete with electronics enclosures, audible and accessible pushbuttons, rapid rectangular flashing beacons (RRFBs), cabling, and mounting hardware. Mast arms, LED signs, sign panels, traffic signal posts, and concrete foundations shall be paid for separately.

Power Requirements: The system shall be powered through AC 120 VAC power from the proposed lighting controller on Trumbull Avenue.

RRFB Requirements: The system shall consist of 6 RRFB modules with the TS post in the roadway median including a double sided (two RRFB modules) light bar installation. The RRFBs shall be mounted below the 11-2 signage as shown on the plans. The RRFBs shall operate in a wig-wag operation using a flash pattern that is compliant with the MUTCD. The flash duration shall be adjustable in-the-field from 5 to 60 seconds in one second increments, 60 to 1,200 seconds in 60-second steps, and 3,600 seconds. Default flash duration shall be 22 seconds. The system shall provide configurable nighttime intensity settings ranging from 10% to 100% of daytime intensity. Activation duration, Night intensity setting and adjustment for ambient daytime brightness shall be automatically broadcast to all RRFBs in the system when changed in one RRFB.

Communication: The pushbutton installations will communicate wirelessly to the adjacent electronic enclosures to activate all RRFB modules upon actuation.

Equipment Requirements: The equipment must be procured through an Illinois Department of Transportation approved vender and installed by an approved electrical contractor. Fasteners shall be stainless steel. The light bar bracket shall be constructed from galvanized or stainless steel and shall have both banding and bolting mounting options and shall be able to be mounted to all specified pole types.

Mounting adapter hardware for the RRFB cabinet shall be available for 4" – 4.5" round poles or square posts. Side-of-Pole mounting shall offer strapping as standard with an option for Z-bar and U-bolts. Mounting configurations shall not require specialized tools.

The RRFB cabinet shall house an auto-scrolling LED on-board user interface that provides on-site configuration adjustment, system status and fault notification.

The system shall use a dedicated light sensor to detect night and day states and apply any optionally-enabled intensity adjustments. The system shall operate normally within the temperature range of -40 to +161°F (-40 to +72°C). The RRFB cabinet and light bars shall be rated to a minimum of NEMA 3R.

If an additional activation occurs while the system is activated, the flash duration shall reset. For example, with the flash duration set to 20 seconds, if an additional activation occurs after the RRFB has been activated for 15 seconds the RRFB will continue for an additional 20 seconds, or 35 seconds in total. If the RRFB has ceased operation, any subsequent activation shall activate the RRFB without delay regardless of how recently the RRFB ceased operation.

Pushbutton Requirements: The pushbuttons shall be PROWAG and MUTCD compliant.

Warranty Requirements: Manufacturer shall provide a 2-Year Limited Warranty.

Basis of Payment: This work shall be paid for at the contract unit price per EACH for PEDESTRIAN ACTIVATED CROSSWALK WARNING SYSTEM. This price will include all costs necessary for furnishing labor, materials, and equipment to install the RRFB system per the manufacturer's specifications. Any technical assistance provided by the manufacturer or supplier shall be included in the contract's unit price. All pole wiring shall not be paid for separately but included in this pay items' unit price.

PLANTING SOIL, FURNISH AND PLACE 24"

Effective: April 10, 2020
Revised: March 21, 2022

Description. Work under this item shall be performed according to Section 211 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified. This work shall consist of furnishing and placing a mechanically pulverized or blended PLANTING SOIL MIX as detailed in the plans, standard drawings, work order and/or as directed by the Engineer.

Materials. Materials shall be according to the following Articles of the SSRBC except as modified herein:

Article/Section	
(a) Fine Aggregate (Note 1)	1003.06
(b) Topsoil	1081.05(a)

Note 1. The fine aggregate shall consist of natural sand.

General Requirements. The PLANTING SOIL MIX shall consist of pulverized or screened, natural, fertile, friable soil possessing characteristics of rich productive soil. 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 growth. Blending topsoil with sand and/or organic matter to produce an acceptable PLANTING SOIL MIX shall be allowed if mechanically blended during the pulverization process. The PLANTING SOIL MIX shall be blended utilizing $\frac{3}{4}$ " -2" screens and shall be free of clay lumps, roots, stone, gravel, and other debris. The PLANTING SOIL MIX shall be stored in stockpiles at the producer's or supplier's facility and be protected from erosion, absorption of excess water, and contamination at all times. Delivery to the job site shall only occur after the Engineer has given final approval. Final approval of the PLANTING SOIL MIX shall be based on testing performed by CDOT Quality Assurance (QA) on production samples.

Submittals. QC mechanical and chemical analyses shall be compiled in a final report detailing the QC results, and **shall be submitted by the General Contractor to the Engineer for review a minimum of 60 days prior** to the scheduled start of any plantings. The final report shall include the project number, project name, source of material, quantity of material represented by the test results, and supplier of the material. Test results shall be less than or equal to 30 days old when submitted.

Construction Requirements. Prior to placing the PLANTING SOIL MIX, all final adjustments to grade and any utility structures within the planting area must be completed and accepted by the Engineer. Planting areas shall be free of all trash and debris before placement begins. If geotechnical fabrics and/or drainage layers have been specified, the condition of these items shall be intact and free of holes, tears, or defects.

The PLANTING SOIL MIX shall be placed and settled per the contract plans and shall not be compacted by mechanical methods. Utilize only low pressure floatation tires on grading and installation equipment. PLANTING SOIL MIX improperly placed, settled, or found to be

unacceptable to the Engineer shall be removed and replaced with a PLANTING SOIL MIX in accordance with this specification at no cost to the City. The Contractor shall be responsible for repairing any damage caused during the removal and replacement operation, which includes, but is not limited to, plant material, irrigation system(s), water proofing membrane, adjacent sidewalk, curb and gutter, pavements, planters, etc.

Site Performance Testing. The Resident Engineer shall be present during all subgrade and soil mix performance testing. A soil compaction tester meeting the ASAE S313.3 standard shall be required for all soil compaction testing. A digital soil moisture meter capable of reading moistures up to 50% shall be required for all soil moisture testing.

The planting area subgrade shall be randomly tested once every 50 sq. ft. by QC with a soil compaction tester ensuring all compaction results are within a range of 75 to 250 psi. Additionally, areas showing signs of visual drainage problems shall also be tested to ensure those areas are within a range of 75 to 250 psi.

After placement of the PLANTING SOIL MIX it shall be randomly tested once every 50 sq. ft. by QC with a soil compaction tester ensuring all compaction results are within a range of 75 to 250 psi. Additionally, areas showing signs of visual drainage problems shall also be tested to ensure those areas are within a range of 75 to 250 psi. All PLANTING SOIL MIX compaction testing shall be done within 48 hours of anticipated planting operations.

After all soil compaction testing has been completed and found to be acceptable the PLANTING SOIL MIX shall be tested once every 50 sq. ft. by QC with a digital soil moisture meter. The PLANTING SOIL MIX must be above the permanent wilting point of 22% and below the field capacity point of 36%. All PLANTING SOIL MIX moisture testing shall be done within 48 hours of anticipated planting operations.

All performance test results shall be documented and submitted to the Resident Engineer for acceptance prior to beginning any planting operations. CDOT QA confirmation testing can be conducted for verification of compliance if deemed necessary by the Engineer. Any failures of QC testing or QA confirmation testing would require remediation as determined by the Engineer.

Any areas disturbed by irrigation installation shall be restored to finish grade and raked smooth. The finished grade shall be within ± 0.10 foot of the design grade. All debris, litter, tire tracks, dirt, and unintended materials shall be removed, swept, or washed off of all landscape, hard median surfaces, and pavement on a daily basis.

QC/QA Requirements. QC test results shall be procured exclusively from the stockpile to be used in the project in accordance with CDOT sampling protocols below. Once test results comply with all requirements of this specification, the contractor shall submit a request for CDOT QA testing of the designated stockpile for final acceptance. If additional material in excess of the initially approved stockpile is necessary to complete the work, new QC testing and CDOT QA testing will be required for each subsequent stockpile.

Sampling. All sampling shall be from the PLANTING SOIL MIX production stockpile. The number of QC or CDOT QA sampling locations required around the stockpile shall be according to the schedule shown below. The composite stockpile sample consisting of material from all sampling locations equally spaced around the stockpile shall be thoroughly remixed and quartered down to a testing sample size of one gallon $\pm 10\%$. Testing samples secured from the final quartering split

shall be from the combination of opposite diagonal quarters within the final quartering step. If the stockpile sampling scheduled does not provide enough material to provide a testing sample size of one gallon \pm 10% for the required QC or CDOT QA sample, multiple and equal number of samplings at each stockpile sampling location around the stockpile shall be increased until enough material is available to provide the necessary testing sample of a minimum volume of one gallon \pm 10%.

<u>Stockpile Quantity (c.y.)</u>	<u>Stockpile Sampling Locations</u>
≤ 225	3
$> 225^*$	<u>Quantity</u> 75

* The number of stockpile samplings shall be rounded up to the nearest whole number.

Testing. Mechanical and chemical analyses shall be performed on the PLANTING SOIL MIX sample and the results shall meet the requirements detailed below.

Mechanical Analyses

Particle Size Analysis (AASHTO T88)	<u>Requirements</u>
Clay content (< 0.002 mm)	Report
Silt content (0.002 to 0.05 mm) ¹	Report
Sand content (0.05 to 2 mm)	Report
USDA Soil Classification ²	<i>Loam or Silty Clay Loam</i>

<u>Minimum</u>	<u>Maximum</u>
Organic Content (AASHTO T194) ³	4 % 10 %

Chemical Analyses⁴

General Components	<u>Minimum</u>	<u>Maximum</u>
pH value	6.0 8.0	
Cation Exchange Capacity (meq/100g)		15 N/A
Soluble salt (mmho/cm)		0 1.7
Sodium (ppm)	0 200	
Sulfur (ppm)	10 40	
Primary Nutrients		
Phosphorous (ppm)	30 220	
Potassium (ppm)	90 500	

Note 1. Fines from washed sand may be utilized as sources of silt when obtained from IDOT approved suppliers.

Note 2. Results obtained from performing the AASHTO T88 test method shall be plotted on the USDA Texture Triangle to determine the soil classification. The USDA Texture Triangle with the plotted results must be included with the submitted results.

Note 3. Mushroom compost is not an acceptable source of Organic Matter.

Note 4. Any constituents added to the final blend in an attempt to bring one or more of the Chemical Component ingredients within tolerance will not be allowed and will be cause for the immediate rejection of the PLANTING SOIL MIX material in its entirety.

Certifications. All testing shall be completed by laboratories approved to perform the testing detailed above. Laboratories conducting the chemical testing must be an active member with the Illinois Soil Testing Association (ISTA) and laboratories performing the mechanical testing must be currently accredited by AASHTO for the specified mechanical test methods. If requested laboratories must be capable of providing proof of qualifications prior to testing.

Acceptance. PLANTING SOIL MIX will be considered acceptable for use and incorporation into the project upon Engineer Approval of the PLANTING SOIL MIX submittal as required in the Submittal section, and Engineer Approval of all CDOT QA testing per the requirements in the QC/QA Requirements section. Test results older than 6 months at the time of planting will not be accepted and retesting will be required by both QC and CDOT QA.

Method of Measurement. PLANTING SOIL MIX will be measured for payment in square yards in place after all means of consolidation have been applied and deemed satisfactory by the Engineer. The volume of soil will be computed by the method of average end areas.

Basis of Payment. This work will be paid for at the contract unit price per square yard for PLANTING SOIL, FURNISH AND PLACE 24".

VALVE VAULTS, TYPE A, 5'-DIAMETER, TYPE 1 FRAME, CLOSED LID

Description: This work shall consist of constructing valve vaults with frames and closed lids.

General: This work shall be completed in accordance with Section 602 of the Standard Specifications.

Pipe connections to vaults shall be mortared both inside and outside of the structure and approved by the ENGINEER prior to backfilling. The CONTRACTOR shall notify the ENGINEER when the mortar is installed so that it may be inspected prior to backfilling. Mortar shall consist of 50% hydraulic and 50% Portland cement. Mortar shall cover the entire 360 degrees of each side of the connection. This shall be included in the cost of the item.

Basis of Payment: This work will be paid for at the contract unit price per each for VALVE VAULTS, TYPE A, 5'-DIAMETER, TYPE 1 FRAME, CLOSED LID.

TRAFFIC CONTROL AND PROTECTION, (SPECIAL)

Description. Work under this item shall be performed in accordance with Section 701 of the Standard Specifications, except as herein modified. This work shall consist of furnishing, installing, maintaining, relocating and subsequently removing all signs, signals, markings, traffic cones, barricades, chain link fence, warning lights, flaggers and other devices which are to be used for the purpose of regulating, warning or guiding pedestrian and vehicular traffic during the construction of this improvement.

General Requirements. Traffic Control shall be in accordance with the applicable section of the Standard Specifications, the applicable guidelines contained in the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, and any Special Details and Highway Standards contained herein and in the plans.

Within 10 days of the Notice to Proceed, the Contractor shall submit a Traffic Control Plan as detailed herein for approval by the Engineer and shall furnish the name of the individual in its direct employ who is to be responsible for the installation and maintenance of the Pedestrian Traffic Control for this project. If the actual installation and maintenance are to be accomplished by a subcontractor, consent shall be requested of the Engineer at the time of the preconstruction meeting in accordance with Article 108.01 of the Standard Specifications. This shall not relieve the Contractor of the foregoing requirement for a responsible individual in its direct employ. The Department will provide to the Contractor the name of its representative who will be responsible for the administration of the Pedestrian Traffic Control Plan. The Contractor shall notify the Engineer 70 hrs. before commencing construction.

Special attention is called to Articles 107.09 (Public Convenience and Safety) and 107.14 (Maintenance of Traffic) of the Standard Specifications and the following Highway Standards, Details, Supplemental Specifications and Special Provisions, and Recurring Special Provisions contained herein relating to traffic control.

Contractor vehicles shall enter or leave work areas in a manner that will not be hazardous to or interfere with normal pedestrian traffic and shall not park or stop except within designated work areas. Personal vehicles will not be permitted to park within the right of way except in specific areas designated by the Engineer.

Pedestrian Traffic Control and Protection details are included in the standard drawings to specify the minimum required combination of traffic control devices in construction areas. Revisions, by the Engineer, to work or in the phasing of construction operations may require pedestrian traffic control to be installed in accordance with a standard other than those included in the plans; in such cases, the standards will be made available to the Contractor at least one week in advance of the change in Pedestrian Traffic Control. Payment for Pedestrian Traffic Control required by these added standards will be in accordance with the Article 109.04 of the Standard Specifications. Revisions or modifications to increase the Pedestrian Traffic Control protection shown in the contract shall be submitted by the Contractor for approval by the Engineer. A reduction of the Traffic Control shown in the contract will not be allowed.

If the Contractor requests and receives approval from the Engineer to revise or change the staging of the project from that specified on the plans any additional Pedestrian Traffic Control required due to that request will be considered included in the cost of this item.

All signs, signals, markings, traffic cones, barricades, chain link fence, warning lights, flaggers, and other traffic control devices shall conform to the plans, specifications, special provisions and the latest edition of the "State of Illinois Manual on Uniform Traffic Control Devices." The Contractor shall obtain, erect, maintain, and remove all Pedestrian Traffic Control devices in accordance with Article 107.14 of the Standard Specifications. Placement and maintenance of all pedestrian traffic control devices will be as directed by the Engineer. The Engineer will be the sole judge as to the acceptability of placement and maintenance of the pedestrian traffic control devices prescribed in the appropriate standards.

The Contractor shall insure that all barricades, chain link fence, signs, lights and other devices installed by him are operational every day, including Sundays and holidays. In the event of severe weather conditions, the Contractor shall furnish any additional personal required to properly maintain all pedestrian traffic control devices as directed by the Engineer.

The Contractor shall be responsible for the timely installation, maintenance, relocation and subsequent removal of all temporary signing, barricading and temporary striping necessary to accomplish these detours. The cost of this work will be considered included in the contract lump sum TRAFFIC CONTROL AND PROTECTION, (SPECIAL).

At the completion of each stage of construction or whenever detour operations indicate that a relocation of a proposed or existing pedestrian traffic control device is advisable as determined by the Engineer, the Contractor shall remove all pedestrian traffic control devices which were furnished, installed and maintained by him under this contract, and such devices shall remain the property of the Contractor. All pedestrian traffic control devices shall remain in place until specific authorization for relocation or removal is received from the Engineer.

The Contractor shall be aware of the requirements for coordination of all work in this project and adjoining or overlapping projects and for coordination of barricade placement necessary to provide a uniform traffic detour pattern. The Contractor will not be permitted to erect, change or remove its detour barricade system without the prior approval of the Engineer.

Delays to the Contractor caused by complying with these requirements will be considered included in the cost of the item for Pedestrian Traffic Control and Protection, and no additional compensation will be allowed.

Pedestrian Sidewalk Control: This work shall consist of installing, maintaining, and removing necessary signs, barricades, plywood walkways, and wood framed hurricane fencing needed to direct pedestrians to usable sidewalks and walkways during the construction. (Sign legend "Pedestrian Walkway (Arrow) Use Other Side": Size 24" x 30"; black legend on a white reflectorized background) shall be placed at pedestrian crossing locations informing pedestrians of the correct pedestrian zone. Barricades shall be placed on all closed sidewalk sections.

Barricades consisting of temporary 6' fencing with privacy screening on temporary footings with sandbags shall be placed to maintain an ADA compliant sidewalk corridor and separate the pedestrian zone from the work zone. These barricades shall be secure from falling over.

Use one "Pedestrian Walkway (Arrow)" (black legend on white reflectorized background) sign at each end of each sidewalk section being reconstructed.

At each point of closure, sufficient numbers of barricades shall be used to completely close the pathway.

Pedestrian walkways shall be maintained free of any obstructions and hazards such as holes, debris, mud, construction equipment, stored materials, etc. and shall be broom swept daily or as directed by the Engineer.

All hazards near or adjacent to walkways shall be clearly delineated.

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

As directed, the Contractor shall maintain pedestrian access to adjacent entrances by installing ADA compliant wood frame-constructed walkways and ramps from the curb line to adjacent property entrances, and at either end of the pedestrian path as directed by the Engineer. These ramps can be reused, if maintained in acceptable condition, throughout the project. Pedestrian access to adjacent properties shall be uninterrupted until the walk is fully restored.

The Contractor shall provide and maintain acceptable, temporary access from the street being improved to abutting side streets, alleys, driveways, parking lots, building, houses and/or other property where egress and ingress is required. The temporary access shall meet ADA requirements and shall be provided using the various means listed below.

- steel cover plates of the proper size and strength to span the work area
- wood ramps and boards with railings, spanning the work zone,
- pedestrian barricades
- crushed stone
- or other means approved by the Engineer.

When permanent access has been re-established, the materials used for temporary access shall be removed by the Contractor and shall become his property for disposal thereof. However, he may use the same material in other locations to provide temporary access if approved by and as directed by the Engineer.

In addition, site cleanliness shall be maintained at all times, both inside and outside the work zone areas. To ensure a prompt response to incidents involving the integrity of the work zone access devices, the Contractor shall provide a telephone number where a responsible individual can be contacted on a 24-hour-a-day basis. When The Engineer is notified or determines a deficiency exists, The Contractor shall dispatch sufficient resources within 2 hours of notification to make needed corrections of deficiencies that constitute an immediate safety hazard. If the Contractor fails to restore the required maintenance of access control and protection within the time limits specified above, the Contractor will be subject to Liquidated Damages for each 24-hour period (or portion thereof) the deficiency exists to partially cover costs and losses by the City. This time period will begin with the time of notification to the Contractor and end with the Engineer's acceptance of the corrections. In addition, if the Contractor fails to respond, the Engineer may correct the deficiencies and the cost thereof will be deducted from monies due or which may become due the Contractor. This corrective action will in no way relieve the Contractor of contractual requirements or responsibilities

The cost of this work will be included in the contract lump sum price for TRAFFIC CONTROL AND PROTECTION, (SPECIAL).

Special attention shall be given to advance signs during these operations in order to keep barricade placement consistent with lane assignment. The Contractor shall cover all vehicle traffic control devices, which may be inconsistent with traffic patterns during the transfer from one construction stage to another.

The Contractor's vehicle shall always move with and not against or across the flow of traffic. These vehicles shall enter or leave work areas in a manner, which will not be hazardous to or interfere with normal traffic and shall not park or stop except within designated work areas. Personal vehicles will not be permitted to park within the right of way except in specific areas designated by the Engineer.

Vehicle Control and Protection details are included in the standard drawings to specify the minimum required combination of traffic control devices in construction areas. Revisions, by the Engineer, to work or in the phasing of construction operations may require traffic control to be installed in accordance with a standard other than those included in the plans; in such cases, the standards will be made available to the Contractor at least one week in advance of the change in traffic control. Payment for traffic control required by these added standards will be in accordance with the Article 109.04 of the Standard Specifications. Revisions or modifications to increase the traffic control protection shown in the contract shall be submitted by the Contractor for approval by the Engineer. A reduction of the traffic control shown in the contract will not be allowed.

If the Contractor requests and receives approval from the Engineer to revise or change the staging of the project from that specified on the plans any additional traffic control required due to that request shall be considered included in the cost of this item and no additional payment will be made.

The Contractor shall immediately furnish a certified flagger or flaggers if, in the opinion of the Engineer, the Contractor's construction means or methods warrant. No additional compensation will be made for flaggers. If no flaggers are available the Contractor shall cease operations until they become available.

All signs, signals, markings, traffic cones, barricades, chain link fence, warning lights, flaggers, and other traffic control devices shall conform to the plans, specifications, special provisions and the latest edition of the "State of Illinois Manual on Uniform Traffic Control Devices." The Contractor shall obtain, erect, maintain, and remove all traffic control devices in accordance with Article 107.14 of the Standard Specifications. Placement and maintenance of all traffic control devices will be as directed by the Engineer. The Engineer will be the sole judge as to the acceptability of placement and maintenance of the traffic control devices prescribed in the appropriate standards.

The Contractor shall insure that all barricades, chain link fence, signs, lights and other devices installed by him are operational every day, including Sundays and holidays. In the event of severe weather conditions, the Contractor shall furnish any additional personal required to properly maintain all traffic control devices as directed by the Engineer.

The Contractor shall be responsible for the timely installation, maintenance, relocation and subsequent removal of all temporary signing, barricading and temporary striping necessary to

accomplish these detours. The cost of this work will be considered included in the contract lump sum for TRAFFIC CONTROL AND PROTECTION, (SPECIAL).

At the completion of each stage of construction or whenever detour operations indicate that a relocation of a proposed or existing traffic control device is advisable as determined by the Engineer, the Contractor shall remove all traffic control devices, which were furnished, installed and maintained by him under this contract, and such devices shall remain the property of the Contractor. Any traffic control devices furnished, installed and maintained by the City will be removed by City forces and will remain the property of the City. All traffic control devices shall remain in place until specific authorization for relocation or removal is received from the Engineer.

The Contractor shall be aware of the requirements for coordination of all work in this project and adjoining or overlapping projects and for coordination of barricade placement necessary to provide a uniform traffic detour pattern. The Contractor will not be permitted to erect, change or remove its detour barricade system without the prior approval of the Engineer.

The placement of barricades and warning signs for the required lane closures shall be as specified herein and shall proceed in the direction of the flow of traffic. The removal of all signs and barricades shall begin at the end of the construction areas and proceed toward oncoming traffic. Beginning on the date when the Contractor begins work on this project he shall assume responsibility for the normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance will include all repair work deemed necessary by the Engineer but will not include snow removal operations.

The work involved in maintaining the existing pavement as above specified will be paid for separately at the contract unit price for HOT-MIX ASPHALT BINDER COURSE (HAND METHOD), N70 unless specified elsewhere in the Detailed Specifications or the Special Conditions. If no such item(s) of work has been provided for in the contract or otherwise specified for payment, this work will be paid for as extra work, in accordance with Article 109.04 of the Standard Specifications. Vehicle control and protection required for this work will be considered included in the lump sum price for TRAFFIC CONTROL AND PROTECTION, (SPECIAL).

A flashing arrow board meeting the requirements of Article 1106.02 of the Standard Specifications shall be operating at all times when a lane is closed to traffic on a multi-lane highway. Arrow boards shall be provided and located in ahead-on position within each lane closure taper. The cost of furnishing and maintaining arrow boards will be considered included in the contract lump sum price for TRAFFIC CONTROL AND PROTECTION, (SPECIAL)

Delays to the Contractor caused by complying with these requirements will be considered included in the cost of Vehicle Control and Protection, and no additional compensation will be allowed.

Method of Measurement. TRAFFIC CONTROL AND PROTECTION, (SPECIAL) will be measured for payment on a lump sum basis.

Basis of Payment. The work under this item will be paid for at the contract lump sum price as shown in the Schedule of Unit Prices for TRAFFIC CONTROL AND PROTECTION, (SPECIAL), which price will be payment in full for all labor, materials, transportation, handling and items/work necessary to furnish, install, maintain, and remove all traffic control devices required by the appropriate standards and as approved by the Engineer. No adjustment or additional

compensation will be allowed except as specified herein. The salvage value of the materials removed will be reflected in the bid price for this item.

To ensure a prompt response to incidents involving the integrity of the work zone traffic control devices, the Contractor shall provide a telephone number where a responsible individual can be contacted on a 24-hour-a-day basis. When The Engineer is notified or determines a deficiency exists, The Contractor shall dispatch sufficient resources within 2 hours of notification to make needed corrections of deficiencies that constitute an immediate safety hazard. If the Contractor fails to restore the required vehicle control and protection within the time limits specified above, the Contractor will be subject to Liquidated Damages for each 24-hour period (or portion thereof) the deficiency exists to partially cover costs and losses by the City. In addition, if the Contractor fails to respond, the Engineer may correct the deficiencies and the cost thereof will be deducted from monies due or which may become due the Contractor. This corrective action will in no way relieve the Contractor of contractual requirements or responsibilities

In addition any work performed by the Contractor within the work zone that presents a hazard to vehicular or pedestrian traffic will be subject to charges for TRAFFIC CONTROL DEFICIENCY. Debris removal, fly dumping, proper access to abutting property, timely and correct placement of short term, temporary and permanent pavement markings, along with all items of work contained within this item are also subject to this TRAFFIC CONTROL DEFICIENCY.

LIGHT POLE FOUNDATION (SPECIAL)

Effective: March 17, 2024

Description. The following CDOT Division of Electrical Operations (DEO) material specifications and standard drawings are applicable to this work.

Material Specifications: 1465, 1467, 1533
Standard Drawings: 876

This work shall consist of constructing a lighting controller foundation.

Materials. Concrete shall be Portland cement concrete, Class SI, meeting the requirements of Section 1020 of the IDOT Standard Specifications for Road and Bridge Construction (SSRBC). Ground rods shall meet the requirements of Material Specification 1465. Conduit shall be PVC meeting the requirements of Material Specification 1533. Anchor rods shall meet the applicable requirements of Material Specification 1467.

Construction Requirements. The Contractor shall install a concrete foundation for a base mounted lighting controller cabinet, as shown on City of Chicago Drawing Number 876. Work under this item shall be performed in accordance with Section 800 of the SSRBC.

The foundation shall have a minimum depth of at least forty inches (40") below grade and shall have large radius conduit elbows in quantity, size and type shown. The elbow ends above ground shall be capped with standard conduit bushings. The Contractor shall furnish anchor bolts, hardware, conduit elbows, and all other material shown on the foundation construction drawing.

All excavation and restoration of parkway shall be considered as part of this item. If the foundation is in sidewalk, an expansion joint shall be provided between the sidewalk and the foundation.

Basis of Payment. Lighting controller foundations will be paid for at the contract unit price per foot for LIGHT POLE FOUNDATION (SPECIAL).

LIGHT POLE FOUNDATION

Description: This work shall consist of constructing and installing a 24 inch diameter concrete light pole foundation (straight or offset) as shown on the contract drawings.

Materials and Construction Requirements: The concrete foundation shall be constructed and installed per the details in the Contract Drawings, and in conformance with Section 836 of the Standard Specifications. Where soil conditions require support to prevent caving in of the shaft sidewall, the contractor shall be responsible for furnishing and installing a full depth form liner at no additional cost. The Contractor shall locate all utilities. If a utility is found during excavation in conflict with the proposed foundation, the Contractor shall backfill the hole and relocate the foundation at no additional cost. If hydro-excavation is required for any reason it shall be performed at no additional cost.

Measurement and Payment: Concrete foundations shall be measured for payment in feet, along the vertical (and horizontal) centerline(s) of the foundation without overlap.

This work shall be paid for at the contract unit price per Foot for

**LIGHT POLE FOUNDATION, 24" DIAMETER, SPECIAL,
LIGHT POLE FOUNDATION, 24" DIAMETER, OFFSET,**

which price shall be payment in full for all material, labor and any other items required to complete the work.

CONCRETE RETAINING WALL REMOVAL

Description: The CONTRACTOR shall be required to remove and dispose of segmental concrete block retaining wall with maximum height less than 5', to 12" below proposed grade. This work shall also include removal and disposal of up to 3 feet restrained soils/materials behind the wall.

Method of Measurement. CONCRETE RETAINING WALL REMOVAL will be measured for payment per foot measured along retaining wall outside face at ground surface.

Basis of Payment. This work will be paid for at the contract unit price per foot for CONCRETE RETAINING WALL REMOVAL.

ELECTRICAL SPECIFICATION 1351

**DIVISION OF ELECTRICAL OPERATIONS
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO REVISED MAY 30, 2023**

WIRE: SINGLE CONDUCTOR NO. 12 COPPER WITH CROSS LINKED POLYETHYLENE INSULATION

SUBJECT

1. This specification states the requirements for insulated wire intended for use as a conductor to connect street light luminaires to aerial distribution wires or underground distribution cables in a street lighting circuit. This wire is also known as pole wire. The wire shall be UL classified as Type USE-2.

GENERAL

2. (a) Specifications. The cable shall conform in detail to the requirements herein stated and to the latest referenced specifications of the following organizations:

American Society for Testing and Materials (ASTM)
Insulated Cable Engineers Association (ICEA)
National Electric Code (NEC)
National Electrical Manufacturers Association (NEMA)
Underwriters Laboratories (UL)
- (b) Acceptance. Cable not conforming to this specification will not be accepted.
- (c) Sample. If requested by the Chief Procurement Officer, a three (3) foot sample of the cable intended to be provided under this specification, shall be submitted to the Engineer of Electricity within fifteen (15) business days after receipt of the request.
- (d) Warranty. The contractor shall warrant the cable to be first class material throughout. The contractor will be responsible for any cable failing during normal and proper use within one (1) year after the date of acceptance by the City. The contractor shall provide material replacement of any failed cable. There shall be no cost to the City. All replacements must be made free of charge F.O.B. delivery point of original contract.

CABLE

3. (a) Construction. The cable shall consist of an uncoated copper conductor concentrically encased in a moisture resistant thermosetting plastic of cross linked polyethylene (XLPE). The cable shall be listed with UL as Type RHW-2 or Type USE-2, and shall meet the NEC's requirements for this type of cable up to 90° C in wet or dry locations. The cable shall meet the requirements of UL44 and UL83 for thermosetting cable.
- (b) Color. Cable shall black, or another available color, as per order.
- (c) Marking. The cable shall be identified by a permanently inscribed legend in white lettering. The legend shall have the following information at a minimum: 1/C #12AWG, 600V, RHW-2 or USE-2, and manufacturer's name. The legend shall be repeated at approximately eighteen inch (18") intervals parallel to the longitudinal axis of the cable.
- (d) Overall cable diameter shall be approximately 0.19 inches.

CONDUCTOR

4. (a) Material. Conductor shall be Number 12 AWG consisting of seven (7) strands of uncoated hard drawn copper wires per ASTM-B1.
- (b) Stranding. Wire stranding shall be in accordance with ASTM B-8.

INSULATION

5. (a) Type. The insulation shall be a cross linked polyethylene (XLPE) meeting the physical and electrical requirements herein specified and the requirements of NEMA WC-70 (ICEA S-95-658).
- (b) Thickness. The insulation shall be circular in cross section and have an average thickness of 45 mils.

PACKING

6. (a) Sealing. Both ends of each length of cable must be thoroughly sealed to prevent the entrance of moisture and other foreign matter.
- (b) The cable must be delivered in coils containing five hundred (500) feet each. Each coil must be packed in individual dispenser cartons. Each carton must be labeled, identifying the cable type and size, manufacturer, and date of manufacture.

ELECTRICAL SPECIFICATION 1375

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
REVISED MARCH 11, 2022**

BASE: BALLAST HOUSING, NO. 7 U.S. STANDARD GAUGE STEEL

SUBJECT

1. This specification states the requirements for ballast housing base assemblies to be installed on concrete foundations and to serve as bases for anchor base type steel poles with mast arm attached street light luminaires.

GENERAL REQUIREMENTS

2.
 - (a) Specifications. The base assemblies shall conform in detail to the requirements herein stated and to the specifications of the American Society for Testing and Materials, of which the latest published revisions will govern.
 - (b) Acceptance. Base assemblies not conforming to this specification will not be accepted.
 - (c) Drawings. The drawing mentioned herein is a drawing of the Department of Transportation. It is an integral part of this specification cooperating to state necessary requirements.
 - (d) Shop Drawing. One complete set of shop drawings of the base assembly intended to be furnished must be submitted within fifteen (15) days upon request of the Chief Procurement Officer.
 - (e) Sample. One completely assembled base of the manufacture intended to be furnished must be submitted upon request of the Chief Procurement Officer within fifteen (15) days after receipt of the request.

DETAIL REQUIREMENTS

3. (a) Drawing. The base assembly must conform in detail to the design and dimensions shown on Drawing No. 785, dated March 25, 1977.
- (b) Material. The steel used in the fabrication of the base assemblies must conform to ASTM A606 Type 4 for the sides and door and to ASTM A871 Grade 65 for the top, bottom and anchor plates.
- (c) Thickness. The sides and door must be No. 7 U.S. Standard Gauge; the top, bottom and Anchor Plates must be 3/4 inch plate.
- (d) Door. The door must be drilled top and bottom for, and furnished with, four (4) 1/4-20NCX3/4" button head stainless steel tamper resistant bolts for fastening top and bottom of door to base as shown on drawing No. 785. Ten (10) wrenches or drivers to fit the door bolts must be furnished with each fifty (50) base housings.
- (e) Hardware. The bolts, nuts, lock washers and anchor plates must conform to the drawing. Four (4) galvanized hex head machine bolts, four (4) galvanized hex nuts, four (4) galvanized lock washers, and two (2) 3/4" thick steel anchor plates must be furnished with each base assembly. The anchor plates must be shipped bolted to the top of the ballast housing assembly using the hardware enumerated above.
- (f) Welding. Every welded joint shall be made in conformity with the proper interpretation of the standard welding symbols of the American Welding Society as indicated on the drawings. Each bidder must submit with his proposal a drawing showing the sizes and types of welds, the type of electrode and the welding methods he proposes to use in fabricating the base assembly.
- (g) Sandblasting. The door and ballast housing shall be thoroughly sand blasted to remove all scale, oil or slag prior to painting.
- (h) Dating. The top of the ballast housing base must be stamped or engraved with the year of manufacture in numerals not less than 1/2" in height.
- (i) Painting. A coat of oil-based rust-inhibiting paint shall be applied on the inside weld of the base. The complete

base assembly, inside and outside, is to be given a coat of iron oxide zinc chromate primer meeting the requirements of SSPC-Paint 25.

TESTING

4. (a) Chemical Composition. Certified reports from the steel manufacturer must be furnished to the City upon request of the Chief Procurement Officer.
- (b) Test Specimens. Shall conform to the requirements of ASTM Specifications A871 Grade 65 and A606 Type 4.
- (c) Strength Tests. One test specimen of the metal in each order of 50 base assemblies or less shall be tested for tensile strength and elongation, in accordance with ASTM Standards.
- (d) Welding Tests. One percent (1%) of the longitudinal and circumferential welds of the base assembly shall be inspected for penetration and soundness of the welds by the magnetic particle inspection method or by radiography. If the magnetic inspection process is used, the dry method with direct current shall be employed. All transverse welds must be magnetized by the "prod" (circular magnetization) method. Longitudinal welds may be magnetized by either circular or longitudinal magnetization.
- (e) Certificate. One certified copy of the test data sheet must be furnished to the City before delivery of the bases.

PACKING

5. When packed for transportation and delivery as per paragraph 3(e), the base assemblies must be thoroughly blocked or otherwise protected to prevent damage to painted surfaces.

THERMAL MAGNETIC CIRCUIT BREAKER

SUBJECT

1. This specification covers the requirements for thermal-magnetic circuit breakers capable of providing complete over-current protection for street lighting branch-load and service circuits.

GENERAL REQUIREMENTS

2.
 - (a) Sample. One complete circuit breaker of each type and size, and of the manufacture intended to be furnished must be submitted upon request of the Chief Procurement Officer within fifteen (15) business days after receipt of such request. The sample(s) shall be delivered to the Division of Electrical Operations, 2451 South Ashland Avenue, Chicago, Illinois 60608.
 - (b) U.L. Approval. Circuit breakers furnished under this specification shall be listed and approved by Underwriter's Laboratories, Inc.
 - (c) Applicable Specifications. Where reference is made to applicable requirements of Underwriter's Laboratories, Inc., Bulletin #489, entitled "Standard for Branch Circuit and Service Circuit Breakers," hereinafter cited as the U.L. Standards, the most recently published revision will govern.
 - (d) Assembly. Each circuit breaker must have the thermal-magnetic trip installed, calibrated and sealed within its insulated housing.
 - (e) Instructions. Complete installation instructions, details on wiring, and information on operation shall be furnished with each circuit breaker, except as otherwise indicated.

- (f) Packing. Each circuit breaker shall be packed in a suitable manner so that it will not be damaged in shipping or handling.

(g) **TYPES AND SIZES**

3. (a) EHD Frame Circuit Breakers. For use on A-C Systems with a 100-ampere frame; minimum interrupting rating of 18,000 R.M.S. symmetrical amperes at 240 volts A.C.
1. Single pole, 240 or 480 volts A.C., ampere rating from 15 to 100.
 2. Double pole, 240 or 480 volts A.C., ampere rating from 15 to 100.
- (b) FDB Frame Circuit Breakers. For use on A-C Systems with a 150 ampere frame; minimum interrupting capacity of 18,000 R.M.S. symmetrical amperes at 240 volts A-C.
1. Double pole, 240, 480 or 600 volts A-C, ampere rating from 15 to 150.
 2. Triple pole, 240, 480 or 600 volts A-C, ampere rating from 15 to 150.
- (c) JDB Frame Circuit Breakers. For use on A-C Systems with a 250 ampere frame; minimum interrupting current of 65,000 R.M.S. symmetrical amperes at 240 volts A-C.
1. Double pole, 240, 480 or 600 volts A-C, ampere ratings from 70 to 250.
 2. Triple pole, 240, 480 or 600 volts A-C, ampere ratings from 70 to 250.

DESIGN AND CONSTRUCTION

4. Circuit breakers furnished under this specification must include the following design and construction features: (1) molded insulated housing, (2) thermal-magnetic trip mechanism, (3) silver alloy contacts, (4) corrosion-resistant internal parts, (5) trip-free, indicating handle, and (6) pressure-type terminals.

DETAIL REQUIREMENTS

5. (a) Thermal-Magnetic Trip Mechanism. The breaker must be activated on current overload by means of a thermal-magnetic trip mechanism. This mechanism must be non-adjustable, non-interchangeable, and factory calibrated and sealed. Instantaneous tripping as controlled by the magnetic trip setting, and time delay tripping accomplished by thermal action must be in accordance with the manufacturer's published characteristic curves for these breakers or with calibration requirements of the U. L. Standards, as applicable.
- (b) Contact Mechanism. The contacts must be spring loaded and provide a quick-make, quick-break non-teasing action. The contact mechanism must be such that the breaker will trip open even if the handle is held or locked in the ON position.
- (c) Calibration. Rating and performance of these breakers must be based on calibration at an ambient temperature of 40° C. (104°F.).
- (d) Rated Current. Each breaker must be capable of carrying 100% rated current continuously in its calibrated ambient temperature without tripping and without exceeding the temperature limits specified in the U. L. Standards.
- (e) Contacts. The contacts must be made of a non-welding silver alloy or equivalent, subject to approval.
- (f) Internal Parts. All internal parts of these circuit breakers shall be corrosion resistant material.
- (g) Terminals. Solderless, pressure type terminals of copper construction must be provided for both line and load connections.
- (h) Handle Indication. The handle must indicate clearly whether the circuit breaker is on the ON, OFF, or TRIPPED position.
- (i) Mounting. Breakers furnished under this specification must have drilled and counterbored holes for front mounting which must conform to spacings shown on Department of Transportation Drawings numbered 883,

884, 886, and 887.

(j) Test Requirements. These breakers must be capable of meeting the following sequence of test requirements as specified in the U. L. Standards.

1. Endurance test.
2. Calibration test at 200% and 125% of rated current.
3. Short circuit tests
4. Calibration test at 500% rated current.
5. Dielectric strength test.

WARRANTY

6. Circuit breakers furnished under this specification shall be warranted by the manufacturer against defects in materials or workmanship for a period of one year after installation. During this period, should a failure occur, repair or replacement must be made without cost to the City.

ELECTRICAL SPECIFICATION 1447

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
REVISED JANUARY 9, 2024**

POLE: ANCHOR BASE, 3 AND 7 GAUGE, TAPERED TUBULAR STEEL, WITH HANDHOLE ENTRY

SUBJECT

1. This specification states the requirements for tapered, tubular, 3 gauge and 7 gauge steel anchor base poles with mast arm supports. They will support street light luminaires and/or traffic signal mast arms and will be served by underground cables.

GENERAL

2. (a) Specifications. The poles shall conform in detail to the requirements herein stated, and to the requirements of the following organizations cited herein, of which the most recent revisions shall govern:
 - American Association of State Highway and Transportation Officials (AASHTO)
 - American National Standards Institute (ANSI)
 - American Society for Testing and Materials (ASTM)
 - American Welding Society (AWS)
 - Association for Materials Protection and Performance
 - American Society for Nondestructive Testing (ASNT)
- (b) Acceptance. Poles not conforming to this specification will not be accepted.
- (c) Bidders Drawings. Bidders shall submit with their bids detailed scale drawings of the mast showing actual dimensions, details, and welding. Shop drawings must be original engineering drawings created by the manufacturer. The drawings must show every dimension necessary to show how all parts will fit each other and be properly held in assembly. These drawings must also be submitted in electronic format, preferably a CAD file, if requested by the City.
- (d) Drawings. The drawings mentioned herein are drawings of the Department of Transportation being an integral part of this specification cooperating to state necessary requirements.

(e) Sample. If requested by the Chief Procurement Officer, one completely assembled anchor-base pole of the manufacture intended to be furnished, must be submitted for review within fifteen (15) business days of receiving the request.

(f) Warranty. The manufacturer shall warrant the performance and construction of the light poles to meet the requirements of this Specification and must warrant all parts, components, and appurtenances against defects due to design, workmanship, or material developing within a period of five years after the light poles have been delivered. This will be interpreted particularly to mean structural or mechanical failure of any element or weld, or failure of any portion of the painting system. The warranty must be furnished in writing guaranteeing material replacement including shipment, free of charge to the City. The Commissioner will be the sole judge in determining which replacements are to be made and the Commissioner's decision will be final.

STANDARDS

3. (a) Assembly. Each anchor base pole shall consist of a steel mast with handhole entry, entry door with machine screws, grounding nut, mast base plate, top cap for mast, two (2) mast arm supports, bolt covers, and all necessary hardware required for complete assembly of these parts, ready for assembly, without special tools.
- (b) Interchangeability. Members of each pole type shall be mutually interchangeable for assembly, so that no reworking will be required to make any member fit properly in the place of any other similar member of any other similar pole.
- (c) Design. Each pole type shall conform in design and dimensions to the pertinent drawing(s) listed in Table "A".

MASTS

4. (a) Mast Size. The outside diameters of the mast of each pole type shall be as listed in Table A. The mast must be tapered at 0.14 inches per foot.
- (b) Material. The mast must be fabricated from one length of No. 3, No. 7, or No. 11 Standard gauge steel meeting the material requirements of ASTM A606 for low alloy high strength coil steel, which, after fabrication, must possess an ultimate tensile strength of not less than 70,000 psi and a yield strength of not less than 60,000 psi, in accordance with ASTM A595, Grade C. Chemistry of the steel must be such as to insure resistance to atmospheric corrosion superior to that of ordinary copper bearing steel. Material certification is required. Manufacturer's steel meeting the specified physical and chemical requirements, and approved by the Commissioner, will be accepted.
- (c) Fabrication. The mast must be fabricated with not more than one (1) longitudinal weld. The weld shall be ground or conditioned in a manner as to

provide a smooth appearance so that the weld seam is virtually invisible. There shall be no lateral welds in the masts other than where the masts are welded to the steel bases. Each mast must be straight and centered on its longitudinal axis. Each mast must be worked to form a round cross-section with a maximum out of roundness or ovality of 1/8" measured at the cross section. The maximum deflection, flatness or "waviness" of the seam area shall be 1/32". This shall be measured with a taper gauge and a straight edge, measured at the trough between the high peaks. The completed, unpainted masts shall have smooth external surfaces free from protuberances, dents, cracks, or other imperfections marring their appearance.

(d) Base. The mast base shall be a steel plate, of low alloy, high strength steel as noted in Par. 4 (b).

Plate Base. The base plate for each pole type shall be as listed in Table "A". It must be fabricated from the same ASTM A606 low alloy, high strength steel as is used for the mast. After fabrication the steel must meet the requirements of ASTM A588. The mast must be inserted into the base to a maximum depth which will still allow for an adequate weld to be made between the bottom of the mast and the plate. A circumferential weld must be made between the mast and the base at both the top and underside of the plate. Non-metallic removable bolt covers which completely cover the anchor bolts and nuts shall be provided. The covers must be attached with stainless steel screws coated with a non-seizing compound, or another type of non-seizing fastener, as approved by the Commissioner. The covers shall enclose the anchor bolts and be secured in an approved manner. The base shall be attached to the mast so that the bearing surface of the base is at right angles to the longitudinal axis of the mast. The vertical center line of the seam must be positioned so that no welds for the simplex attachments and the handhole opening shall not be permitted to intersect the seam weld.

Anchor Rod Openings. All anchor rod openings for each pole type shall have a width as listed in Table "A". Each opening must be sized to have a circumferential slot length equal to 15° of the circumference.

(e) Mast Arm Support Plates. The mast arm support plates shall be made of cast steel conforming to the requirements for Grade 65-35 cast steel of ASTM A27, or equivalent, subject to approval. They shall neatly fit the external surface of the mast. The upper mast arm support plate must have a hollow protuberance, the hole of which must be approximately equivalent to two (2) inches in diameter, extending into the interior of the pole providing a smooth surface for the lamp cables to rest upon. The mast arm support plates shall be designed so that they will carry the mast arm and hold it in the proper position for fastening the mast arm to the mast. The design of the mast arm support plates must be a two (2) bolt type as shown on Drawing No. 659.

(f) Provision for Ground. A 1/2-13 UNC (unified thread – course ANSI B1.1)

square nut shall be welded to the inside of the mast on the handhole entry frame for a ground connection.

(g) Entry. A vertical doorframe carrying a removable door providing access to the interior of the mast must be welded into a close fitting opening centered approximately 15 inches above the bottom of the base. The doorframe shall be formed and welded of steel with a cross section of two and one-quarter (2-1/4) inches wide by one-quarter (1/4) inch thick to adequately reinforce the opening of the mast. The internal horizontal clearance of the doorframe must be four and three-quarter (4-3/4) inches; its internal vertical clearance must be seven (7) inches. Its upper and lower ends must be semi-circular meeting its straight sides tangentially. The radius of this opening must be two and three-eighths (2-3/8) inches. The vertical center line of the entry must be at a right angle clockwise from the vertical center line of the mast arm supports. The frame must have two welded tabs; one at the top and one at the bottom of the door frame. These tabs must be drilled and tapped to accept a 1/4-20 UNC screw. The top hole must be located 13/16 of an inch from the top of the opening. The bottom hole must be located 13/16 of an inch from the bottom of the opening. The 1/4-20 UNC machine screws must be stainless steel with hex heads, meeting the requirements of ASTM A193. The screws shall be treated with a compound to prevent seizing. Other non-seizing types of screws and fasteners may be considered. An alternate method of attachment consisting of a removable hinge on the bottom with a screw connection at the top may be considered. (The above requirements apply to all pole masts except those with a 10 inch bolt circle. Poles with 10 inch bolt circles must have handhole openings of 3" by 5". All other requirements apply.)

(h) Door. The removable door must be formed of sheet steel approximately one-eighth (1/8) inch thick. It shall be flat or dished depending upon the pole type and fit the doorframe closely so that it will stay in proper position even if its locking screws are slightly loosened. The door must be drilled top and bottom to accept the 1/4-20 UNC hex head machine screws which will fasten the door to the doorframe. A half-circle piece of steel must be welded by the screw opening, to allow only a socket wrench to be used. All doors shall be interchangeable. An alternate method of attachment using an internal hinge at the bottom of the door with a screw at the top of the door will be considered. Any alternate method will be subject to approval by the Commissioner or his duly authorized representative.

(i) Locking Device. Any other door locking device, other than the one outlined above in (g) and (h), must be approved by the Commissioner or his duly authorized representative.

(j) Tag. To each pole shall be attached immediately below the handhole, by mechanical means and not by adhesive, a stainless-steel tag with a 1/4" font stamped or embossed legend that must have three lines to include the pole outside diameter at the base,/(space),_GA(space)/ the overall length, i.e., 12.5"/ 3GA /34'-6". Second line to include pole manufacturer name, and third line to include pole manufacturer

initials-individual serial number-order number, i.e., VI-XXX-XXXXXX-X.

(k) Structural Requirements. The mast or shaft and base assembly must be designed to AASHTO "LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 1st Edition with 2017, 2018, 2019, 2020, and 2022 Interim Revisions". Light poles shall be designed for a three-second gust wind speed of 115 mph. The poles shall be designed appropriately for Chicago applications for both street lighting and traffic signal applications, including signal mast arms.

TOP

5. (a) Design. The mast top shall be essentially conical with a globe-shaped upper-end and having a minimum wall thickness throughout of not less than 1/4 inch. The cone portion must meet the skirted portion of the top in a smooth filet, the skirt must enclose the top 7/8" inches of the mast. Three stainless steel, or other similar approved material, set screws not less than 3/4 inches long must be equally spaced in tapped holes around the skirt and must hold the top securely in place atop the mast. The design of the top shall be similar to the one shown on Drawing #11420A.
- (b) Material. The top must be aluminum alloy 356-F per ASTM B108. It shall have smooth surfaces, neat edges and corners and be free from fins, holes or other casting flaws. Non-metallic tops may be substituted if approved by the Commissioner.
- (c) Finish. Tops shall be painted as herein specified.

HARDWARE

6. All the hardware necessary to complete the assembly of the pole shall be furnished. All hardware will be as specified elsewhere in these specifications. Hardware not specified elsewhere must be stainless steel meeting the requirements of ASTM A193, or equal corrosion-resistant non-seizing metal, or a non-metallic material subject to approval by the Commissioner.

WELDING

7. (a) General. Every welded joint shall be made in conformity with the proper interpretation of the standard welding symbols of the American Welding Society as indicated on the drawings; however, each bidder must submit with his proposal a drawing showing the sizes and types of welds, must state the type of electrode, and must describe the welding methods, he proposes to use in fabricating the pole. Fully documented Welding Procedure Specifications and supporting Procedure Qualification Test Records (if applicable) shall be submitted for approval prior to the start of work on all contract work. These procedures shall be accepted by the

Engineer and CDOT QA prior to the commencement of the work and shall remain valid provided consumables and parameters are not substituted. Welder Qualification Test Records and Continuity Records shall be provided to the inspector or Engineer at the time of request, inspection or included in the final documentation package.

(b) Testing. All welds shall be inspected for penetration and soundness of the welds by the magnetic particle inspection method, ultrasonic shear wave inspection or by radiography at the fabricators expense. Acceptance or rejection will be governed by the same conditions as in Section 9 of this document and the current edition of the AWS D1.1 Structural Welding Code-Steel for Cyclically Loaded Members. If the magnetic inspection process is to be used, the dry method with AC and half wave rectified DC currents shall be employed. All welds shall be magnetized by longitudinal magnetization provided the material is verified in all directions to ensure a full field has been obtained around the weld being tested. The fabricator shall submit the NDT Certifications, Written Practice, Written Procedures and Current Visual Acuity Records for approval prior to acceptance of the members.

(c) Personnel Qualification for Nondestructive Testing. Personnel performing NDT, other than visual examination, shall be certified in conformance with the American Society for Nondestructive Testing (ASNT) *Recommended Practice No. SNT-TC-1A* Personnel Qualification and Certification in Nondestructive Testing, Or an equivalent satisfactory to the engineer.

PAINTING

8. (a) Oil and Grease Removal. All metal surfaces shall be washed with an alkaline detergent to remove any oils or grease. All metal surfaces shall be cleaned in accordance with SSPC-SP1 after fabrication and before blasting and painting.

(b) Metal Cleaning. All exterior metal surfaces shall be cleaned by blasting with a combination of shot and grit to remove all dirt, mill scale, rust, corrosion, oxides and foreign matter and provide a "near white" surface in accordance with SSPC-SP10. Included in this process will be the interior base section of the mast to a minimum height of twelve (12) inches. The blast cleaning abrasive shall be dry and free of oil, grease, and other contaminants as determined by the test methods found in SSPC-AB 1, SSPC-AB 2, and SSPC-AB 3 per SSPC-SP10 sub section 6.3).

(c) Chemical Pretreatment. The cleaned metal surfaces shall then be treated with a hot, pressurized iron phosphate wash and shall be dried by convection heat.

(d) Primer Coat. All exterior surfaces are to be coated with corrosion-inhibiting zinc-rich aromatic urethane conforming to SSPC Paint 20, Type II. Dry film

thickness shall be a minimum of 2.5 mils (.0025"). The aromatic urethane shall consist of a zinc dust content not less than 83% by weight in dried film. The coating shall be airless spray applied and moisture cured.

(e) Finish Coat. All exterior surfaces are to be subsequently coated with aliphatic acrylic polyurethane paint, conforming to SSPC-36, to a minimum dry film thickness of 3.0 mils (.003"). The coating shall be airless-spray applied and cured in a gas-fired convection oven by heating the steel substrate to between 150° Fahrenheit and 220° Fahrenheit.

(f) Interior Coat. Interior surfaces are coated with red oxide rust inhibitive alkyd primer to a dry film thickness of 1.5 mils.

(g) Durability. Both the exterior and interior coats must be capable of passing 1,000 hours of salt spray exposure as per ASTM B117 in a 5% NaCl (by weight) solution at 95°F and 95% relative humidity without blistering. Before testing, the panel must be scribed with an "X" down to bare metal.

(h) Coating Measurement. Measurement of coating thickness must be done in accordance with SSPC-PA 2, "Measurement of Dry Paint Thickness with Magnetic Gauges," except that the lowest "single spot measurement" in an area of two square inches must be not less than 5.5 mils.

(i) Color. The color must be gloss black unless otherwise noted in the order. A color sample must be submitted for approval prior to fabrication.

(j) Alternate Methods. Alternate painting methods may be reviewed and tested on a case-by-case basis. However, no coating method will be accepted unless the Commissioner judges such alternate to be equal to the coating herein specified.

(k) Quality Control. The personnel performing the QC tests for this work shall be trained in coatings inspection and the use of the testing instruments. Documentation of training shall be provided. The QC personnel shall not perform hands on surface preparation or paint activities. Painters shall perform wet film thickness measurements, with QC personnel conducting random spot checks of the wet film.

Quality Control (QC) Program. The shop and field QC Programs shall identify the following: the instrumentation that will be used, a schedule of required measurements and observations, procedures for correcting unacceptable work, and procedures for improving surface preparation and painting quality as a result of quality control findings. The shop program shall include a copy of the QC form(s) that will be completed daily.

The instruments used to conduct paint inspections shall be calibrated by the Contractor's personnel according to the equipment manufacturer's recommendations and the Contractor's QC Program. All inspection equipment

shall be made available to the Engineer for QA observations on an as needed basis.

(l) Inspection Access. The Contractor shall facilitate the Engineer's observations as required, including allowing ample time to view the work. The Contractor shall furnish, erect, and move scaffolding or other mechanical equipment to permit close observation of all surfaces to be cleaned and painted. This equipment shall be provided during all phases of the work. Examples of acceptable access structures include the following.

(m) Weather Conditions. Coatings shall be applied within the temperature and relative humidity limits specified by the coating manufacturer's product data sheet. Work may be performed outside when the air speed is less than 5 mph (8 km/hr) and surface temperature is more than 5 °F (3 °C) above dew point. For indoor painting, adequate ventilation shall be provided. The surface of the steel shall be dry when the paint is applied. The relative humidity and ambient temperature ranges specified by the coating manufacturer for coating application shall be maintained for at least ten hours where steel is stored after painting is complete.

(n) Removal of Unsatisfactory Paint. If all or a portion of the coating shows significant or widespread defects, evidence of having been applied under unfavorable conditions, or poor workmanship, the Engineer may order it removed and steel cleaned and repainted. Areas where damage or defects are present, coatings shall be removed to soundly bonded paint and re-coated if necessary for adequate dry film thickness. Areas adjacent to the removal of unsatisfactory paint shall be feathered to provide a smooth transition between original and re-applied paint. Recoating shall be according to the manufacturer's written instructions, as accepted by the Engineer.

MAST TEST

9. (a) General. All completed masts shall be available for testing for maximum deflection and set. The masts shall meet the structural requirements of Section 4(k). Unless specifically authorized in writing, all tests shall be made at the works of the manufacturer. A record of every test must be made, and a certified copy of the test record must be submitted to the Commissioner before the masts are shipped.

(b) Lot. Tests for welds, deflection and set of the mast and of the mast arm supports shall be made upon three (3) masts of the first fifty (50) in every order. An additional one (1) mast shall be tested for each additional fifty (50) masts in the order. The selection of masts for testing shall be random from the entire completed lot. If any of the masts in any lot fail to meet the test, an additional three (3) masts of the same lot must be tested. If any of these masts fail to meet the test requirements, the entire lot will be subject to rejection, except that the manufacturer may subject each mast in the lot to the test, and those which fulfill the requirement will be accepted. After testing, each base weld shall be re-inspected by the magnetic particle method to determine that the welds have not been affected.

(c) Mast Requirements. With base rigidly anchored, a test load as indicated in Table A must be applied at a point approximately two feet (2'0") from the free end. The load must be applied at right angles to the center line of the mast and in the same vertical plane. The deflection must not be greater than that indicated in Table A. Within one (1) minute after the test load is released, measurement must be made of the set taken by the mast. This set must not be greater than that indicated in Table A. The deflection measurement device must be reset to zero and the test load must be reapplied. The deflection must not change from the deflection noted in the first test by more than $\pm 5\%$. No measurable set must be noted within one (1) minute after test load is released.

(d) Mast Arm Support (simplex) Requirements. With an appropriate mast arm firmly attached to the mast, a test load of 300 pounds must be applied to the mast arm as a side pull at a point seven (7) feet from the mast. After the test, the mast arm support welds on the mast must be tested by the magnetic particle method to determine that they have not been affected.

PACKAGING

10. (a) General. The poles must be shipped in twelve (12) pole bundles. Each pole must be individually wrapped so that the pole can be bundled for shipping and unbundled for delivery to the City without damaging the pole or its finish.

(b) Bundles. The bundles shall consist of twelve (12) poles laid base to top to form an approximately rectangular cylinder. Materials such as lumber (2" x 4" min.), non-marring banding, and other appropriate bundling materials must be used to make a rigid, long lasting, bundle capable of being handled, shipped and stored without shifting of contents or breaking, subject to approval. Any bundles, in which either poles or packaging is received broken, damaged or with contents shifted, will not be accepted and it will be the responsibility of the supplier to return the bundle to its original destination at no cost to the City of Chicago. The bundles should be capable of being stacked two (2) high without breaking or shifting of the contents. Each bundle must be capable of being lifted by a forklift truck or crane and the bundles must be shipped on a flatbed truck to facilitate unloading. Each pole wrapping must be clearly labeled indicating the pole size, i.e. 34'6", 7 GAUGE, STEEL POLE, 15" B.C.

(c) Hardware. The bolt covers and their attachment devices must be shipped with each bundle and packaged in twelve (12) sets of four (4) each. The package must be labeled and placed in a prominent position to facilitate accessibility, and must be attached to, or within, the bundle in such a manner as to assure safe delivery. Payment will be withheld for any bundle delivered without the accompanying hardware. Pole caps must be attached at the manufacturer's facilities or be packed separately in a manner similar to the bolt covers, and the same payment conditions will prevail. Cracked, broken or chipped parts will be

considered as an incomplete delivery as regards payment.

SHIPMENT

11. (a) Final Documentation Packages shall be presented with the applicable signed and stamped Material Submittal form as the cover page. This package shall include the following information as applicable: Certified Certificates of Conformance from the Manufacturer, Visual Inspection Reports, NDT Reports, Coating Reports, Welder Qualification Test Records with Continuity Logs, Certificates of Conformance for the Coating Material, Certified Material Test Reports with full traceability to the melt origin.

TABLE A

POLE	GAUGE	BOLT CIRCLE	ANCHOR ROD	BASE P L A T E	TEST L O A D	M A X. D E F	M A X. S E T	D R A W I N G
7.67"x12.5" x34'6"	3	16.5"	1.5"	1.75"	3200#	22"	2.5"	827
6.17"x11"x 34'6"	3	17.25"	1.25"	1.5"	2500#	26"	2.5"	824
5.17"x10.0" x34'6"	3	15.0"	1.25"	1.5"	2000#	30"	2.5"	808
5.17"x10.0" x34'6"	7	15.0"	1.25"	1.5"	1500#	30"	2.5"	808
3.95"x8.5"x 32'6"	3	11.5"	1.25"	1.5"	1500#	33"	2.5"	763
3.95"x8.5"x 32'6"	7	11.5"	1.0"	1.25"	1200#	33"	2.5"	762
4.15"x8.0"x 29'6"	7	15.0"	1.0"	1.25"	1500#	28"	1.0"	988
4.15"x8.5"x 32'6"	3	15.0"	1.25"	1.25"	1200#	28"	1.0"	988

ELECTRICAL SPECIFICATION 1452

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
REVISED JANUARY 9, 2024**

POLE: ANCHOR BASE, ALUMINUM, TAPERED TUBULAR SHAFT

SUBJECT

1. This specification states the requirements for tapered, tubular, aluminum anchor base poles. They will support street light luminaires mounted on either truss type arms or davit style arms. The poles will be served by underground cables.

GENERAL

2. (a) Specifications. The poles shall conform in detail to the requirements herein stated, and to the requirements of the following organizations as cited herein:

Aluminum Association (AA)
American Association of State Highway and Transportation Officials (AASHTO)
American National Standards Institute (ANSI)
American Society for Testing and Materials (ASTM)
American Welding Society (AWS)
Society for Protective Coatings (SSPC)

- (b) Acceptance. Poles not conforming to this specification will not be accepted. The Commissioner will be the sole judge in determining if the poles meet this specification.
- (c) Bidders Drawings. Bidders must submit with their bids detailed scale drawings of the mast showing actual dimensions, details, and welds. Shop drawings must be original engineering drawings created by the manufacturer. The drawings must show every dimension necessary to show how all parts will fit each other and be properly held in assembly. These drawings must also be submitted in electronic format, in the latest version of either MicroStation or AutoCAD, if so requested by the City.
- (d) Standard Drawings. The drawings mentioned herein are drawings of the Department of Transportation being an integral part of this specification cooperating to state necessary requirements.
- (e) Sample. If requested by the Chief Procurement Officer, one completely assembled

anchor-base pole of the manufacture intended to be furnished, must be submitted for review by the Commissioner within fifteen (15) business days after receipt of notice.

- (f) **Warranty.** The manufacturer shall warrant the performance and construction of the light poles to meet the requirements of this specification and shall warrant all parts, components, and appurtenances against defects due to design, workmanship, or material developing within a period of five years after the light poles have been delivered. This will be interpreted particularly to mean structural or mechanical failure of any element or weld, or any faults in the anodized surfaces. The warranty must be furnished in writing guaranteeing material replacement including shipment, free of charge to the City. The Commissioner will be the sole judge in determining which replacements are to be made. The Commissioner's decision will be final.

STANDARDS

- 3. (a) **Assembly.** Each anchor base pole shall consist of an aluminum mast with handhole entry, aluminum hinged entry door, grounding nut, mast base plate, top cap for non-davit masts, bolt covers, and all necessary hardware required for complete assembly of these parts, ready for assembly, without special tools.
- (b) **Interchangeability.** Members of each pole type must be mutually interchangeable for assembly, so that no reworking will be required to make any member fit properly in the place of any other similar member of any other similar pole.
- (c) **Design.** Each pole type must conform in design and dimensions to the pertinent drawing(s) listed in Table A.

MASTS

- 4. (a) **Mast Size.** The outside diameters of the mast of each pole type shall be as listed in Table A. The mast taper will be approximately 0.14 inches per foot.
- (b) **Material.** The shaft must be fabricated from one length of 6063-T4 wrought aluminum alloy meeting the requirements of ASTM B221. After all welding operations are completed, the mast must be brought to a T6 temper having minimum physical characteristics of ASTM B221. The wall thickness of the shaft and the diameter of the shaft shall be as listed in Table A and as shown on the appropriate standard drawing. Material certification shall be provided from the tube manufacturer.
- (c) **Fabrication.** The mast must be fabricated with no longitudinal or lateral welds in the tube. The completed masts must have smooth external surfaces free from protuberances, dents, cracks, or other imperfections marring their appearance. Each mast must be straight and centered on its longitudinal axis.

- (d) Base. The mast base must be a permanent mold aluminum casting conforming to the requirements for aluminum alloy 356-T6 of ASTM B-108 or ASTM B-26. The base shall be similar in shape and dimensions to that shown on the appropriate standard drawing for the specific mast. The base shall consist of a collar, flange, and any other members necessary to provide strength and reduce the concentration of anticipated stresses. The shaft must extend into the base as shown on the appropriate standard drawing and be circumferentially welded to the base casting at the top outer surface and the lower inner surface of the base. Bases must be attached to the mast so that the bearing surface of the base is at right angles to the longitudinal axis of the mast.

Non-metallic removable bolt covers which completely cover the anchor bolts and nuts must be provided. The covers must be attached with stainless steel screws or another type of non-seizing fastener, as approved by the Commissioner. The covers must enclose the anchor bolts and be secured in an approved manner.

All anchor rod openings for each pole type must have a width as listed in Table A. Each opening must be sized to have a circumferential slot length equal to 15° of the circumference.

- (e) Cable Entry for Conventional Poles. An opening of approximately one and one quarter inches (1-1/4") in diameter, rimmed with a rubber or nylon grommet, must be furnished and installed at the point on the shaft where the clamp on the upper member of the mast arm bracket meets the pole. Certain masts may require two cable entries, depending on the order. There will be no extra compensation for the extra cable entry. This cable entry requirement does not apply to pole masts designed for davit style arms. This requirement does apply to conventional poles (Drawings 890 and 938).
- (f) Option: Side Mount for Luminaire. If requested, the pole mast will be prepared for the mounting of a sidewalk-side luminaire. An opening of approximately one and one-quarter inches (1-1/4") in diameter, rimmed with a rubber or nylon grommet, must be furnished and installed at the proper height, as indicated on the appropriate standard drawing, or as directed in the order. In addition, two (2) holes must be drilled to accept two (2) rivnuts for mounting a City back plate for a mid-mount luminaire. All three (3) holes must be properly spaced and aligned to accept the City standard back plate for the appropriate mid-mount luminaire. The rivnuts (3/8-16) must be inserted in the pole. The holes must be properly aligned with the handhole as indicated on the standard drawings.
- (g) Top of Shaft for Davit Arm. The top one foot of the mast shall be formed as shown on the appropriate standard drawing. An adapter ring may be provided if required. Two sets of holes 9/16 inches in diameter must be drilled through the mast to accommodate two bolts to attach a davit arm. The lower set (two holes) must be in line with the mast arm. The other set must be 90° apart from the other. These

requirements apply to pole masts designed for davit style arms.

- (h) Provision for Ground. A tapped hole must be provided on an extension or offset, centered on the handhole door frame's interior vertical surface, to accept a 1/2"-13 bolt for a ground connection.
- (i) Entry. A vertical doorframe for reinforcing a door opening which provides access to the interior of the mast must be welded on the inside of the pole and be centered approximately 18 inches above the bottom of the base. The doorframe must be formed and welded of aluminum alloy 6063-T6 with a cross-section to adequately reinforce the opening of the mast. The doorframe must be as indicated on the appropriate standard drawing. The actual door opening must be sized to perfectly match the door size. For all arterial poles and for all conventional poles, the vertical centerline of the entry must be at a right angle clockwise to the vertical centerline of the mast arm. For the residential davit poles, the vertical centerline of the entry must be in-line with the vertical centerline of the mast arm. An internal flange must be welded to the inside of the pole at the bottom of the door opening. This flange will be drilled to accept a bolt. The bolt will be used to attach a hinged door to the pole. An aluminum tab must be welded to the inside upper portion of the door opening. A hole must be drilled into the tab that will accept a 1/4-inch screw. The hole must be centered horizontally in the door opening and must be centered 3/8 of an inch down from the uppermost portion of the door opening. A steel spring clip must be mounted to the tab. The clip must be made to accept a 1/4"-20 machine screw.
- (j) Door. The removable door must be formed of the same aluminum as the pole. The door must fit the pole opening within a tolerance of 1/8 of an inch. The door must be flushed with the pole surface in the closed position and appear as part of the original mast. The door must be attached to an internal hinge which will allow the door to open out and down. The hinge must be bolted to a flange on the inside of the pole at the bottom of the door opening, so that the door and hinge may be unbolted and replaced if need be. The door opening must be sized according to the appropriate standard drawing. A hole must be drilled in the top of the door in alignment with the hole in the mast. A 1/4"-20 Allen head button machine screw must be provided to fasten the door to the doorframe. The screw must have a stainless-steel core with a nylon threaded body. Other types of non-seizing fasteners may be considered. All doors of the same size must be interchangeable. The door and attachment method will be subject to approval by the Commissioner or his duly authorized representative.
- (k) Tag. To each pole shall be attached immediately below the handhole, by mechanical means and not by adhesive, a stainless-steel tag with a 1/4" font stamped or embossed legend which must have three lines to include the pole outside diameter at the base,/(space),_GA(space)/ the overall length, i.e., 12.5"/ 3GA /34'-6". Second line to include pole manufacturer name, and third line to include pole manufacturer initials-individual serial number-order number, i.e., VI-XXX-

XXXXXX-X.

- (l) Structural Requirements. The mast or shaft and base assembly must be designed to AASHTO “LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 1st Edition with 2017, 2018, 2019, 2020, and 2022 Interim Revisions”. Light poles shall be designed for a three-second gust wind speed of 115 mph.

TOP CAP FOR NON-DAVIT POLES

5. The top cap shall be aluminum alloy. It must have smooth surfaces, neat edges and corners and be free from fins, holes, or other casting flaws. Three stainless steel set screws not less than 3/8 inches long must be equally spaced in tapped holes around the skirt to securely hold the top in place.

VIBRATION DAMPER

6. Each pole shaft will have an internal vibration damper, if requested, located at a position as shown on the appropriate standard drawing. The vibration damper must be welded or bolted to the inside of the pole shaft. If the standard drawing does not show a vibration damper none should be provided. The design of the vibration damper is subject to approval by the Commissioner or his representative.

HARDWARE

7. All the hardware necessary to complete the assembly of the pole must be furnished. All hardware will be as specified elsewhere in these specifications. Hardware not specified elsewhere must be stainless steel, or equal corrosion-resistant non-seizing metal, or a non-metallic material subject to approval by the Commissioner.

WELDING

8.
 - (a) General. Every welded joint shall be made in conformity with the proper interpretation of the standard welding symbols of the American Welding Society as indicated on the drawings. Each bidder must submit with his proposal a drawing showing the sizes and types of welds, must state the type of electrode, and must describe the welding methods he proposes to use in fabricating the pole.
 - (b) Testing. All welds of five percent (5%) of the poles in every lot must be inspected for penetration and soundness of the welds by radiography, or by a penetrant method. Acceptance or rejection will be governed by the same conditions as in the TESTING Section.
 - (c) Certifications. Welders must have proper certification for the welding operations required. Welding by non-certified personnel will not be allowed. Certifications must be available

upon request.

FINISH

9. (a) General. All completed masts shall have a brushed satin natural finish or an anodized finish, as required by the project or in the purchase order.
- (b) A satin aluminum finish requires that each mast be rotary sand finished. The satin finish shall be accomplished by using 40-50 grit belts to remove taper marks and scratches. A minimum of one pass with a 120-grit belt over the entire shaft is required to provide a uniform appearance.
- (c) An anodized finish will be either matte black or semi-gloss black. A color sample must be submitted for approval before any factory production. The anodizing process must include cleaning, etching, anodizing, and sealing the mast. The etching process must meet the requirements of AA-C22. The anodizing process must meet the requirements of AA-A42. The contractor must submit his anodizing process for approval before any factory production.

MAST TEST

10. (a) General. All completed masts shall be available for testing for maximum deflection and set. The masts must meet the structural requirements of Section 4(l). Unless specifically authorized in writing, all tests must be made by the manufacturer. A record of every test must be made, and a certified copy of the test record must be submitted to the Electrical Section of the Division of Engineering before the masts are shipped.
- (b) Lot. Tests for deflection of the mast must be made upon five (5%) percent of all the masts in every lot (two (2) min.). The selection of masts for testing must be random from the entire completed lot. If any of the masts in any lot fail to meet the test, an additional three (3%) percent of the masts of the same lot must be tested (two (2) min.). If any of these masts fail to meet the test requirements, the entire lot will be subject to rejection, except that the manufacturer may subject each mast in the lot to the test, and those which fulfill the requirement will be accepted. After testing, each base weld must be inspected by radiography or the penetrant method to determine that the welds have not been affected. After testing, no permanent set should be visible or apparent. The mast should appear straight.
- (c) Mast Requirements. With base rigidly anchored, a test load of 500 pounds must be applied at a point approximately eighteen inches (18") from the free end. The load must be applied at right angles to the center line of the mast and in the same vertical plane. With no failure of any component part, the deflection must not be greater than 7.5% of the pole height. After removal of the load, the deflection measurement device must be reset to zero and the test load must be reapplied. The deflection must not change from the deflection noted in the first test by more than $\pm 5\%$.

PACKAGING

11. (a) General. The poles must be shipped in bundles. Each pole or bundle shall be wrapped so that the poles can be handled and stored without damage to the surfaces.
- (b) Bundles. The poles in each bundle must be laid base to top to form an approximately rectangular cylinder. Materials such as lumber (2" x 4" min.), non-marring banding, and other appropriate bundling materials must be used to make a rigid, long lasting, bundle capable of being handled, shipped and stored without shifting of contents or breaking. Any bundles, in which either poles or packaging is received broken, damaged or with contents shifted, will not be accepted and it will be the responsibility of the supplier to return the bundle to its original destination at no cost to the City of Chicago. The bundles should be capable of being stacked two (2) high without breaking or shifting of the contents. Each bundle must be capable of being lifted by a forklift truck or crane and the bundles must be shipped on a flatbed truck to facilitate unloading.
- (c) Hardware. The bolt covers and their attachment devices must be shipped with each bundle. The package must be labeled and placed in a prominent position to facilitate accessibility, and must be attached to, or within, the bundle in such a manner as to assure safe delivery. Payment will be withheld for any bundle delivered without the accompanying hardware. Pole caps must be attached at the manufacturer's facilities, or be packed separately in a manner similar to the bolt covers, and the same payment conditions will prevail. Cracked, broken or chipped parts will be considered as an incomplete delivery as regards payment.

TABLE A

POLE	T H I C K N E S S	BOLT CIRCLE	ANCHOR ROD	BASE P L A T E	M A X. D E F L	D R A W I N G
7"x4.5"x12'-5"	.156"	10"	1.0"	0.75"	11"	940
7"x4.5"x20'-0"	.156"	10"	1.0"	0.75"	18"	890
8"x4.5"x27'	.312	11.5"	1.0"	0.75"	26"	975
10"x6"x24'-5"	.312"	15"	1.25"	1.25"	22"	941
10"x6"x27'-10.5"	.312"	15"	1.25"	1.25"	25"	938
10"x6"x29'-4.625"	.312"	15"	1.25"	1.25"	27"	971
10"x6"x29'-4.625"	.312"	16"	1.25"	1.25"	27"	971
10"x6"x34'-4.625"	.312"	15"	1.25"	1.25"	31"	972

ELECTRICAL SPECIFICATION 1453

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
REVISED JANUARY 10, 2024**

MAST ARMS: ALUMINUM, TRUSS TYPE AND DAVIT TYPE

SUBJECT

1. This specification covers the requirements for aluminum mast arms for supporting street light luminaires. The aluminum arms will be supported by aluminum light poles.

GENERAL

2. (a) Specifications. The mast arms shall conform in detail to the requirements herein stated and to the requirements of the following organizations as cited herein:

Aluminum Association (AA)
American Association of State Transportation and Highway Officials (AASHTO)
American National Standards Institute (ANSI)
American Society for Testing and Materials (ASTM)
American Welding Society (AWS)
Society for Protective Coatings (SSPC)
- (b) Acceptance. Mast arms not conforming to this specification will not be accepted. The Commissioner will be the sole judge in determining if the arms meet this specification.
- (c) Bidders Drawings. Bidders must submit with their bids detailed scale drawings of the mast arm and bracket attachment proposed to be welded to the mast arm as the means for attaching these mast arms to poles. For davit arms, drawings must show how the davit is attached to the top of the light pole and is secured. The drawings must give every dimension necessary to show how the parts will fit each other and be properly held in assembly. These drawings must also be submitted in electronic format, in the latest version of either MicroStation or AutoCAD, if so requested by the City.
- (d) Drawings. The drawings mentioned herein are drawings of the Department of Transportation being an integral part of this specification cooperating to state the necessary requirements.

- (e) Sample. If requested by the Chief Procurement Officer, one complete mast arm of the manufacture intended to be furnished, must be submitted within fifteen (15) business days upon receipt of such request.
- (f) Warranty. The manufacturer shall warrant the performance and construction of the mast arms to meet the requirements of this specification and shall warrant all parts, components, and appurtenances against defects due to design, workmanship, or materials, developing within a period of five years after the mast arms have been delivered. This will be interpreted particularly to mean structural or mechanical failure of any element or weld, or any faults in the anodized surfaces. The warranty must be furnished in writing guaranteeing material replacement including shipment, free of charge to the City. The Commissioner will be the sole judge in determining which replacements are to be made. The Commissioner's decision will be final.
- (g) Structural Requirements. The mast arm assembly must be designed to AASHTO "LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 1st Edition with 2017, 2018, 2019, 2020, and 2022 Interim Revisions". Light poles shall be designed for a three-second gust wind speed of 115 mph. The arms shall be designed for Chicago Street lighting applications. The arm manufacturer must provide structural calculations that verify that the arms are designed properly.

TRUSS ARM DESIGN

- 3. (a) Each mast arm must be a truss type fabricated of two (2) inch "standard" aluminum pipe or tube 6063-T4 alloy conforming to the requirements of ASTM B429, or ASTM B221, or other approved design. The arm must be heat treated to a T-6 temper after fabrication and welding.
- (b) Mast Arm Attachment. The mast must be attached to the pole by means of an extruded aluminum clamp with a bolting arrangement to hold the arm firmly in place. The extrusion must be aluminum alloy 6061-T6 conforming to the requirements of ASTM B221, B308, or an approved equal. The clamps shall be designed to securely fasten the mast arm to the pole so that the arm cannot be dislodged vertically or horizontally from its intended position on the pole by wind gusts, vibrations, or other normally anticipated natural phenomena.
- (c) Dimensions. The truss type arm must have the dimensions indicated on Standard Drawing 943 or Standard Drawing 944 for the appropriate arm specified. Truss arms will be available in nominal horizontal lengths of 4-foot, 6-foot, 8-foot, 12-foot, and 15-foot, with either 4.5 inch or 6-inch clamps. The distance between the lower and upper members, measured between the vertical centers of the upper and lower attachment plates, must be 1'-9". With the arm attached to the pole intended to be supplied, the vertical rise from the center of the top attachment plate to the horizontal centerline of the end of the arm must be no greater than 2'-8". The

horizontal axis of the free end of the upper member, when attached to the pole, must not exceed 3° above the true horizontal without the luminaire weight, nor be less than 1/2° above the true horizontal with a 35 lb. weight supported at the free end of the arm.

- (d) Mating of Members. The upper and lower members shall be mated in such a manner as to assure that they will not separate due to vibration, weather conditions such as high wind gusts, icing, etc., or any other normally anticipated stress condition.
- (e) Interchangeability. Members of each truss arm size must be mutually interchangeable for assembly, so that no reworking will be required to make any member fit properly in the place of any other similar member of any other similar arm.

DAVIT ARM DESIGN

- 4. (a) Each arm must be fabricated from either 4.5-inch diameter or 6.0-inch diameter aluminum tubing of 6063-T4 alloy. After all fabrication and welding, the arm must be heat treated to a T6 temper.
- (b) The arm must be attached to the mast by slipping the bottom of the arm tube over the top of the mast. The arm must have four (4) holes pre-drilled at its base to accommodate two (2) through bolts set 90° apart, as shown on the Standard Drawings. The bottom bolt will be in direct line with the length of the arm. The holes must match the holes in the mast so that after assembly the arm and mast appear as a single continuous unit. When bolted to the pole, the arm must not shift or become dislodged by wind gusts, vibrations, or other phenomena.
- (c) The davit arm must be dimensioned as indicated on Standard Drawing 945, 946, 948, 949, or 950, for the appropriate arm specified. Davit arms must be available in nominal horizontal lengths of 8-foot and 12-foot for the 4.5-inch pole tops. Davit arms must be available in nominal lengths of 8-foot, 12-foot, and 15-foot for 6-inch pole tops. Davit arms will be single or twin as specified. A 2 3/8-inch diameter tenon will be attached to the end of each arm. The horizontal axis of the tenon, when the arm is attached to the pole, must not exceed 3° above the true horizontal without the luminaire weight, nor be less than 1/2° above the true horizontal with a 35 lb. weight supported by the tenon.
- (d) Interchangeability. All davit arms for a 4.5-inch pole top must be interchangeable with each other. The same is required of davit arms for a 6-inch pole top.

WELDING

- 5. (a) General. Every welded joint shall be made in conformity with the proper interpretation of the standard welding symbols of the American Welding Society

as indicated on the drawings. Each bidder must submit with his proposal a drawing showing the sizes and types of welds, must state the type of electrode, and must describe the welding methods he proposes to use in fabricating the arms.

- (b) Testing. All welds of five percent (5%) of the arms in every lot must be inspected for penetration and soundness of the welds by radiography or by penetrant inspection. Acceptance or rejection will be governed by the same conditions as in the TESTING Section.
- (c) Certifications. Welders must have proper certification for the welding operations required. Welding by non-certified personnel will not be allowed. Certifications must be made available upon request.

FINISH

- 6. (a) General. All completed arms shall have a brushed satin natural finish or an anodized finish, as required by the project or in the purchase order.
- (b) A satin aluminum finish requires that each arm be rotary sand finished. The satin finish shall be accomplished by using 40-50 grit belts to remove taper marks and scratches. A minimum of one pass with a 120-grit belt over the entire arm is required to provide a uniform appearance.
- (c) An anodized finish will be either matte black or semi-gloss black. A color sample must be submitted for approval before any factory production. The anodizing process must include cleaning, etching, anodizing, and sealing the aluminum arm. The etching process must meet the requirements of AA-C22. The anodizing process must meet the requirements of AA-A42. The contractor must submit his anodizing process for approval before any factory production.

HARDWARE

- 7. All hardware furnished for attachment of mast arm to pole must be series 300 stainless steel. All hardware necessary to complete the assembly of the arm to the pole must be provided.

MAST ARM TESTS

- 8. (a) General. Five percent (5%) of the mast arms of each size in every order shall be tested for structural integrity.
- (b) Tests. The mast arms, when securely attached to a suitable and proper supporting structure, must withstand a horizontal (sideward) pulling force as indicated in Table A, and a vertical (downward) load as indicated in Table A. These loads may be applied independently. Each load must be applied at the end of the arm without any apparent permanent set, or damage to the welds joining the arm and mast arm

attachment. The appropriate loading for each arm is indicated in Table A. On twin arms each arm extension must be tested.

- (c) Rejection. If the mast arms fail to meet the test, an additional three percent (3%) of the mast arms in the same lot must be tested. If any of these mast arms fail to meet the test requirements, the entire lot will be subject to rejection, except that the manufacturer may subject each mast arm in the lot to the test, and those which fulfill the requirements will be accepted.
- (d) All mast arms must meet the structural requirements of Section 2(g). All tests shall be certified by the manufacturer. Test results should be submitted to the Electrical Section of the Division of Engineering, upon request.

PACKAGING

- 9. (a) General. The mast arms must be shipped in bundles. Each arm or bundle shall be wrapped so that the arms can be handled and stored without damage to the surfaces.
- (b) Bundles. The bundles shall consist of fifty (50) to seventy-five (75) arms laid to form a rectangular bundle. Materials such as lumber (2"x4"), stainless steel banding, and other appropriate bundling materials must be used to make a rigid, long lasting, bundle capable of being handled, shipped, and stored without shifting of contents or breaking, subject to approval. Any bundles, in which either the arms or packaging, is received broken, damaged, or with contents shifted, will not be accepted, and it will be the responsibility of the supplier to return the bundle to its original destination at no cost to the City of Chicago. The bundles should be capable of being stacked two (2) high without breaking or shifting of the contents. Each bundle must be capable of being lifted by a forklift truck or crane and the bundles must be shipped on a flatbed truck to facilitate unloading.
- (c) Hardware. The clamp backs and mounting hardware must be attached to the clamp fronts on the end of the arm and must be shipped with each mast arm bundle. Mounting hardware for the davit arms must be packed and shipped with each davit arm bundle. Payment will be withheld for any bundle delivered without the accompanying hardware. Cracked, broken or chipped parts will be considered as an incomplete delivery as regards payment.

TABLE A

ALUMINUM ARM	HORIZONTAL LOAD	VERTICAL LOAD	DRAWING #
Truss 4.5"x 4'	100#	250#	943
Truss 4.5"x 6'	100#	250#	943
Truss 4.5"x 8'	100#	250#	943
Truss 4.5"x 12'	100#	250#	943
Truss 4.5"x 15'	100#	250#	943
Davit 4.5"x 8'	100#	250#	945
Davit 4.5"x 12'	100#	200#	946
Davit 6.0"x 8'	100#	250#	948
Davit 6.0"x 12'	100#	250#	949
Davit 6.0"x 15'	100#	250#	950

ELECTRICAL SPECIFICATION 1457

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
REVISED JUNE 26, 2023**

**CABLE: SERVICE ENTRANCE, THREE INSULATED
CONDUCTORS IN ONE OVERALL JACKET, 600 VOLT**

SUBJECT

1. This specification states the requirements for a three conductor (two power conductors and one neutral conductor). Each conductor shall be insulated with either ethylene propylene rubber (EPR) or irradiated cross-linked polyethylene (XLPE). The overall jacket shall be either chlorinated polyethylene (CPE) or cross-linked polyolefin (XLPO). the cable shall be used on Commonwealth Edison service poles for the purpose of providing secondary power feeds from Commonwealth Edison to a City disconnect mounted on the pole for street lighting or traffic signal circuits.

GENERAL

2. (a) Specifications. The cable shall conform in detail to the requirements herein stated, and to the applicable portions of the specifications and methods of test of the following agencies:
 - (1) ICEA Specification S-95-658
 - (2) IEEE Standard 383
 - (3) ASTM Standard E-662-79
 - (4) ASTM Standard D-470-81
 - (5) UL 44
 - (6) UL 854
- (b) Acceptance. Cable not conforming to this specification will not be accepted.
- (c) Sample. If so requested, a three (3) foot sample of the cable intended to be provided under this contract must be submitted to the Engineer of Electricity within fifteen (15) business days after receipt of such a request from the Chief Procurement Officer.
- (b) Warranty. The contractor shall warrant the cable to be first class material throughout. The contractor will be responsible for any cable failing during normal use within one (1) year after the date of acceptance by the City. The contractor shall provide material replacement for any failed cable. There shall be no cost to the City. All replacements must be made free of charge F.O.B. delivery point of

original contract.

CABLE

3. (a) Construction. The cable shall consist of three (3) conductors separately insulated and color coded. Suitable fillers must be used to produce essentially a round cross section in the completed cable. The insulated conductors must be cabled with a suitable left hand lay in conformance with the latest revision of ICEA S-95-658. A binder tape must be used over the cabled conductor assembly and a jacket of either CPE or XLPO applied overall.
- (b) Marking. The color of the neutral conductor shall be white; that of the phase conductors shall be black and red, respectively. The jacket shall be black.

The cable shall be identified by a permanently inscribed legend in white lettering as follows:

3/C - No. (conductor size) AWG-600V-90°C-EPR/CSPE or EPR/PVC-manufacturer's name- month/year of manufacture

The legend shall be repeated at approximately eighteen (18) inch intervals on the outside surface of the cable parallel to the longitudinal axis of the conductor. Alternate markings shall be considered.

- (c) Each conductor shall consist of a round copper wire with a tight fitting, free stripping, concentric layer of either EPR or XLPE insulation. The cable shall be rated for continuous duty at 90°C operating temperature, wet or dry, 130°C emergency overload temperature and 250°C short circuit temperature.

CONDUCTOR

4. (a) Material. The conductor shall bare soft round copper wire.
- (b) Specifications. The conductor must meet the requirements of ASTM B3 and B8 for stranded Class B copper.
- (c) Size. The conductor size shall be as stated in the proposal or on the plans.

INSULATION

5. (a) Type. The insulation shall be either ethylene propylene rubber (EPR) or irradiated cross-linked polyethylene (XLPE) meeting the physical and electrical requirements specified herein.
- (b) Thickness. The insulation must be circular in cross-section, concentric to the conductor, and must have an average thickness not less than 30 mils (.030") for #14

AWG, 55 mils (.055") for #4 AWG, 65 mils (.065") for #2 AWG, 80 mils (.080") for #1/0 AWG, 80 mils (.080") for #2/0 AWG, and a spot thickness not less than ninety percent (90%) of the average thickness.

JACKET

6. (a) Type. The jacket shall be either chlorinated polyethylene (CPE) or cross-linked polyolefin (XLPO) meeting the physical and electrical requirements specified herein.
- (b) Thickness. The jacket must be circular in cross-section, concentric with the insulation, must have an average thickness not less than 45 mils (.045") for #14 AWG, 80 mils (.080") for #2 and #4 AWG, and not less than 95 mils (.095") for #1/0 and #2/0 AWG, and a spot thickness not less than ninety percent (90%) of the average thickness.

PACKAGING

7. (a) Reels. The completed cable shall be delivered on sound substantial, non-returnable reels. Both ends of each length of cable must be properly sealed against the entrance of moisture and other foreign matter by the use of clamp-on cable caps. The ends must be securely fastened so as not to become loose in transit. Before shipment, all reels must be wrapped with cardboard or other approved wrapping.
- (b) Footage. Each reel must contain 1,000 foot of cable for either #4 AWG or #2 AWG and 500 feet of cable for #1/0 AWG or #2/0 AWG. A tolerance limit of plus or minus ten percent ($\pm 10\%$) shall be adhered to.
- (c) Reel Marking. A metal tag must be securely attached to each reel indicating the reel number, contract number, date of shipment, gross and tare weights, description of the cable and the total footage.

TABLE 1 - THREE CONDUCTOR SERVICE ENTRANCE CABLE

Size (AWG)	Overall Diameter (mils)	No. Of Strands	Test Volts (KV)	Footage per Reel	Insulation (mils)	Jacket (mils)
4	950	7	4.5	1000	55	80
2	1100	7	4.5	1000	65	80
1/0	1400	19	5.5	500	80	95
2/0	1800	19	5.5	500	80	95

ELECTRICAL SPECIFICATION 1458

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
REVISED MARCH 4, 2014**

ELECTRICAL MANHOLE FRAMES AND COVERS 24 INCH AND 30 INCH DIAMETER

SCOPE

1. This specification describes the requirements for both 24 inch and 30 inch round frames and covers. These frames and covers will be used for electrical manholes and handholes and will provide access to the interior of the manholes and handholes. The 24 inch frames and covers will be used in parkway and sidewalk areas. The 30 inch frames and covers will be used in streets and in driveways and will provide sufficient strength to withstand normal traffic conditions.

GENERAL REQUIREMENTS

2.
 - (a) Conformance. The manhole frames and covers shall conform with every detail of the requirements herein stated and to the specifications and methods of test of the American Society for Testing and Materials cited by ASTM Designation Number in which the most recently published revision will govern.
 - (b) Acceptance. Frames and covers not conforming to this specification will not be accepted. The Commissioner of Transportation will have the final say as to whether or not the frames and covers meet specifications.
 - (c) Drawings. The drawings mentioned herein are drawings of the Department of Transportation, Division of Engineering, and must be interpreted as part of these specifications.
 - (d) Sample. Upon request, one complete manhole frame and cover of the manufacture intended to be furnished must be submitted within fifteen (15) business days after

receipt of such a request from the Chief Procurement Officer. The samples must be delivered to the Division of Electrical Operations, 2451 South Ashland Avenue, Chicago, Illinois.

- (e) Warranty. The manufacturer shall warrant that the frames and covers meet the specifications and warrant the frames and covers for a period of one (1) year from the date of delivery against defects which may occur during that period from normal and customary use. Any frame or cover which fails during this period must be replaced by the manufacturer at no cost to the City.

DESIGN

- 3. (a) The frames and covers shall each conform in detail to the designs shown on Drawings 872, 874 and 10927.
- (b) Each frame and cover shall weigh approximately as shown on the drawings.
- (c) Machining. The bearing surfaces of both the cover and the frame shall be machine finished as indicated on the drawings.
- (d) Workmanship. The frames and covers must be mutually interchangeable size for size, so that each lid will fit every frame neatly without jamming and with only such clearance as the drawings indicate. In addition, 24" & 30" covers must fit existing 24" & 30" frames, as shown on drawings 872, 874 and 10927. The castings shall be neat, true to pattern and free from cracks and casting flaws. No welding of defective castings will be permitted nor must the castings be painted.
- (e) Material. The frames and covers must be made of Class 30 Cast Iron described in the specifications for Gray Iron Castings of ASTM A48. No plugging of defective castings will be permitted.

TESTS

- 4. (a) Test bars of the metal used for the castings shall be made and tested for tensile and transverse strength in accordance with ASTM A48. The metal must be tested at the works of the manufacturer. The manufacturer must furnish a certified copy of all test data sheets to the City prior to delivery of the castings. Frames and covers shall each be

considered a separate casting for determining the requirement of testing.

ELECTRICAL SPECIFICATION 1462

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
REVISED NOVEMBER 21, 2014**

RIGID STEEL CONDUIT (HOT DIPPED GALVANIZED)

SCOPE

1. This specification describes rigid steel conduit, zinc coated. This specification also describes rigid steel conduit that is both zinc and PVC coated. The conduit will be used underground or on structure as a raceway for electrical cables.

GENERAL REQUIREMENTS

2.
 - (a) Rigid steel conduit must be zinc coated by the hot-dip process. Conduit must be furnished in 10 foot lengths, threaded on each end and with one coupling attached to one end and a protective cap at the other end.
 - (b) The conduit shall be manufactured according to Underwriters Laboratories Standard U.L. - 6 and must meet ANSI Standard C 80.1 and the requirements of NEC Article 344. In addition, conduit must be recognized as an equipment grounding conductor as per NEC Article 250. There will be no exceptions to meeting these standards.
 - (c) Acceptance. Conduit not conforming to this specification will be rejected. The Commissioner will be the final judge in determining if the conduit meets the specification.
 - (d) Sample. If requested by the Chief Procurement Officer, a sample of conduit must be submitted to the Engineer of Electricity within fifteen (15) business days of receipt of such a request.

- (e) Warranty. The manufacturer shall warrant the construction and performance of the conduit to meet the requirements of this specification and shall warrant all parts and components against defects due to design, workmanship, or material developing within a period of one (1) year after the conduit has been delivered.

(f) **STEEL**

3. Conduit shall be formed from steel suitable for use as an electrical raceway. It shall be structurally sound so that it will hang straight and true when supported by hangers in accordance with Chicago electrical code requirements and shall be capable of being field bent without deformation of the walls.

Conduit shall have a circular cross section sufficiently accurate to permit the cutting of threads in accordance with Table 2 and shall provide a uniform wall thickness throughout. All surfaces shall be smooth and free of injurious defects. The dimensions and weights of rigid steel conduit must be in accordance with Table 1.

THREADING AND CHAMFERING

4. Each length of conduit, and each nipple, elbow and bend must be threaded on both ends, and each end must be chamfered to remove burrs and sharp edges.

The number of threads per inch, and the length of the threaded portion at each end of each length of conduit, nipple and elbow must be as indicated in Table 2. The perfect thread must be tapered for its entire length, and the taper must be 3/4 inch per foot.

ZINC COATING

5. After all cutting, threading, and chamfering all conduit surfaces shall be thoroughly cleaned before application of zinc. The cleaning process shall leave the interior and exterior surfaces of the conduit in such a condition that the zinc will be firmly adherent and smooth.

The conduit must be hot dipped galvanized both inside and out to provide approximately two (2) ounces of zinc per square foot. This is equivalent to

3.4 mils of zinc coating. An additional interior coating to aid in the installation of wires is required.

COUPLINGS

6. (a) The outside surface of couplings shall be protected by means of a zinc coating. The zinc content of the coating on the outside surface must be equivalent to a minimum thickness of 3.4 mils.
- (b) Couplings shall be so made that all threads will be covered when the coupling is pulled tight on standard conduit threads.
- (c) Both ends of the coupling must be chamfered to prevent damage to the starting threads.
- (d) The outside diameter, length and weight of coupling must be as indicated in Table 3.
- (e) Couplings must be straight tapped, except that the 2 1/2 inch and larger sizes may be taper-tapped.

PVC COATED (WHEN SPECIFIED)

7. (a) Only hot dipped galvanized conduit, couplings, and fittings may be polyvinylchloride (PVC) coated.
- (b) All conduit, couplings, and fittings must be cleaned before being coated.
- (c) All conduit, couplings, and fittings must have a PVC coating applied to the exterior by dipping in liquid plastisol. The coating thickness must be a nominal 40 mils.
- (d) All coated conduit, couplings, and fittings must conform to the requirements of NEMA Standard RN1-Section 3, "External Coatings". The latest revision will apply.

PACKING AND IDENTIFICATION

8. The pipe shall be delivered in bundles. Each length of conduit must be marked with the manufacturer's

name or trademark. Securely attached to each bundle at two (2) locations on the bundle must be a weather resistant tag containing the following information:

- a. conduit size
- b. footage of bundle
- c. gross weight of bundle
- d. manufacturer's name

Precaution will be taken by the contractor in handling during shipment or delivery of conduit, and any conduit found to be damaged will not be accepted.

TEST AND INSPECTION

9. Galvanized rigid conduit must be capable of being bent cold into a quarter of a circle around a mandrel, the radius of which is four times the nominal size of the conduit, without developing cracks at any portion and without opening the weld. The protective coatings used on the outside and inside surfaces of rigid steel conduit must be sufficiently elastic to prevent their cracking or flaking off when a finished sample of inch conduit is tested within one year after the time of manufacture, by bending it into a half of a circle around a mandrel, the radius of which is 3 1/2 inches.

Tests on sizes other than 1/2 inch may be conducted within one year after the time of manufacture. If such tests are conducted, the conduit must be bent into a quarter of a circle around a mandrel, the radius of which is six times the nominal size of the conduit.

One of the following three test methods shall be employed for measuring the thickness or extent of the external zinc coating on conduit:

- (a) Magnetic test.
- (b) Dropping test.
- (c) Preece test (Material which will withstand four 1-minute immersions will be considered as meeting requirements as follows; the zinc content of the coating on the outside surface

must be equivalent to a minimum thickness of 3.4 mils).

All tests and inspections must be made at the place of manufacture prior to shipment unless otherwise specified, and shall be so conducted as not to interfere with normal manufacturing processes.

Each length of conduit shall be examined visually both on the outside and inside to determine if the product is free from slivers, burrs, scale or other similar injurious defects (or a combination thereof), and if coverage of the coating is complete.

If any samples of rigid steel conduit tested as prescribed in this specification should fail, two additional samples must be tested, both of which must comply with the requirements of the specification.

All pipe which may develop any defect under tests, or which may before testing or on delivery be found defective, or not in accordance with these specifications, must be removed by the Contractor at his own expense; and such pipe so removed by the Contractor must be replaced by him within ten (10) days of such rejection with other pipe which will conform to these specifications.

TABLE 1
Design Dimension and Weights of Rigid Steel Conduit

Nominal or Trade Size of Conduit	Inside Diameter Unit Length w/couplings	Outside Wall Diameter	Length Minimum Thickness Coupling	Without of Ten	Weight
(Inches)	(Inches)	(Inches)	(Inches)	(Feet/Inches)	(Pounds)
1/2	0.622	0.840	0.109	9-11 1/4	79.00
3/4	0.824	1.050	0.113	9-11 1/4	105.0
1	1.049	1.315	0.133	9-11	153.0
1 1/4	1.380	1.660	0.140	9-11	201.0
1 1/2	1.610	1.900	0.145	9-11	249.0
2	2.067	2.375	0.154	9-11	334.0
2 1/2	2.469	2.875	0.203	9-10 1/2	527.0
3	3.068	3.500	0.216	9-10 1/2	690.0
3 1/2	3.548	4.000	0.226	9-10 1/4	831.0
4	4.026	4.500	0.237	9-10 1/4	982.0

NOTE: The applicable tolerances are:

Length: + 1/4 inch (without coupling)

Outside diameter: + 1/64 inch or -1/32 inch for the 1 1/2 inch and smaller sizes,
± 1 % for the 2 inch and larger sizes.

Wall thickness: - 12 1/2 %

TABLE 2
Dimensions of Threads

Nominal Threads or Trade Size of Conduit (Inches)	Pitch per Inch	Length of Thread (Inches) Diameter at end of Thread Effective Tapered 3/4 Inch per foot	Overall L2	L4
1/2	14	0.7584	0.53	0.78
3/4	14	0.9677	0.55	0.79
1	11 1/2	1.2136	0.68	0.98
1 1/4	11 1/2	1.5571	0.71	1.01
1 1/2	11 1/2	1.7961	0.72	1.03
2	11 1/2	2.2690	0.76	1.06
2 1/2	8	2.7195	1.14	1.57
3	8	3.3406	1.20	1.63
3 1/2	8	3.8375	1.25	1.68
4	8	4.3344	1.30	1.73

NOTE: The applicable tolerances are:

Threaded Length (L4 Col 5): Plus or minus one thread

Pitch Diameter (Col 3): Plus or minus one turn is the maximum variation permitted from the gaging face of the working thread gages. This is equivalent to plus or minus one and one half turns from basic dimensions, since a variation of plus or minus one half turn from basic dimensions is permitted in working gages.

Nominal Outside or Trade Size of Conduit (INCHES)	Minimum Diameter (INCHES)	Minimum Length (INCHES)	Weight (POUNDS)
1/2	1.010	1-9/16	0.115
3/4	1.250	1-5/8	0.170

1	1.525	2	0.300
1 1/4	1.869	2-1/16	0.370
1 1/2	2.155	2-1/16	0.515
2	2.650	2 1/8	0.671
2 1/2	3.250	3-1/8	1.675
3	3.870	3-1/4	2.085
3 1/2	4.500	3-3/8	2.400
4	4.875	3-1/2	2.839

ELECTRICAL SPECIFICATION 1465

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
REVISED JULY, 2006**

GROUND RODS

SUBJECT

1. This specification states requirements for ground rods and clamps to be used for ground electrodes in street lighting, traffic signal, and miscellaneous electrical circuits.

GENERAL

2. (a) Ground rods must be copper clad, steel rods suitable for driving into the ground without deformation of the rod or scoring, separation or other deterioration of the copper cladding.
- (b) Sample. If requested by the Chief Procurement Officer, the contractor must furnish one sample of the ground rod proposed to be furnished within fifteen (15) business days from receipt of such request. The sample ground rod must be delivered to the Division of Electrical Operations, 2451 S. Ashland Avenue, Chicago, Illinois 60608.
- (c) Warranty. The manufacturer shall warrant every ground rod against defects due to design, workmanship, or material developing within a period of one (1) year after the ground rod has been accepted. Any ground rod which fails during this period must be replaced by the contractor without expense to the City. The Commissioner of Transportation or his duly authorized representative will be the sole judge in determining which replacements are to be made.
- (d) The Commissioner will be the sole judge in determining

whether the submitted ground rods meet the requirements of this specification. Ground rods not accepted must be removed at the sole expense of the contractor.

DESIGN

3. (a) The ground rods and couplings must meet the latest requirements of (National Electrical Manufacturer's Association) NEMA Standard GR-1, for copper bonded ground rod electrodes and couplings. The ground rods must also meet the requirements of (Underwriter's Laboratories) UL 467.
- (b) Ground rods shall be made of steel core suitable for driving into the earth without deformation.
- (c) A uniform covering of electrolytic copper, 10 mils in thickness, shall be metallically bonded to the steel core to provide a corrosion resistant, inseparable bond between the steel core and the copper overlay.
- (d) The finished rod must be of uniform cross-section; straight, and free of nicks, cuts or protuberances.
- (e) The rod must be pointed at one end and chamfered at the other.
- (f) All ground rods must be three-quarter inches (3/4") in diameter. The length shall be as specified in the order or in the plans. The length and diameter of the rod and the manufacturer must be clearly and permanently marked near the top of the rod (chamfered end).
- (g) All ground rods must have a ground clamp capable of accommodating a No. 6 AWG Copper Wire.

PACKING

4. (a) Ground rods must be packed in bundles with reinforced tape or plastic banding that will not damage the rods. Small bundles may then be bound in larger bundles held together with steel banding.
- (b) Ground clamps must be packed in a suitable carton. The carton must be labeled to indicate the contents.

ELECTRICAL SPECIFICATION 1467

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
REVISED JUNE 28, 2012**

ROD: ANCHOR, STEEL, WITH HARDWARE

SUBJECT

1. This specification states the requirements for steel anchor rods with hardware for street light pole foundations.

GENERAL

2. (a) Specifications. The anchor rods shall conform in detail to the requirements herein stated, and to the specifications of the American Society for Testing and Materials cited by ASTM Designation Number, of which the most recently published revision will govern.
- (b) Drawing. The drawings mentioned herein are issued by the Department of Transportation, Division of Engineering, and are an integral part of this specification.

ANCHOR ROD

3. (a) Fabrication. Each anchor rod must be fabricated in conformity with City of Chicago drawings numbered 806, 811, 830 and 844.
- (b) Material. The rods must be fabricated from cold rolled carbon steel bar meeting the requirements of ASTM Specification A-36, except that the Specification must be modified to provide a minimum yield point of 55,000 psi (379 MPa).
- (c) Thread. The straight end of each rod must be threaded as shown on City of Chicago drawing for that size rod, and must be American Standard, National Coarse.

HARDWARE

4. Hardware furnished with the anchor rod shall be as shown on the applicable drawing. It must include two (2) hexagonal nuts, American Standard Regular, two (2) flat washers, type B, series W, and one (1) lock washer, steel, helical spring. The nuts must have a Class 2 or 3 fit.

FINISH

5. Galvanizing. The threaded end of each rod must be hot dipped galvanized for the distance shown on the applicable drawing. The thickness of the galvanized coating must not be less than 0.0021 inches. Each hexagonal nut and washer must be galvanized to the minimum thickness required by ASTM A-153, Class C, or ASTM B-454, Class 50. After galvanization, each anchor rod and nut must have a mating fit equivalent to the American Standard Class 2 or 3 fit for nuts and bolts.

TESTS

6. At the discretion of the Commissioner, anchor rods and hardware furnished under this specification will be subject to testing to determine compliance with the materials physical requirements.

INSPECTION

7. Final inspection must be made at point of delivery. Any anchor rods and hardware rejected must be removed by the Contractor at his sole expense.

**POLE MOUNTED CAST ALUMINUM BOX FOR MAIN
SERVICE DISCONNECT**

SCOPE

1. This specification states the requirements for a pole mounted, cast aluminum box intended for outdoor use on the City's Street Light and/or Traffic Control Systems as a main service disconnect. The box will be mounted on a Commonwealth Edison pole and will feed a separately mounted street light controller or traffic signal controller.

GENERAL

2.
 - (a) Specification. The junction box shall conform in detail to the requirements stated herein, and to the specifications and methods of test of the American Society for Testing and Materials cited by ASTM Designation Number, of which the most recently published revisions will govern.
 - (b) Drawing. The drawing mentioned herein is a drawing of the Department of Transportation, Division of Engineering, and must be interpreted as part of these specifications.
 - (c) Acceptance. Junction boxes not conforming to this specification will not be accepted.
 - (d) Sample. One complete junction box of the manufacture intended to be furnished, must be submitted within fifteen (15) business days after receipt of a request from the Chief Procurement Officer.

DESIGN

3.
 - (a) Drawing. The junction box must conform in detail to the dimensions and requirements shown on Standard Drawing Number 893.
 - (b) Material. The body and door must be castings of non-heat-treated aluminum silicon alloy conforming to ANSI alloy 443.0 of ASTM B26.
 - (c) Assembly. Each junction box must consist of the body, door, gaskets, bronze eye-head bolts, bronze wing nuts and stainless-steel knurled pins furnished as described below, all completely assembled, painted and ready for installation.

- (d) Body. The body must be cast as shown in Drawing Number 893. The body must be complete with all drilled and tapped holes required for the mounting of any hardware required to make the box fully functional for a service disconnect.
- (e) Door. The door must be cast as in Drawing Number 893. The door must be furnished with a 1/2" x 3/16" sponge neoprene gasket cemented in place completely around the door jam. The door must be painted prior to cementing the gasket into its groove on the door.
- (f) Hardware. The hinge pins must be stainless steel. The eye-head bolts and wing nuts must be bronze.
- (g) Painting. The exterior surfaces of the junction box must be properly cleaned and given one (1) coat of an approved zinc chromate primer containing a minimum of ten percent (10%) iron oxide, and one (1) coat of black enamel. The paint must be approved prior to production.
- (h) Packing. Assembled junction boxes shall be suitably packed to prevent damage to painted surfaces during shipping and handling. All shipments must be fastened to and shipped on 48" x 48" hardwood, 4-way, non-returnable pallets. Total height must not exceed 64" and total weight must not exceed 2,000 pounds.

HELIX FOUNDATIONS

SUBJECT

1. This specification covers the requirements for steel helix foundations. These foundations may be used to support street light poles for both residential and arterial streets. They may also be used to support aluminum traffic signal posts. They may not be used for any combination poles that support both street lighting and traffic signals, or any traffic signal poles that support monotube arms.

GENERAL

2.
 - (a) Specifications. The foundations must conform in detail to the requirements herein stated and to the specifications and methods of test of the American Society for Testing and Materials cited by ASTM Designation Number of which the most recently published revision will govern.
 - (b) Acceptance. Foundations not conforming to this specification will not be accepted.
 - (c) Drawings. The drawings mentioned herein are drawings of the Department of Transportation. They are integral parts of this specification cooperating to state necessary requirements.
 - (d) Bidders Drawings. The apparent low bidder must submit detailed scale drawings of the foundations showing actual dimensions, details, and welds, if so requested. Shop drawings must be original engineering drawings created by the manufacturer. The drawings must give every dimension necessary to show how the foundation will function and how the pole or post will be mounted. These drawings must be submitted in electronic format, preferably MicroStation 95, if requested by the City.

- (e) Sample. One complete foundation of each size and of the manufacture intended to be furnished must be submitted within fifteen (15) business days upon request of the Chief Procurement Officer.
- (f) Warranty. The manufacturer must warrant the performance and construction of the foundations to meet the requirements of this specification and must warrant all parts, components, and appurtenances against defects due to design, workmanship, or material developing within a period of three years after the foundations have been delivered. This will be interpreted particularly to mean structural or mechanical failure of any element or weld, or failure of any portion of the galvanizing system. The warranty must be furnished in writing guaranteeing material replacement including shipment, free of charge to the City. The Commissioner will be the sole judge in determining which replacements are to be made and the Commissioner's decision will be final.

DESIGN

- 3. (a) Material. Steel must meet or exceed the requirements of ASTM A36. The shaft may be ASTM A53 Grade B, ASTM A252 Grade 2 or ASTM A36.
- (b) Dimensions. Each foundation must be dimensioned as shown on Standard Drawing 936. There are three types of foundations; a five foot foundation with a 13 inch bolt circle for three anchor bolts, a five foot foundation with a ten inch bolt circle for four anchor bolts, and a seven foot foundation with a ten to fifteen inch bolt circle for four anchor bolts.
- (c) Construction. Each foundation must have a shaft .250 inches thick with an outside diameter of 8-5/8 inches. The base plate must be 1 inch thick. The shaft must extend 1 inch into the base plate and be circumferentially welded top and bottom. The base plate must be even and flat on top with no sharp edges. The top of the base plate must be clearly and permanently marked to indicate the cableway orientation. The helix screw plate must be fabricated from a 3/8 inch thick 14 inch diameter circle of steel formed to a 3 inch pitch. The pilot point must extend 9 inches below the screw plate. The leading end of the pilot must be rounded, diamond shape, or chisel shaped. The pilot point must be welded concentric with the axis of the foundation. The

cableways must be 3 inches wide by 18 inches long and be located as indicated on Standard Drawing 936. There must be no sharp edges on the cableway openings.

After fabrication, the complete foundation must be hot dipped galvanized in accordance with the provisions of ASTM A123, Grade B. This requires a zinc coating equal to 2 ounces per square foot. Touch up of small areas using a cold zinc rich coating or a cold galvanized coating is not permitted.

WELDING

4. (a) Standards. Every weld must be made in conformity with the American Welding Society. Each bidder must submit with his proposal a drawing showing the sizes and types of welds, must state the type of electrode, and

must describe the welding methods he proposes to employ in fabricating the foundations.

- (b) Testing. The welds must be inspected for penetration and soundness by the magnetic particle inspection method or by radiography. If the magnetic inspection process is used, the dry method with direct current must be employed.

TESTING

5. (a) The foundations must be capable of withstanding 10,000 foot-pounds of torque applied about the main axis.

(b) The manufacturer must certify the type of steel used to form the foundations.

- (c) The manufacturer must certify that the welds have been properly tested.

PACKAGING

6. (a) General. The foundations must be packaged so as not to incur any damage during shipping and unloading. Materials such as lumber (2"x4" min.), non-marring banding, and other appropriate bundling materials must be used to make a rigid, long lasting, bundle capable of being handled, shipped and stored without shifting or

breaking of the contents. Each bundle must be capable of being lifted by a forklift truck and the bundles must be shipped in a flat bed truck to facilitate unloading.

- (b) All foundations will be delivered to the Division of Electrical Operations storage yard at 1539 South Ashland Avenue in Chicago, or to another location within the City as indicated on the order.

PRECAST CONCRETE STRUCTURES

SUBJECT

1. This specification covers the requirements for precast concrete structures to be used for City of Chicago electrical facilities. The structures will include manholes, handholes, and street light pole foundations.

GENERAL

2.
 - (a) Specifications. The precast structures must conform in detail to the requirements herein stated and to the specifications and methods of test of the American Society for Testing and Materials cited by ASTM Designation Number of which the most recently published revision will govern.
 - (b) Acceptance. Precast structures not conforming to this specification will not be accepted. The Commissioner of Transportation or his representative will be the sole judge in determining if the precast structures meet this specification. The Commissioner's decision will be final.
 - (c) Drawings. The drawings mentioned herein are drawings of the Department of Transportation. They are integral parts of this specification cooperating to state necessary requirements.
 - (d) Bidders Drawings. The apparent low bidder must submit detailed scale drawings of the precast structures showing actual dimensions and details, if so requested. Shop drawings must be original engineering drawings created by the manufacturer. The drawings must give every dimension necessary and show how the structure is assembled.
 - (e) Sample. One complete precast structure of each item must be submitted within fifteen (15) business days

upon request of the Chief Procurement Officer.

(f) Warranty. The manufacturer must warrant the performance and construction of the precast structures to meet the requirements of this specification and must warrant all parts, components, and appurtenances against defects due to

(g) design, workmanship, or material developing within a period of one (1) year after the precast structures have been delivered. This will be interpreted particularly to mean structural failure of any element. The warranty must be furnished in writing guaranteeing material replacement including shipment, free of charge to the City. The Commissioner will be the sole judge in determining which replacements are to be made. The Commissioners decision will be final.

DESIGN

3. (a) Material. Concrete must be Portland cement concrete, Class SI or PC, meeting current IDOT specifications. Pulling irons in manholes must meet or exceed the requirements of ASTM A36 steel. Pulling irons must be hot dipped galvanized. Steel reinforcing bars must meet or exceed the requirements of ASTM A615, Grade 60. Cable supports in manholes, including stanchions and racks, must be manufactured for that specific purpose. Stanchions must be non-metallic and must be capable of accommodating several different sizes of cable hooks at various elevations. A minimum of eight cable hooks, 4 inches in length, must be provided with each manhole, and should include any hardware necessary to affix the hooks to the racks. Cable hooks for handholes must be manufactured for that specific purpose. Cable hooks for handholes must be a minimum of 3 inches in length and 3 inches in depth. Anchor rods in foundations must meet the latest Electrical Material Specification 1467. Conduit elbows in foundations must meet the latest Electrical Material Specification 1462.
- (b) Foundations must include conduit elbows, anchor rods, washers, and nuts. The 7 foot foundation must include a 6 foot re-bar cage. Handholes must include cable hooks. Manholes must include cable racks, pulling irons, and cable hooks. Each manhole and each handhole must have lifting anchors cast in the concrete to facilitate

shipment and installation. If the manhole or handhole is in more than one piece, instructions for assembly must be provided. Also, a sufficient amount of bonding agent must be provided. The bonding agent must be approved material. Frames and covers, sump grates, clay tile, and ground rods are not included under this specification.

(c) Dimensions of Manholes and Handholes. Each manhole or handhole must be dimensioned as shown on the appropriate standard drawing. The 30 inch diameter handhole is Standard Drawing 867. The 36 inch diameter handhole for 24 inch frame and cover is Standard Drawing 866. The 36 inch diameter for 30 inch for frame and cover is Standard Drawing 871. The 3 foot by 4 foot by 4 foot manhole for a 24 inch diameter frame and cover is Standard Drawing 730. The 3 foot by 4 foot by 4 foot manhole for 30 inch frame and cover is Standard Drawing 729. The 4 foot by 6 foot by 6 foot manhole for 24 inch frame and cover is Standard Drawing 732. The four foot by 6 foot by 6 foot manhole for 30 inch frame and cover is Standard Drawing 733. The 5foot 4 inch by 7 foot 4 inch manhole roof is Standard Drawing 733.

(c) Dimensions of Grade Rings. Grade rings shall be in four different dimensions. The 39 inch outside diameter ring shall have a 24 inch diameter opening and shall come in both 2 inch and 4 inch thicknesses. The 45 inch outside diameter ring shall have a 30 inch diameter opening and shall also come in both 2 inch and 4 inch thicknesses.

(d) Dimensions of foundations. The residential street light foundation shall be dimensioned as shown on standard drawing 565. The 7 foot arterial street light foundation shall be as shown on standard drawing 818.

DELIVERY

4. All manholes, handholes, and foundations will be delivered to the Division of Electrical Operations storage yard at 1539 South Ashland Avenue in Chicago, or to another location within the City as indicated on the order. Any manhole, handhole, or foundation deemed to be defective by the Commissioner or his representative must be removed and replaced at no cost to the City. The Commissioner's decision will be final.

NON-METALLIC CONDUIT

SCOPE

1. This specification states the requirements for both rigid and coilable non-metallic conduit. The conduit will be used for low voltage (600 volt rated cables) electrical street lighting and traffic control systems. It may also be used for fiber-optic communications cables. This conduit will be installed underground. Rigid non-metallic conduit may be installed on structure.

GENERAL

2. (a) Standards. The following standards are referenced herein.

ASTM – American Society for Testing and
Materials NEC – National Electrical Code
NEMA – National Electrical Manufacturer's
Association UL – Underwriter's Laboratories

- (b) Warranty. The manufacturer must warrant the conduit against defective workmanship and material for a period of one year from date of installation or date of delivery. Any conduit that is found to be defective must be replaced without cost to the City.
- (c) Sample. If requested by the Chief Procurement Officer, a sample of the conduit intended to be furnished under this specification, must be submitted to the Engineer of Electricity within fifteen (15) business days upon receipt of such request.

MATERIAL

2. (a) Rigid non-metallic conduit will be made of polyvinyl chloride (PVC). All conduit and fittings must comply with ASTM D 1784 and with the applicable sections of NEMA TC2, UL standard 651, and NEC Article 352.

Fittings must meet the standards of NEMA TC3 and TC6, as well as UL 514.

- (b)
- (c) Coilable non-metallic conduit will be made of high-density polyethylene (HDPE). All conduit must comply with ASTM D3350 and NEMA TC7.
- (d) A tape must be installed in the HDPE conduit at the factory. The tape is for pulling cable through the conduit. The tape must be specifically manufactured for this purpose. The tape must have a tensile strength of at least 1000 pounds.

SIZES

- 3. (a) PVC and HDPE will come in two wall thicknesses: schedule 40 and schedule 80.
- (b) PVC will come in ten-foot sections. HDPE will come on reels.
- (c) Nominal inside diameters (in inches) for non-metallic conduits will include the following: $\frac{1}{2}$, $\frac{3}{4}$, 1, 1 $\frac{1}{4}$, 1 $\frac{1}{2}$, 2, 2 $\frac{1}{2}$, 3, 3 $\frac{1}{2}$, 4.

PACKING

- 4. Rigid conduit must be shipped in bundles. Coilable conduit must come on wooden reels. Both bundles and reels must be tagged to indicate the size and diameter of the conduit, the quantity in feet, the weight, and the manufacturer's name. The conduit itself must be marked to indicate the type and size, as well as the manufacturer.

ELECTRICAL SPECIFICATION 1534

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
REVISED MAY 2, 2025**

SUBJECT

1. This specification states the requirements for single conductor cables intended to be used in 240 VAC street lighting circuits. The cable will also be used as service cable for both street light controllers and traffic signal controllers. The cables will be installed in underground conduit and rated as 600 volt.

GENERAL

2. (a) **Specifications.** The cable shall conform in detail to the requirements herein stated, and to the applicable portions of the latest revisions of the specifications and methods of test of the following agencies:
- (1) ASTM – American Society for Testing and Materials
 - (2) ICEA – Insulated Cable Engineers Association
 - (3) IEEE – Institute of Electrical and Electronics Engineers
 - (4) UL – Underwriters Laboratories
- (b) **Acceptance.** Cable not in accordance with this specification will not be accepted.
- (c) **Sample.** If requested by the Chief Procurement Officer, a three (3) foot sample of the cable intended to be provided under this specification must be sent to the attention of the Engineer of Electricity within fifteen (15) days of receipt of such request.
- (d) **Warranty.** The contractor will be responsible for any cable failing during normal use within one (1) year after the date of acceptance by the City. The contractor shall provide material replacement of any failed cable. There shall be no cost to the City. All replacements must be made free of charge F.O.B. delivery point of the original contract.

CABLES

3. (a) **Construction.** The cable shall consist of a copper conductor with a tight-fitting thermoset, free stripping, concentric layer of insulation.

- (b) The outer diameter of the cable shall be as noted in Table A.
- (c) Cable shall be UL approved for sunlight resistance and for direct burial applications.
- (d) Cable must meet IEEE 383 and UL 1581 70,000 BTUs per hour flame test requirements.

COLOR CODE

- 4. (a) **Triplexed cable shall consist of a black cable, a red cable, and a green ground cable. Triplexed cable will have a 16” to 18” lay.**
- (b) Individual cables will be black, red, or white, depending upon the order.

CONDUCTOR

- 5. (a) Material. The conductors shall be bare annealed copper. All strands shall be round.
- (b) Specifications. The conductor must meet the requirements of ASTM B3 and ASTM B8.
- (c) Sizes. The conductor sizes must be in accordance with all requirements in Table A of this specification.
- (d) Stranding. The number of strands must be as indicted in Table A. Stranding must meet the requirements of ASTM B8, Class B or Class C.

INSULATION

- 6. (a) Type. The insulation shall be either ethylene propylene rubber compound (EPR) or cross-linked polyethylene (XLP) meeting the requirements of ICEA S-95-658 and UL 44 for RHW-2 cable and UL 854 for USE-2 cable.
- (b) Thickness. The insulation shall be circular in cross-section, concentric to the conductor, and must have an average thickness not less than that set forth in Table A of this specification, and a spot thickness not less than ninety percent (90%) of the average thickness.
- (c) Cable Marking. The cable shall be identified by a permanently inscribed legend in white lettering as follows:

1/C No. (conductor size) AWG-600V-90°C-EPR or XLP-RHW-2

A similar marking may be acceptable. The legend must be repeated at approximately eighteen (18) inch intervals on the outside surface of the cable parallel to the longitudinal axis of

the conductor. A sequential footage marking must be located on the opposite side from the legend.

PACKAGING

8. (a) Reels. The completed cable must be delivered on sound substantial, non-returnable reels. Both ends of each length of cable must be properly sealed against the entrance of moisture and other foreign matter by the use of clamp-on cable caps. The ends must be securely fastened so as not to become loose in transit. Before shipment, complete 2 X 4 lagging must be applied to all reels.
- (b) Footage. Each reel must contain the length of cable as set forth in Table A of this specification. Alternate lengths may be considered.
- (c) Reel Marking. A metal tag must be securely attached to each reel indicating the reel number, contract number, date of shipment, gross and tare weights, the appropriate City commodity code if applicable, and a description of the cable. Also, each reel must have permanent marking on it indicating the total footage, and the beginning and ending sequential footage numbers.

TABLE A

CONDUCTOR		INSULATION	A-C TEST	REEL	OVERALL
	THICKNESS		LENGTH		DIAMETER
<u>AWG</u>	<u>STRANDS</u>	<u>MILS</u>	<u>VOLTS</u>	<u>FEET</u>	<u>INCH</u>
14	7	45	5500	2000	.133
12	7	45	5500	2000	.152
10	7	45	5500	2000	.176
8	7	60	5500	2000	.236
6	7	60	5500	2000	.274
4	7	60	5500	2000	.322
2	7	60	5500	1000	.382
1/0	19	80	7000	1000	.470
2/0	19	80	7000	1000	.514
3/0	19	80	7000	1000	.564
4/0	19	80	7000	1000	.620
250 MCM	37	95	8000	1000	.705

ELECTRICAL SPECIFICATION 1541

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
SEPTEMBER 16, 2004**

REINFORCING ROD FORMED STEEL CAGES

SUBJECT

1. This specification is for steel cages. The cages are to be used in street light pole foundations to provide the necessary strength to support street light poles.

DESCRIPTION

2. (a) The steel must conform to the requirements of the American Society for Testing and Materials cited by ASTM designation number, of which the latest revision will govern.
 - (b) The steel cages must conform to all the requirements shown on Electrical Standard Drawing 793A.
 - (c) The steel cages must be constructed of number 3 and number 6 reinforcing bars, as shown on Electrical Standard Drawing 793A. Reinforcing steel must conform to ASTM A615, Grade 60, with a yield strength of 60,000 psi. All joints must be welded according to the latest recommendations of the American Welding Society's (AWS) Document 1.4.

ACCEPTANCE

3. If so requested, a sample cage must be delivered to the City within fifteen (15) business days of such request by the Chief Procurement Officer. The contractor must present certification that the steel used meets this specification. The City reserves the right to reject any cages which do not completely meet this specification.

DELIVERY

4. The Contractor must furnish and deliver the steel cages to the City of Chicago, Department of Transportation, Division of Electrical Operations, 4101 South Cicero Avenue, Chicago, Illinois 60650, or to a location as directed in the contract. Any cages that do not meet the specification or are delivered damaged will be rejected.

ELECTRICAL SPECIFICATION 1546

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
REVISED MARCH 7, 2014**

**ORNAMENTAL BRACKET ARMS
FOR MID-MOUNT RESIDENTIAL AND
ARTERIAL LUMINAIRES**

SUBJECT

1. This specification states the requirements for a street lighting bracket arm for a mid-mount residential luminaire, and a street light bracket arm for a mid-mount arterial luminaire. The bracket for the mid-mount residential luminaire will be mounted to a light pole approximately ten feet above grade. The bracket for the mid-mount arterial luminaire will be mounted to a light pole approximately 16 feet above grade.

GENERAL

2. (a) Information Required. Each bidder must submit with his proposal the following information relative to the brackets he proposes to furnish:
 1. Outline drawing (electronic format).
 2. Complete description and weight
 3. Manufacturer's name and catalogue designation of the bracket.
- (b) Sample. One complete bracket with hardware, of the manufacture intended to be furnished, must be submitted upon request of the Chief Procurement Officer within fifteen (15) business days from the receipt of notice.
- (c) Assembly. Each bracket must be delivered completely assembled, wired, and ready for installation. Each bracket must come complete with all necessary mounting hardware. Three one conductor #12 pole wire will be installed in each bracket by the supplier. This cable will be 18 feet in length for the residential bracket and 25 feet in length for the arterial bracket.

- (d) Warranty. The manufacturer must warrant the performance and construction of the brackets to meet the requirements of this specification, and must warrant all parts, components and appurtenances against defects due to design, workmanship or material developing within a period of one (1) year after the bracket has been placed in service. Any bracket, or part thereof, not performing as required, or developing defects within this period must be replaced by the manufacturer without expense to the City.

BRACKET

3. (a) Material. Each arm must be constructed of cast aluminum conforming to ASTM B26/B26M, Grade 319. A steel pipe must be inserted into the arm to provide added strength. The steel must conform to ASTM A595, Grade A. The pole plate must be constructed of high strength galvanized carbon steel. The tenon must be a minimum of 3/16" in thickness.
- (b) Appearance. The residential bracket arm must conform in appearance and dimensions to that shown on Electrical Standard Drawing Number 959. The arterial bracket arm must conform in appearance and dimensions to that shown on Electrical Standard Drawing Number 959A.
- (c) Construction. Castings must have smooth external surfaces free from protuberances, dents, cracks, or other imperfections marring their appearance. Welding or plugging of casting defects is prohibited. All wire ways must be smooth and free from any sharp edges. The pipe end at the tenon must have a plastic grommet, or otherwise made free of any sharp edges, to protect the wire.
- (d) Structure. The contoured back plate for the residential bracket must be fastened to the street light pole with two(2), 3/8-16 X 1-1/4 inch stainless steel bolts with two(2) split lock washers (bolts and washers will be provided with this item). The back-plate for the arterial bracket must allow for the option of band mounting by two 5/8 inch steel bands (banding will not be provided under this specification). The bracket arm must be

expected to withstand normal vibrations, wind, and inclement weather and not fail or become loose.

PAINTING

5. (a) Surface Preparation. Exterior surfaces of the bracket arm must be prepared by "Solvent Cleaning" per SSPC-SP1 using a solvent recommended for aluminum surfaces such as "Sherwin Williams MEK #R6K10." Solvent must be used as per written instructions of manufacturer to remove all oil, grease, dirt and contaminants.
- (b) Primer Type. Within one hour of surface preparation, surfaces must be primed using a primer specifically recommended for aluminum surfaces such as "Sherwin Williams Industrial Wash Primer #P60GZ."
- (c) Primer Application. Primer must be applied in accordance with written instructions of manufacturer to produce a minimum dry thickness film of 3.0 mils. Primer must dry for a minimum of 30 minutes and a maximum of 60 minutes before application of finish coat.
- (d) Finish Coat. Finish coat must be a polyurethane enamel specifically recommended for use over a primed aluminum surface. Two (2) coats of finish must be applied. Each coat must be a minimum of 1.5 mils dry thickness.
- (e) Color will be gloss black or silver as specified on the order.
- (f) Alternate painting methods may be considered.

WIRE

6. Each bracket will have individual insulated conductors of the length and number described previously. Each wire shall be EPR insulated. Cable shall be rated at 600 volts. The cable shall meet the requirements of ICEA S-95- 658, UL44 (RHW-2), and UL854 (USE-2). The insulation shall be color coded: one conductor red, one conductor black, and one conductor green.

PACKAGING

7. (a) Packing. Each bracket with wire installed must be securely packed in a suitable carton so that it will not be damaged by shipment and/or handling. Back plates

and bolts will be packed separately within the same carton.

8. Marking. Each carton must be clearly marked on the outside in letters not less than three-eighths (3/8) inch tall with the legend: "ORNAMENTAL MID-MOUNT RESIDENTIAL BRACKET" or "ORNAMENTAL MID-MOUNT ARTERIAL BRACKET", the appropriate City Commodity Code Number, the name of the manufacturer, the date of manufacture, and the contract number under which the brackets are being furnished.

ELECTRICAL SPECIFICATION 1593

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
REVISED FEBRUARY 11, 2015**

CABLE ANTI-THEFT DEVICE FOR HELIX FOUNDATIONS

SUBJECT

1. This specification covers the requirements for a cable anti-theft device to be used with steel helix foundations with either ten inch diameter bolt circles or fifteen inch diameter bolt circles. The device will secure the cable so as to prevent removal of the cable without removing the pole first.

GENERAL

2.
 - (a) Specifications. The devices must conform in detail to the requirements herein stated and to the specifications and methods of test of the American Society for Testing and Materials cited by ASTM Designation Number of which the most recently published revision will govern.
 - (b) Acceptance. Devices not conforming to this specification will not be accepted.
 - (c) Drawings. The drawing mentioned herein is a drawing of the Department of Transportation, and is an integral part of this specification.
 - (d) Bidders Drawings. If requested, the apparent low bidder must submit detailed scale drawings of the device showing actual dimensions, details, and welds. Shop drawings must be original engineering drawings created by the manufacturer. The drawings must give every dimension necessary to show how the device will function. These drawings must be submitted in electronic format, preferably Microstation 95, if so requested by the City.
 - (e) Sample. One complete device of the manufacture intended to be furnished must be submitted within fifteen (15) business days upon request of the Chief Procurement Officer.
 - (f) Warranty. The manufacturer must warrant the performance and construction of the devices to meet the requirements of this specification and must warrant all parts, components, and appurtenances against defects due to design, workmanship, or material developing within a period of three years after the devices have been delivered. This will be interpreted particularly to mean structural

or mechanical failure of any element or weld, or failure of any portion of the painting system. The warranty must be furnished in writing guaranteeing material replacement including shipment, free of charge to the City. The Commissioner will be the sole judge in determining which replacements are to be made and the Commissioner's decision will be final.

DESIGN

3.
 - (a) Material. Steel must meet or exceed the requirements of ASTM A36.
 - (b) Construction. Each device must be dimensioned as shown on Standard Drawing 982. All parts shown on the standard drawing must be supplied as part of this specification.

The device must be powder coated silver or black, as directed on the order.

The clamping device shall be constructed so that cables can only be clamped or unclamped when the pole is not in place. When the pole is in place the clamping mechanism shall not be accessible. The clamping device can only be installed after the cable is pulled and before the pole is set. When installed, the device and the clamping mechanism shall have a great enough strength that when a pulling force is applied to the cable, the cable will break before it will slip through the device.

Any similar device, other than that shown in Standard Drawing 982, may be considered. The City will be the final judge as to whether a device meets the intent of this specification.

WELDING

4.
 - (a) Standards. Every weld must be made in conformity with the American Welding Society. If so requested, the apparent low bidder must submit a drawing showing the sizes and types of welds, must state the type of electrode, and must describe the welding methods he proposes to employ in fabricating the devices.

TESTING

5.
 - (a) The welds must be inspected for penetration and soundness by the magnetic particle inspection method or by radiography. If the magnetic inspection process is used, the dry method with direct current must be employed.
 - (b) The manufacturer must certify the type of steel used to form the devices.

PACKAGING

6.
 - (a) General. The devices must be packaged so as not to incur any damage during shipping and unloading. Materials such as lumber (2"x4" min.), non-marring banding, and other appropriate bundling materials must be used to make a rigid, long lasting, bundle capable of being handled , shipped and stored without shifting or breaking of the contents. Each bundle must be capable of being lifted by a fork lift truck and the bundles must be shipped in a flat bed truck to facilitate unloading.
 - (b) All devices will be delivered to the Division of Electrical Operations storage yard at 1539 South Ashland Avenue in Chicago, or to another location within the City as indicated on the order.

ELECTRICAL SPECIFICATION 1606

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
REVISED OCTOBER 10, 2017**

ARTERIAL STREET LIGHTING CONTROLLER

SUBJECT

1. This specification states the requirements for an arterial street lighting controller and aluminum cabinet for use in controlling arterial street lighting circuits. The cabinet shall be mounted on top of a ballast base housing, which will be affixed to a concrete foundation.

GENERAL

2.
 - (a) Specifications. The controller shall conform in detail to the requirements herein stated, to the Federal Standard cited by number, and to the specifications and methods of test of the American Society for Testing and Materials, cited by ASTM Designation Number, in which the most recently published revision will govern. Cabinets must meet or exceed the requirements of a NEMA rating 3R and must be U.L. listed.
 - (b) Acceptance. Controllers and cabinets not conforming to this specification will not be accepted.
 - (c) Drawings. The drawings mentioned herein are drawings of the Department of Transportation, Division of Electrical Operations, and must be interpreted as part of these specifications cooperating to state necessary requirements.
 - (d) Sample. One complete controller in cabinet of the manufacture intended to be furnished must be submitted upon request of the Chief Procurement Officer within fifteen (15) business days after receipt of such a request. The sample must be delivered to the attention of the Engineer of Electricity, Division of Electrical Operations, 2451 South Ashland Avenue, Chicago, Illinois 60608.

- (e) Warranty. The manufacturer shall warranty the controller and cabinet against flaws in material or workmanship for a period of two (2) years from the date of delivery. Any controller or cabinet developing flaws within this period must be replaced by the manufacturer, including shipment, at no cost to the City.

DESIGN

- 3. (a) Drawings. The control cabinet must conform in detail to requirements shown on Drawing 876 for a 100 Amp application and to Drawing 880 for a 200 Amp application.
- (b) Material. The cabinet and the door assembly must be constructed of 5052- H32 sheet aluminum alloy, with a minimum thickness of .125 inches. The base plate must be sheet aluminum of .250 inch thickness. All electrical components and wiring must be as shown on the appropriate drawings.
- (c) Dimensions. The overall outside dimensions of the 100amp control cabinet must be 36 inches in height by 20 inches in width by 15 inches in depth. The overall outside dimensions of the 200 amp control cabinet must be 41 inches in height by 25 inches in width by 16 inches in depth. Cabinets must have sloped tops to shed water.

CABINET REQUIREMENTS

- 4. (a) Cabinet. The cabinet must be sized as shown on either Drawing 876 or Drawing 880, depending on the controller amp rating. The cabinet door opening must be double flanged on all four (4) sides. A door restraint must be provided to prevent the door from moving in windy conditions.
- (b) Door. The door size must be a minimum of 80% of the front surface area. The door must be hinged on the right side when facing the cabinet. The door must have a gasket that meets the requirements found in U.L.508 Table 21.1. The gasket must form a weather-tight seal between the cabinet and the door. The door, when closed, must be flush with the cabinet.
- (c) Hinges. Hinges must be continuous and bolted to the

cabinet and door with 1/4-20 stainless steel carriage bolts and nylock nuts. Hinges must be made of .093 inch thick aluminum. The hinge leaves must not be exposed externally when the door is closed. Only the hinge knuckles must be visible upon closing the door. The hinge pin must be .250 inch diameter stainless steel and must be capped top and bottom by weld to render it tamper-proof.

- (d) Latching. The latching mechanism must be a three-point draw roller type. The pushrods must be aluminum. The rollers must be nylon with a minimum diameter of .875 inches. The center catch must be .187 inch aluminum, minimum.
- (e) Handle. The handle must be stainless steel with a .750 inch diameter shank. The handle must have provision for a padlock. The lock must be keyed dead bolt #200725 or equivalent. Two (2) keys must be provided for each cabinet.
- (f) Ventilation. Louvered vents must be provided in the door. Louvers must satisfy the NEMA rod entry test for 3R enclosures. A removable filter must cover the louvers from inside the door. The filter must be held firmly in place with top and bottom brackets and a spring-loaded clamp. Exhaust air must be vented out between the top of the cabinet and the door. The exhaust area must be screened with openings of .12 inch by 1.0 inch.
- (g) Equipment Mounts. The cabinet must be equipped with two (2) adjustable AC@ channels on both side walls and on the back wall. The internal dimensions of the channels must be 1.075 inches high by .625 inches wide. All mounting hardware must be furnished.
- (h) Workmanship. All control cabinets must be free of flaws, and must have neat, smooth exterior surfaces. All holes must be accurately located and drilled. All welds must be neatly formed and free of cracks, blow holes, or other irregularities. All inside and outside edges must be free of burrs.
- (i) Painting. The cabinet, door and other parts must be treated by an iron phosphate conversion technique. After which, all the parts must be baked dry. A polyester

powder coat must then be applied. The inside of the cabinet and door must be white. The outside of the cabinet and door must be green meeting No. 14110 of Federal standard Number 595, or a gloss black, or another color as specified. A paint chip must be provided upon request.

PANEL

5.
 - (a) The panel must be composed of phenolic plastic $\frac{1}{2}$ inch in thickness, or an approved equal. It must be securely bolted to the cabinet using stainless steel hardware.
 - (b) The panel will be sized, cut, and drilled as shown on the appropriate standard drawing. For a 100 amp and 200 amp – 2 pole controller, the panel must comply with Drawing 984. For a 100 amp and 200 amp – 3 pole controller, the panel must comply with Drawing 984. If alternate components are proposed, the panels must be sized accordingly.

ELECTRICAL COMPONENTS

6.
 - (a) All components will be as indicated on the appropriate drawing, or will be approved equals. Circuit breakers must have thermal magnetic trips. Each breaker must be enclosed in a hard insulated housing. All breakers must be UL listed. The photo-cell relay, if required, must meet City specifications.
 - (b) Wiring will be as indicated on the appropriate drawing. All wire will have stranded copper conductors, unless indicated otherwise. All wires must be insulated with an approved 125° Centigrade insulation.
 - (c) For a 3-wire, 1-phase, 240 volt ComEd input, components and wiring will be as indicated on Standard Drawing 983 (for either 100 amp or 200 amp service). For a 4-wire, 3-phase, 120/208 volt ComEd input, components and wiring will be as indicated on Standard Drawing 983 (for either 100 amp or 200 amp service).

THIS SPECIFICATION SHALL NOT BE ALTERED

ELECTRICAL SPECIFICATION 1608

**DIVISION OF ENGINEERING
DEPARTMENT OF TRANSPORTATION
CITY OF CHICAGO
REVISED AUGUST 6, 2024**

1. SUBJECT

This specification states the requirements for smart lighting control nodes. Each external or internal individual node is to be wired to an individual roadway luminaire. A third node will be used for control of a group of luminaires. Each node shall be connected to a wireless mesh network. There are three nodes specified. One node will consist of a standard twist-lock type (external node) which will be mounted to a matching receptacle on the outside of a roadway luminaire. The second type node will be mounted internally to a luminaire (internal node). The third type of node shall control a group of luminaires on a common circuit (circuit node). The nodes shall provide two-way wireless communications between the luminaires and the City's smart lighting system. Functions shall consist of energy monitoring, on/off control, dimming, and outage reporting.

2. GENERAL

- 2.1 Information Required. Each bidder shall submit with his proposal the following information relative to the nodes he proposes to furnish.
- (1) Manufacturer's catalog description, including manufacturer's name and catalog ordering numbers.
 - (2) Specification sheets.
 - (3) Any other information as required herein.
- 2.2 Assembly. Each control node shall be delivered completely assembled, wired, and ready for installation.
- 2.3 Warranty. The manufacturer shall warrant every node against any defects due to design or workmanship developing within a period of five (5) years after the nodes have been accepted by the City. This will be interpreted particularly to mean failure of any component impairing the proper operation of the unit. Any node developing defects within this period shall be replaced by the manufacturer at their sole expense and without cost to the City.
- 2.4 Sample. If so requested, a sample of the nodes of the manufacture intended to be furnished under this contract must be submitted to the Division of Electrical Operations within fifteen (15) days upon receipt of a request from the Chief Procurement Officer.

- 2.5 The manufacturer shall be ISO 9001 certified for quality management in the manufacturing field.
- 2.6 Nodes shall be FCC compliant for non-electrical interference.
- 2.7 Compliance. The nodes shall conform in detail to the requirements herein stated, and to the standards herein cited, of which the latest revisions shall govern.

3. HOUSING

- 3.1 Housings shall be molded of a UV stabilized polycarbonate, pigmented to an approved color. External node housings shall match the color of the luminaire in which they will be installed. The housing is required to be impact resistant.
- 3.2 A weather-proof, permanent label shall be attached to each unit indicating the manufacturer's name, month and year of manufacture, model and serial number, voltage and load ratings, and provision for marking installation and removal dates.
- 3.3 The dimensions of the external twist-lock node shall not exceed 5" high by 3.5" in diameter. The external node shall not weigh more than 10 ounces.
- 3.4 The dimensions of the internal node shall not exceed 2.5" high, 4.25" length, and 3.5" width. The internal node shall not weigh more than 11 ounces.
- 3.5 The internal smart node and the circuit smart node shall have lead wires of approximately 12 inches.
- 3.6 The external node shall have a neoprene or other approved gasket attached to the base to effectively seal the connections against weather and dust.

4. ENVIRONMENTAL

- 4.1 The nodes shall operate within the temperature range of -40° C to +70° C.
- 4.2 The external node shall have an ingress protection rating of IP66.
- 4.3 The internal node shall have an ingress protection rating of IP65.
- 4.4 The circuit node shall have an ingress protection rating of IP65.

5. ELECTRICAL

- 5.1 The nodes must function properly within the existing City lighting circuits and the power

distribution system as provided by ComEd. Existing conditions shall not adversely affect the nodes, nor keep them from performing properly.

- 5.2 Power consumption shall be less than 2watts (at 120 volts).
- 5.3 The nodes must be stable and reliable over the range of 105 to 305 volts A.C., at 50/60 cycles.
- 5.4 Surge Arrestor. Over voltage protection shall be provided for the control components and the load circuit by means of a metal oxide varistor (MOV) or other specifically approved type arrestor. It must limit high voltage surges to a value at least 20% below the basic impulse insulation level (BIL in accordance with EEI-NEMA) of the control. The MOV must be rated for a minimum of 320 joules 6KV/3KA. In both external and internal nodes, the MOV must be mounted internally in the control housing.
- 5.5 Switching Relay. The ON-OFF switching operations shall be accomplished by normally closed contacts which must be opened by means of a rugged, properly rated, magnetic relay, subject to approval. The switching shall be positive and free of chatter and/or sticking of contacts. The contractor must provide test data verifying that contact chatter does not exceed 5 milliseconds when operated under loads as herein specified. The relay must have contacts of silver alloy, tungsten, or other specifically approved material.
- 5.6 Capacity. Maximum pass-through current shall be 10 amps. Maximum loading shall be 1500VA (960 watts).
- 5.7 Circuit nodes shall have an external antenna. The antenna shall be capable of being mounted to a cabinet and be weather hardened and vandal resistant. Lead wires for the antenna shall be included with each circuit node. A single antenna shall be capable of being shared by multiple nodes.
- 5.8 External twist-lock nodes shall be 7-pin. Internal nodes and circuit nodes shall have 7 lead -in wires. The circuit node shall also have wires for the antenna.

6. OPERATION

- 6.1 The external nodes shall meet the requirements of ANSI C136.10 for twist-lock controls, as well as UL 773. All nodes shall meet the requirements of ANSI C136.41 for dimming control.
- 6.2 Internal nodes shall be able to communicate with the network even when installed inside the metal housing of a luminaire.
- 6.3 If an external node loses communication, then operation will default to the photocell. If the

photo-cell malfunctions, the control will default to the on position.

- 6.4 If an internal node or circuit node loses communication, then the default operation of the node will provide power to the luminaire and the luminaire will remain on or be turned on.
- 6.5 Ability for Light turn-on or turn-off by programmed schedule.
- 6.7 0-10VDC driver control, allowing dimming.
- 6.8 Remote control and reporting (two-way communications).
- 6.9 Metering.
 - (1) Energy metering (0.5% accuracy).
 - (2) Energy metering by hour, day, minute, with record keeping.
 - (3) Metering Range: 105 to 305 VAC, 10A RMS (ANSI C12.20)

7. PHOTO-CONTROL

- 7.1 The internal smart nodes and the circuit smart nodes shall not have a built-in photocell.
- 7.2 The external twist-lock node shall have a built-in photocell.

- (1) Photoconductive Cell. The photocell shall consist of a suitable substrate, a chemically inert electrode material and a thin layer of photosensitive cadmium sulfide or other acceptable photosensitive material. It must be hermetically sealed in a glass to metal package to prevent moisture and contamination damage. Plastic cased cells are not acceptable. Filtered silicon sensors in clear epoxy cases are also acceptable. The cell must not be subject to overloading due to the demand of the design circuit nor the ambient temperatures surrounding the cell.
- (2) The external node control must be calibrated at 120V AC for a "turn-on" setting of 1.50 ± 0.30 horizontal foot candles of natural illumination with a 2-5 second turn OFF delay. The "turn-off" setting must be adjusted to one and one half (1.5) times the "turn-on" setting. The external node control must have a 1-2 second turn ON delay.

8. NETWORKING

The control nodes must operate on an open standards secure (WiSun) IEEE 802.15.4g wireless mesh based multi-application network with embedded Itron (formerly Silver Springs Network) communications.

The control nodes shall support Frequency-Hopping Spread Spectrum up to 300kbps mesh networking as well as automatic data routing with self-configuration, auto-healing & redundant uplinks.

The nodes shall operate within the City's Itron network.

9. SECURITY

The control nodes must have full application and link-layer security with full PKI (Public Key Infrastructure), Advanced Encryption Standard AES-128 or AES 256, and embedded firewall which includes integrated multi-layer security with end-to-end encryption and capability to prohibit unauthorized access.

10. PACKAGING

10.1 Carton. Each smart lighting control node shall be individually packed in a carton of adequate strength and properly secured and protected to prevent damage to the unit during shipment, handling and storage. A master carton shall contain multiple units, each in individual cartons.

10.2 Marking. Each carton shall be clearly marked on the outside with the legend "SMART LIGHTING INTERNAL CONTROL NODE", "SMART LIGHTING EXTERNAL CONTROL NODE", or "SMART LIGHTING CIRCUIT NODE" (or similar as appropriate), with the number of units in the carton: volt-ampere load rating, voltage, manufacturer's name and catalogue number, and shipping or manufacturing date.

LUMINAIRE SPECIFICATION FOR ARTERIAL STREETS - OPPOSITE

SUBJECT

This specification states the requirements for non-ornamental Light Emitting Diode (LED) arterial street lighting luminaires. The specified LED luminaires will be used on Chicago arterial streets opposite system. The LED luminaires will be integrated into a centralized lighting management system. The luminaire manufacturer must demonstrate at least a ten year history of manufacturing LED residential street luminaires by providing a list of prior projects with project description, date, location, quantities and reference contact information. The manufacturer must also demonstrate the capacity to supply the quantities required for the contract in a timely manner.

GENERAL

A. References:

American National Standards Institute (ANSI)

- ANSI C78.377-2015, “American National Standard for Electric Lamps—Specifications for the Chromaticity of Solid State Lighting (SSL) Products”
- ANSI C82.77-10-2014, “American National Standard for Lighting Equipment—Harmonic Emission Limits—Related Power Quality Requirements”
- ANSI C136.2-2015, “American National Standard for Roadway and Area Lighting Equipment—Dielectric Withstand and Electrical Transient Immunity Requirements”
- ANSI C136.10-2010, “American National Standard for Roadway and Area Lighting Equipment—Locking-Type Control Devices and Mating Receptacles—Physical and Electrical Interchangeability and Testing”
- ANSI C136.15-2015, “American National Standard for Roadway and Area Lighting Equipment—Luminaire Field Identification”
- ANSI C136.22-2004 (R2009, R2014), “American National Standard for Roadway and Area Lighting Equipment—Internal Labeling of Luminaires”
- ANSI C136.25-2013, “American National Standard for Roadway and Area Lighting Equipment—Ingress Protection (Resistance to Dust, Solid Objects and Moisture) for Luminaire Enclosures”
- ANSI C136.30-2015, “American National Standard for Roadway and Area Lighting Equipment—Pole Vibration”
- ANSI C136.31-2015, “American National Standard for Roadway and Area Lighting Equipment—Luminaire Vibration”
- ANSI C136.37-2011, “American National Standard for Solid State Light Sources Used in Roadway and Area Lighting”
- ANSI C136.41-2013, “American National Standard for Roadway and Area Lighting Equipment—Dimming Control Between an External Locking Type Control and Ballast or Driver”
- ASTM B85/B85M-14, “Standard Specification for Aluminum-Alloy Die Castings”

- ASTM B117-16, “Standard Practice for Operating Salt Spray (Fog) Apparatus”
- ASTM D523-14, “Standard Test Method for Specular Gloss”
- ASTM D1654-08, “Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments”
- ASTM G154-12a, “Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials”

Illuminating Engineering Society of North America (IES)

- ANSI/IES LM-63-02, “Standard File Format for Electronic Transfer of Photometric Data”
- IES LM-79-08, “Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products”
- ANSI/IES LM-80-15, “IES Approved Method: Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays and Modules”
- ANSI/IES RP-8-14, “Roadway Lighting”
- IES TM-21-11 (with Addendum B), “Projecting Long Term Lumen Maintenance of LED Light Sources”

Institute of Electrical and Electronics Engineers (IEEE)

- IEEE Std 1789-2015, “IEEE Recommended Practices for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers”

International Electrotechnical Commission (IEC)

- IEC 60929:2011 (with Amendment 1), “AC and/or DC-supplied electronic control gear for tubular fluorescent lamps - Performance requirements”

Underwriters Laboratories (UL)

- ANSI/UL 1598 (3rd Edition), “Luminaires”

B. Submittal Requirements:

The Contractor must submit the following information pertaining to each specified luminaire type within fifteen (15) days of request:

1. Completed ATTACHMENT B – Submittal Form

2. Product Data Sheets

- a) Luminaire data sheets – including summary product description, dimensioned outline drawings, and nominal characteristics including but not limited to: initial luminous flux (lumens), input power (watts), input voltage range (volts), LED drive current (milliamps), correlated color temperature (kelvins), color rendering index, effective projected area (square feet) and weight (pounds).
- b) LED Driver data sheet – including information described in LED Driver Requirements Section III-I-3.
- c) LED light source data sheet
- d) Surge protection device data sheet - if applicable

3. Photometric Performance Data

The manufacturer must provide photometric calculations, as part of each luminaire's submittal package, that demonstrate the luminaire's photometric performance will meet or exceed the photometric requirements listed in this specification. The submitted lighting calculations must include point-by-point illuminance, luminance and veiling luminance data, as well as listings of all indicated averages and ratios. Photometric reports must include the following information and be in accordance with the standards listed below:

- a) IES LM-79-08 photometric report that includes measured values for initial luminous flux, input power, correlated color temperature, and color rendering index.
- b) ANSI/IES LM-63-02 electronic format photometric file that corresponds to the LM-79 report.
- c) LM-63 photometric calculations that demonstrate compliance with the illumination requirements specified herein using the LM-63 file. Calculation grids and observer locations not specified herein must be in accordance with ANSI/IES RP-8-14.
- d) IES TM-21-11 calculations that derive the lumen maintenance (lamp lumen depreciation or LLD) factor applied to photometric calculations specified herein.
 - ANSI/IES LM-80-15 and in-situ temperature measurement testing (ISTMT) reports containing data used in TM-21 calculations must also be submitted.
 - TM-21 calculations must apply to the maximum LED case temperature from ISTMT, shall not extrapolate beyond six times the duration of available LM-80 test data, and must be submitted in the spreadsheet format of the ENERGY STAR TM-21 calculator (https://www.energystar.gov/products/spec/luminaires_specification_version_2_0_pd).

LM-79, ISTMT, and LM-80 reports must correspond directly to submitted luminaires, and must

be produced by test laboratories that satisfy the Testing Laboratory Requirements of the DesignLights Consortium (www.designlights.org/content/QPL/ProductSubmit/LabTesting).

ISTMT must be conducted in accordance with the DesignLights Consortium Manufacturer's Guide (<https://www.designlights.org/content/qpl/productssubmit>).

ISTMT shall be conducted in an ambient temperature of 25 ± 5 °C. Ambient temperature variations above or below 25 °C shall be respectively subtracted from or added to temperatures recorded at points on the luminaire.

4. Safety Certification - file number indicating compliance with UL 1598. Applicable testing bodies are determined by the US Occupational Safety Health Administration (OSHA) as Nationally Recognized Testing Laboratories (NRTL) and include: CSA (Canadian Standards Association), ETL (Edison Testing Laboratory), and UL (Underwriters Laboratory).
5. Vibration Testing the luminaire must comply with ANSI C136.31 at Vibration Test Level 2 (3.0 G).
6. Product Samples - at least two samples of each luminaire that the contractor proposes to use must be submitted to the City. All samples must be representative production units and be supplied at no cost to the City.

C. Assembly.

Each luminaire must be delivered completely assembled, wired, and ready for installation.

D. Warranty.

The luminaire manufacturer must warrant the performance and construction of luminaires to meet the requirements of this specification, and must warrant all parts, components and appurtenances against defects due to design, workmanship or material developing within a period of ten (10) years from the date of acceptance by the City.

- The inability of a luminaire to be dimmed will constitute a luminaire failure.
- Failure of 10% or more of the LED light sources (packages or arrays/modules) in a luminaire will constitute a luminaire failure.
- The warranty must apply for application on all of the City's existing electrical systems, both grounded and ungrounded.
- During the warranty period the City may, from time to time, test a random sampling of 10-20 luminaires for verification of light output per IES LM-79 and to test dimming functionality for a given luminaire population. The percentage of luminaires not performing as required in the random sampling will be applied to the total population quantity to determine the number of new luminaire replacements that must be delivered to the City by the manufacturer, without expense to the City.

CONSTRUCTION

A. Weight and Area

The net weight of these luminaires must not be more than 16 pounds. The effective projected area (EPA) must not exceed 0.50 square feet.

B. Housing.

The preferred luminaire housing material is die-cast aluminum alloy meeting ASTM Specification A380. Alternate materials may be considered. The housing must enclose the mounting hardware, LED arrays, control receptacle, terminal board, and electronic driver. The housing must include a surface to facilitate

leveling with a spirit level. The housing must have integral heat sink characteristics, such that all enclosed components will operate within their designed operating temperatures under expected service conditions. No external or removable heat shields or heat sinks; are permitted. The housing must be designed to encourage water shedding. The housing must be designed to minimize dirt and bug accumulation on the optic surface.

C. Refractor.

The refractor shall be crystal clear, heat-resistant, tempered safety glass, well annealed, homogeneous, and free from imperfections and striations. It must be flat.

D. Mounting Provisions.

The luminaire must include a heavy gauge slip fitter clamping assembly suitable for secure attachment over the end of a two (2) inch 2" IP (2.375" OD) steel pipe with an approved means of clamping it firmly in mounting bracket. The slip fitter mounting clamp must contain an approved shield around the pipe entrance to block the entry of birds.

E. Access Door-Panel.

An access door panel allowing access to the terminal strip and LED driver must be provided. A die-cast aluminum door-panel composed of aluminum alloy A380 is preferred; alternate materials may be considered. The door-panel must be hinged to the luminaire housing and suitably latched and fastened at the closing end. It must be made to be removed easily. The hinge and fastening devices must be captive parts which will not become disengaged from the door panel.

F. Hardware.

All machine screws, locknuts, pins and set screws necessary to make a firm assembly, and for its secure attachment to the mast arm, must be furnished in place. All hardware must be of stainless steel, zinc plated steel, copper silicon alloy or other non-corrosive metal, and where necessary must be suitably plated to prevent electrolytic action by contact with dissimilar metals.

G. Finish.

The luminaire must have a polyester powder coat with a minimum 2.0 mil thickness to resist corrosion. Surface texture and paint quality will be subject to approval. Color must be as specified in the order. A paint chip must be submitted as a sample upon request. The finish must exceed a rating of six per ASTM D1654 after 1000 hours of testing per ASTM B117. The coating must exhibit no greater than 30% reduction of gloss per ASTM D523 after 500 hours of QUV testing at ASTM G154 Cycle 6.

H. Ingress Protection.

1. The luminaire electric compartment housing must have an ingress protection rating of IP54 or better as described in ANSI C136.25-2013). The optical system must have a minimum rating of IP 66.
2. The luminaire must be listed for wet locations by a U.S. Occupational Safety Health Administration (OSHA) Nationally Recognized Laboratory (NRTL) and have a safety certification and file number indicating compliance with UL 1598.

I. General Luminaire Requirements

1. The luminaire must be rated to operate between -40° to +50° Celsius.
2. The luminaire must have the option of adding a house side shield. The shield should be designed to be easily installed in the field. The house side shield must be composed of a sturdy material capable of

withstanding vibrations and weather conditions. The shield must cut off light trespass at approximately one mounting height behind the pole.

3. The luminaire must meet the requirements of ANSI C136.22 for internal labeling. A bar code with pertinent information for warranty and maintenance must be attached to the inside of the housing. A separate bar code label must be on the driver.
4. The luminaire must be able to provide pertinent product information, for warranty and maintenance purposes, in a digital format that is compliant with the 0-10 VDC Node as per Section III-I-3-h) . This information will be transmitted through the networked Lighting Management control system.

J. Electrical Components

1. LED Optical Arrays

- a) The LED arrays must be properly secured at the factory and must not require field adjustment for optimum photometric performance.

2. Terminal Block

- a) A terminal block of high grade molded plastic of the barrier or safety type must be mounted within the housing in a readily accessible location.
- b) Terminal block wiring; all necessary terminals, pre-wired to all luminaire components, must be provided.
- c) Terminal block terminals must have copper plated or brass plated, clamp-type pressure connectors of an approved type for "line" connections, to accommodate wire sizes from #12 to #8 A.W.G.
- d) Terminal block terminals for internal component connections must be either the screw-clamp or quick disconnect type.

3. LED Driver:

- a) Voltage. The electronic driver must operate at an input voltage range of between 120 and 277 volts, 60 Hertz. It must automatically sense the input voltage and adjust the output accordingly. The City uses nominal input voltages of 120, 208, and 240 for street lighting. When operated at any supply voltage between 80 percent and 110 percent of its rated supply voltage and at rated input frequency, a driver shall provide current and/or voltage regulation that equals or exceeds the values specified by the manufacturer.
- b) Electrical Safety. Luminaires must operate at or below the Low-Risk Level, as defined in Figure 18 of IEEE 1789-2015. This requirement must be satisfied across the dimming range.
- c) Power Factor (PF). The power factor of the driver over the design range of input voltages specified above must be in accordance to ANSI C82.77-2014. PF must be ≥ 0.9 .
- d) Total Harmonic Distortion (THD). The driver input current must have specified THD in accordance to ANSI C82.77-2014. THD must be $\leq 20\%$.
- e) Thermal Protection. The driver must be thermally protected to shut off when operating temperatures reach unacceptable levels.

- f) Electromagnetic Interference. Luminaire must comply with the FCC radiation emission limits for Class B digital devices given at 47 CFR 15.109.
- g) Electrical Transient Immunity.
 - o Dielectric Withstand Testing - luminaire must meet the performance requirements specified in ANSI C136.2-2015 for dielectric withstand, using the DC test level and configuration.
 - o Electrical Transient Immunity - luminaire must meet the performance requirements specified in ANSI C136.2-2015 for electrical transient immunity, using the Basic 6kV/3kA (120 Strikes) and the Enhanced (10 kV / 5 kA) combination wave test level.
 - o Transient Immunity Testing Requirements
 - o During electrical transient immunity testing, the device under test (DUT) must: be connected to the power source through a series coupler/decoupler network (CDN), using a two-wire (hot or hot/neutral) connection between both the power supply and CDN input and the CDN output and DUT.
 - o If AC mains is used to power the DUT, the input waveform must be characterized and documented both before and after electrical transient immunity testing, with the DUT operating at rated full output.
 - o For Pre-Test DUT Characterization, the diagnostic measurements shall, at a minimum, include the following: real power, input current (RMS; Root-Means-Square), power factor, and current distortion factor (THD-I Total Harmonic Distortion) when operating at rated full output.
 - o Manufacturer must indicate on submittal form whether failure of the electrical transient immunity system can possibly result in disconnect of power to luminaire.
- h) Dimming Capability. The driver must be capable of dimming. The dimming range must be 10% to 100% of full output. The digital lighting interface used for dimming must be 0-10 VDC as per the requirements of ANSI C136.41-2013. There must be a minimum of 100 dimming steps between the top and bottom of the dimming range.

4. Wiring.

- a) All components must be completely factory wired with non-fading, color coded leads. These leads must be insulated with an approved class of insulation and must be #16 AWG conductor at a minimum.
- b) All wires within a single circuit path must be of the same size.
- c) No wire-nut splicing will be allowed.
- d) No unnecessary splices will be allowed.
- e) Quick disconnects must be provided for all components.
- f) All wires must be properly terminated.

5. Control Device Receptacle and Cap.

- a) Twist-lock Receptacle for a control device that meets ANSI C136.41 must be mounted in the top of the housing with provision for proper positioning of the control device.
- b) 5-pin Receptacle. The luminaire control receptacle must be fully prewired and compliant with ANSI C136.41-2013.
- c) 3-prong Shorting Cap that meets ANSI C136.10 must be provided.
- d) Receptacle Wire Leads must all be properly terminated.
- e) Receptacle Repositioning. The receptacle must be able to be repositioned without the use of tools.
- f) Control Devices Not Included in LED Specifications. Whereas specifications for control receptacles are included, specifications for control devices are not. The control device performance requirements are part of the lighting management system specifications in the Smart Lighting Project Technology specifications.

6. Component Mounting.

All electrical components must be securely mounted in such manner that individual components can be easily maintained or replaced. Permanent straps or tie-wraps will not be permitted. The entire assembly should be easily disconnected and removed for replacement.

PHOTOMETRIC REQUIREMENTS

1. Light Pollution.

To limit light pollution, the submitted luminaires must not emit any light above the horizon (0 lumens at angles $\geq 90^\circ$ from luminaire nadir).

2. Lumen Maintenance.

- a) LED arrays must deliver a minimum of 90% of initial lumen output at 36,000 hours of operation.

- b) Light Loss Factor (LLF) < 1.0. Calculations for maintained values, i.e. $LLF = LLD \times LDD \times LAT$.

(1) Lamp Lumen Depreciation (LLD) calculated at 60,000 hours as per Section II-B-3-d above,

(2) Luminaire Dirt Depreciation (LDD) ≤ 0.90 , and

(3) Luminaire Ambient Temperature (LAT) ≤ 0.96

Luminaires with less than 10,000 hours of available LM-80 test data may be submitted for consideration but must be clearly indicated as such.

3. Color Attributes

- a) Color Rendering Index (CRI) shall be no less than 70.

- b) Nominal Correlated Color Temperature (CCT) shall be 3000K as defined by ANSI C78.377

and described below:

Manufacturer-Rated Nominal CCT (K)	Allowable IES LM-79 Chromaticity Values	
	Measured CCT (K)	Measured Duv
3,000	2,870 to 3,220	-0.006 to 0.006

4. City of Chicago Typical Lighting Context - Arterial Streets - Opposite pattern pole spacing.

a) Performance Requirements:

Roadway Luminance:

Average Luminance	1.7 cd/m ²
Uniformity Ratio Av/Min	3:1
Uniformity Ratio Max/Min	5:1
Max Veiling Luminance	0.3

Sidewalks for Opposite arterial:

Default AVG Horizontal Illuminance	0.5
AVG MIN Uniformity Ratio	4:1

Light Trespass Limits:

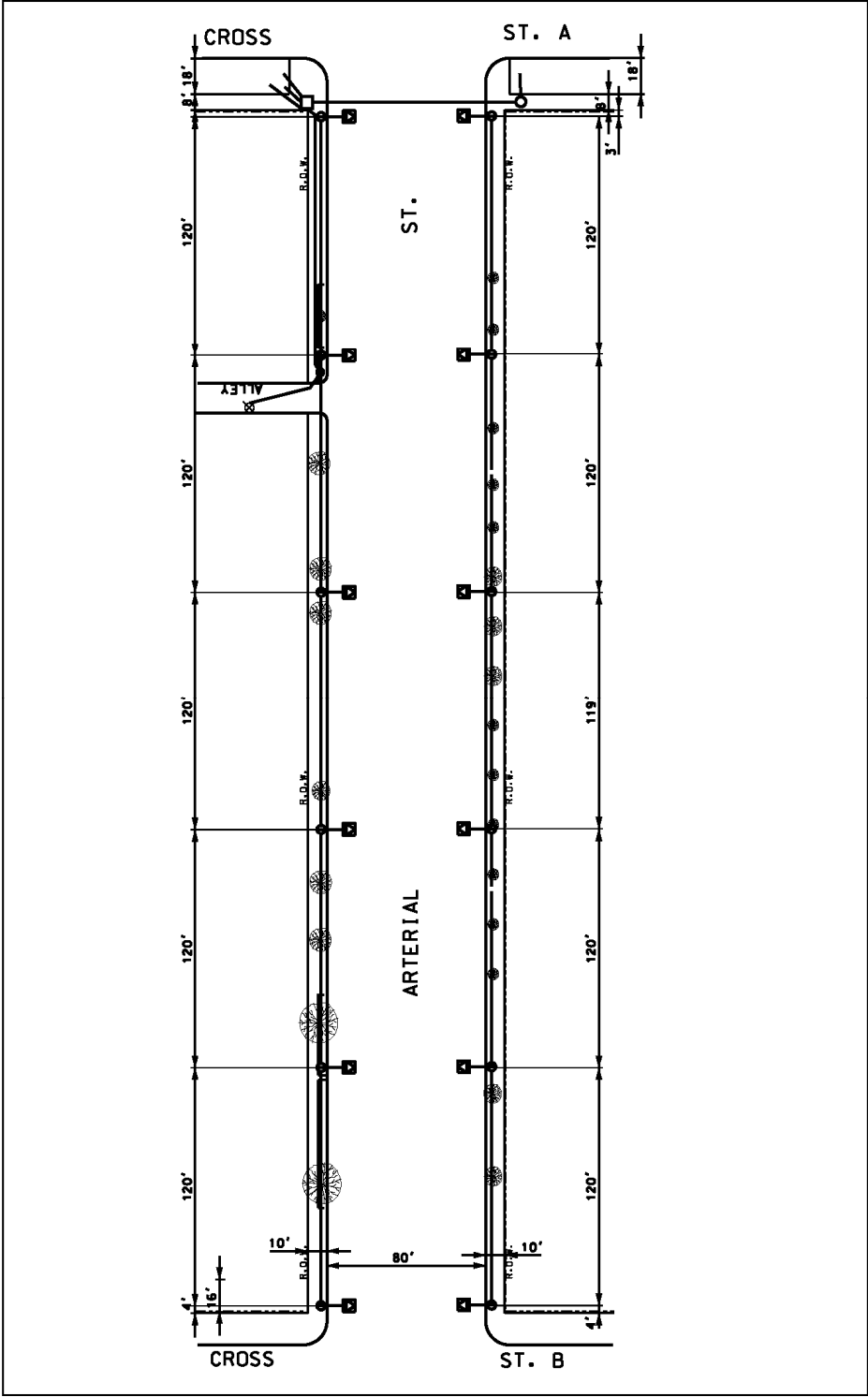
Vertical Illuminance	≤0.30
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- b) The photometrics shall be run for the specific requirements. If the luminaires are to be obtained for no specific project, the luminaires must meet the performance requirements for the following physical conditions:

Right-of-way	100'
Curb-to-curb	80'
Mounting height	33'
Setback	3'
Arm length	12'
Opposite Pattern:	
Pole Spacing	120'

See ATTACHMENT A for Arterial street opposite layout.

ATTACHMENT A – Arterial Street Opposite Layout



ATTACHMENT B - Product Submittal Form

Lighting Context	Arterial Opposite Pattern		
<i>Product Information Description</i>	<i>Product Data (Summary)</i>		<i>Submittal Reference Document</i>
Luminaire Designation			
Luminaire Manufacturer			
Luminaire Model Number			
Luminous Flux – initial	lumens		
Luminaire input power—initial	watts		
Luminaire input power—maintained	watts		
Luminaire input voltage- nominal range	volts		
LED drive current - initial	milliamps		
LED drive current - maintained	milliamps		
CCT (correlated color temperature)	kelvin		
CRI (color rendering index)			
EPA (effective projected area) - nominal	sq. ft.		
Luminaire Weight - nominal	lbs.		
Control Interface	<input type="checkbox"/> ANSI C136.41, 7-pin		
LED Driver – dimming capability	<input type="checkbox"/> Dimmable, 0-10 VDC		
LED driver- rated life	years		
Electrical transient immunity ANSI C136.2 combination wave test level	<input type="checkbox"/> Basic (6kV/3kA)	<input type="checkbox"/> Enhanced (10kV / 5kA)	<input type="checkbox"/> Elevated (20kV/10kA)
Vibration Test-ANSI C136.31	<input type="checkbox"/> Level 2		
Luminaire warranty period	years		
IES LM-80 test duration	hours		IES LM-80-15 report
LED lumen maintenance at 36,000 hours	%		TM-21 calculator
Max. LED case temperature	degrees Celsius		ISTMT report

**ROADWAY LED LUMINAIRE:
ORNAMENTAL ACORN FOR ARTERIAL
STREETS**

SUBJECT

- A. This specification states the requirements for an ornamental Acorn LED street light luminaire. The luminaire shall be for arterial street lighting. The overall shape of the luminaire shall be historic acorn. The LED luminaires will be integrated into a centralized lighting management system. The luminaire shall be mounted on a tenon at a mounting height of 14, 16 or 23 feet above grade and be similar to an IES Type II/III medium non-cutoff distribution. The luminaire will be used to provide roadway lighting for arterial streets.

GENERAL

B. References

American National Standards Institute (ANSI)

- ANSI C78.377-2015, "American National Standard for Electric Lamps—Specifications for the Chromaticity of Solid State Lighting (SSL) Products"
- ANSI C82.77-10-2014, "American National Standard for Lighting Equipment—Harmonic Emission Limits—Related Power Quality Requirements"
- ANSI C136.2-2015, "American National Standard for Roadway and Area Lighting Equipment—Dielectric Withstand and Electrical Transient Immunity Requirements"
- ANSI C136.10-2010, "American National Standard for Roadway and Area Lighting Equipment—Locking-Type Control Devices and Mating Receptacles—Physical and Electrical Interchangeability and Testing"
- ANSI C136.15-2015, "American National Standard for Roadway and Area Lighting Equipment—Luminaire Field Identification"
- ANSI C136.22-2004 (R2009, R2014), "American National Standard for Roadway and Area Lighting Equipment—Internal Labeling of Luminaires"
- ANSI C136.25-2013, "American National Standard for Roadway and Area Lighting Equipment—Ingress Protection (Resistance to Dust, Solid Objects and Moisture) for Luminaire Enclosures"
- ANSI C136.31-2015, "American National Standard for Roadway and Area Lighting Equipment—Luminaire Vibration"
- ANSI C136.37-2011, "American National Standard for Solid State Light Sources Used in Roadway and Area Lighting"
- ANSI C136.41-2013, "American National Standard for Roadway and Area

Lighting Equipment–Dimming Control Between an External Locking Type Control and Ballast or Driver”

- ASTM B85/B85M-14, “Standard Specification for Aluminum-Alloy Die Castings”
- ASTM B117-16, “Standard Practice for Operating Salt Spray (Fog) Apparatus”
- ASTM D523-14, “Standard Test Method for Specular Gloss”
- ASTM D1654-08, “Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments”
- ASTM G154-12a, “Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials”

Illuminating Engineering Society of North America (IES)

- ANSI/IES LM-63-02, “Standard File Format for Electronic Transfer of Photometric Data”
- IES LM-79-08, “Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products”
- ANSI/IES LM-80-15, “IES Approved Method: Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays and Modules”
- ANSI/IES RP-8-14, “Roadway Lighting”
- IES TM-21-11 (with Addendum B), “Projecting Long Term Lumen Maintenance of LED Light Sources”

Institute of Electrical and Electronics Engineers (IEEE)

- IEEE Std 1789-2015, “IEEE Recommended Practices for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers”

International Electrotechnical Commission (IEC)

- IEC 60929:2011 (with Amendment 1), “AC and/or DC-supplied electronic control gear for tubular fluorescent lamps - Performance requirements”

Underwriters Laboratories (UL)

- ANSI/UL 1598 (3rd Edition), “Luminaires”

C. Submittal Requirements:

The bidder shall submit the following information pertaining to the specified luminaire:

- A. Completed ATTACHMENT B – Submittal Form
- B. Product Data Sheets.
 - a) Luminaire data sheets – including summary product description, dimensioned outline drawings, and nominal characteristics including but not limited to: initial luminous flux (lumens), input power (watts), input voltage range (volts), LED drive current (milliamps), correlated color temperature (kelvins), color rendering index, effective projected area (square feet) and weight (pounds).
 - b) LED Driver data sheet – including information described in LED Driver Requirements Section III-D-3.
 - c) LED light source data sheet

d) Surge protection device data sheet - if applicable

C. Photometric Performance Data

If requested by the chief Procurement Officer, the bidder shall provide photometric calculations, within fifteen (15) days of such request, that demonstrate the luminaire's photometric performance will meet or exceed the photometric requirements listed in this specification. The submitted lighting calculations must include point-by-point illuminance, luminance and veiling luminance data, as well as listings of all indicated averages and ratios. Photometric reports must include the following information and be in accordance with the standards listed below:

- a) IES LM-79-08 photometric report that includes measured values for initial luminous flux, input power, correlated color temperature, and color rendering index.
- b) ANSI/IES LM-63-02 electronic format photometric file that corresponds to the LM-79 report.
- c) LM-63 photometric calculations that demonstrate compliance with the illumination requirements specified herein using the LM-63 file. Calculation grids and observer locations not specified herein must be in accordance with ANSI/IES RP-8-14.
- d) IES TM-21-11 calculations that derive the lumen maintenance (lamp lumen depreciation or LLD) factor applied to photometric calculations specified herein.
 - ANSI/IES LM-80-15 and in-situ temperature measurement testing (ISTMT) reports containing data used in TM-21 calculations must also be submitted.
 - TM-21 calculations must apply to the maximum LED case temperature from ISTMT, shall not extrapolate beyond six times the duration of available LM-80 test data, and must be submitted in the spreadsheet format of the ENERGY STAR TM-21 calculator (https://www.energystar.gov/products/spec/luminaires_specification_version_2_0.pdf).

LM-79, ISTMT, and LM-80 reports must correspond directly to submitted luminaires, and must be produced by test laboratories that satisfy the Testing Laboratory Requirements of the Design Lights Consortium (www.designlights.org/content/QPL/ProductSubmit/LabTesting).

ISTMT must be conducted in accordance with the Design Lights Consortium Manufacturer's Guide (<https://www.designlights.org/content/qpl/productssubmit>).

ISTMT shall be conducted in an ambient temperature of 25 ± 5 °C. Ambient temperature variations above or below 25 °C shall be respectively subtracted from or added to temperatures recorded at points on the luminaire.

D. Safety Certification - file number indicating compliance with UL 1598. Applicable testing bodies are determined by the US Occupational Safety Health Administration (OSHA) as Nationally Recognized Testing Laboratories (NRTL) and include: CSA (Canadian Standards Association), ETL (Edison Testing Laboratory), and UL (Underwriters Laboratory).

E. Vibration Testing - the luminaire must comply with ANSI C136.31 at Vibration Test Level 1 (1.5 G).

F. Product Sample. Upon a request from the Chief Procurement Officer, a sample of the luminaire that the bidder proposes to submit must be delivered to the City, within fifteen (15) days of such a request.. Sample must be representative production unit and be supplied at no cost to the City.

D. Assembly.

Luminaire must be delivered completely assembled, wired, and ready for installation.

E. Warranty.

The luminaire manufacturer must warrant the performance and construction of luminaires to meet the requirements of this specification, and must warrant all parts, components and appurtenances against defects due to design, workmanship or material developing within a period of ten (10) years from the date of acceptance by the City.

- The inability of a luminaire to be dimmed will constitute a luminaire failure.
- Failure of 10% or more of the LED light sources (packages or arrays/modules) in a luminaire will constitute a luminaire failure.
- The warranty must apply for application on all of the City's existing electrical systems, both grounded and ungrounded. The luminaire must be operable with the

F. Manufacturing Experience and Capacity

G. The manufacturer must demonstrate at least a five year history of manufacturing LED roadway and outside area luminaires. The manufacturer must also demonstrate the capacity to supply the quantities required for the contract in a timely manner.

CONSTRUCTION

H. Capital and Finial

1. Material

- a) Each capital and finial shall be cast aluminum conforming to American Die casting Standard ADC-1-C9-83 grade 380.
- b) The capital shall fit over a 3" high by 3" O.D. tenon.
- c) The capital attachment to the tenon shall provide the structural integrity to hold the luminaire firmly in place during the vibrations anticipated due to passing heavily loaded vehicles, wind loading, and inclement weather.
- d) A minimum of 3/16" thickness of metal must be provided where the set screws are inserted to minimize the possibility of stripping the threads when the set screws are tightened into place.
- e) The set screws must be 5/16-18 stainless steel hex head screws. A minimum of three (3) set screws must be provided, evenly spaced at 120° apart.
- f) The finial shall be securely attached to the acorn globe such that it will remain in place during the vibrations described above.

- g) The casting must have smooth external surfaces free from protuberances, dents, cracks or other imperfections marring their appearance. Welding or plugging of casting defects is prohibited.
- h) Each casting must be die cast or made by the permanent mold process; sand castings will not be acceptable.
- i) Minimum thickness will be 3/16", and will be uniform within each casting and throughout all castings in an entire order. Inconsistencies in casting thickness will be cause for rejection of the entire lot.

2. Appearance

- a) The capital shall conform in appearance to that shown on Electrical Standard
- b) Similar designs must be approved by the Commissioner. The Commissioner's decision of what constitutes a similar design will be final.

I. Cast Housing and Fitter Painting

1. Oil and Grease Removal

- a) All metal surfaces must be washed with an alkaline detergent to remove any oils or grease.

2. Chemical Pretreatment

- a) The cleaned metal surfaces must be rinsed with de-ionized water
- b) Treated with a hot, pressurized phosphate wash and sealer
- c) Rinsed again with de-ionized water, and then dried by convection heat.

3. Exterior and Interior Coat

- a) A thermosetting, weathering, polyester powder coat must be applied electrostatically to all cleaned and treated surfaces to a uniform four mil thickness in a one coat application.
- b) This powder coat must be cured in a convection oven at a minimum 400°F to form a high molecular weight fusion bonded finish.

4. Alternate Methods

- a) Alternate coating methods may be reviewed and tested on a case-by-case basis. However, no coating method will be accepted unless the Commissioner judges such alternate to be equal to the coating herein specified

5. Durability

- a) Both the exterior and interior coats must be capable of passing 1,000 hours of salt spray exposure as per ASTM B117 in a 5% Na Cl (by weight) solution at 95°F and 95% relative humidity without blistering.
- b) Before test, the panel must be scribed with an "X" down to bare metal.

6. Coating Measurement

- a) Measurement of coating thickness must be done in accordance with SSPC-Pa 2- 73T, "Measurement of Dry Paint Thickness with Magnetic Gauges", except that the lowest "single spot measurement" must not be less than 3.0 mils.

7. Color

- a) Preferred color will be gloss black. A 4" square color chip sample must be submitted for approval prior to fabrication.
- b) The chip sample must be of the same material as the capital, and must include the manufacturer's name and the manufacturer's color name as well.
- c) The sample must also include any other information which will be required to purchase the same color for the masts, mast arms and split pedestal bases.

J. Optical Assembly

1. Acorn Globe and Reflector

- a) The Globe shall be constructed of clear, V825 HID acrylic utilizing a slip-fit 1/2" overlap, two piece which eliminates a "butt-glue" seam appearance.
- b) The Globe must conform to that shown on Electrical Standard Drawing 912.
- c) The bottom optical section of the globe must have a neck opening of 7-1/4" at the smallest diameter and an outside dimension of 8" at the bottom; be a minimum of 12-3/4" in height and 16 1/2" in width at the top.
- d) The top section of the globe must be "Victorian" in appearance; a minimum of 13" in height and 16.313" in width with 100 horizontal prisms to evenly diffuse light. If so requested, a full top reflector of the same diameter as the globe shall be installed between the halves and secured to the globe. The top and bottom sections shall be secured in a slip-fit overlap design using four #10 -24 x 5/8 stainless steel pan head screws with four aluminum nutserts providing a mechanical lock. In addition, a sealant must be applied to the two halves to provide a dust-proof seal.
- e) The globe shall be mounted with four 5/16-18 hex head, stainless steel bolts with stop nuts mounted into the die cast fixture housing.
- f) The hex head bolts must securely contact an aluminum globe neck ring connected to the acorn globe. The globe must be clearly marked and keyed so that it will be properly installed to provide the required house side/street side photometrics. The mounting must afford the rigidity necessary to prevent the globe from twisting or rattling when subjected to the vibrating forces of passing elevated trains or heavily loaded vehicles. The mounting must not preclude any globe from being mutually interchangeable with any other globe intended for this function.
- g) A top reflector and a house-side reflector shall be provided, if requested.
- h) The reflectors shall be mounted to a removable bracket.

- i) The small dome shaped top reflector, approximately 6.5 inches in diameter and 3 inches deep shall be mounted on the bracket and attached by a spring clamp, or other suitable means.
- j) The side reflector shall be mounted to the same bracket. The reflectors shall be constructed of aluminum and polished to a high specular finish. Reflectance of the reflecting surfaces shall not be less than 75%. Measurements shall be made with a reflectometer using the fiber-optic method.

K. Electrical Components

1. LED Optical Array.

- a) The LED arrays shall be optimized for the required roadway photometrics. The arrays must be properly secured at the factory and must not require field adjustment for optimum photometric performance.
- b) The optical assembly shall consist of the LED array, the refractor, the refractor holder-door, gasketing, and all associated items.
- c) The LED optical assembly shall be rated IP66 for ingress protection for dust and water.
- d) The optical unit as a whole must provide as similar as an IES Medium Cut-off Type II/III distribution.

2. Terminal Block

- a) A terminal block of high grade board of molded phenolic plastic shall be mounted to the capital in a readily accessible location.
- b) Terminal block wiring; all necessary terminals, pre-wired to all luminaire components, must be provided.
- c) Terminal block terminals must have copper plated or brass plated, clamp-type pressure connectors of an approved type for "line" connections, to accommodate wire sizes from #12 to #8 A.W.G.
- d) Terminal block terminals for internal component connections must be either the screw-clamp or quick disconnect type.

3. LED Driver:

- a) Voltage.
 - The electronic driver must operate at an input voltage range of between 120 and 277 volts, 60 Hertz.
 - It must automatically sense the input voltage and adjust the output accordingly.
 - The City uses nominal input voltages of 120, 208, and 240 for street lighting.
 - When operated at any supply voltage between 80 percent and 110 percent of its rated supply voltage and at rated input frequency, a driver shall

provide current and/or voltage regulation that equals or exceeds the values specified by the manufacturer.

- b) Electrical Safety. Luminaires must operate at or below the Low-Risk Level, as defined in Figure 18 of IEEE 1789-2015. This requirement must be satisfied across the dimming range.
- c) Power Factor (PF). The power factor of the driver over the design range of input voltages specified above must be in accordance to ANSI C82.77-2014. PF must be ≥ 0.9 .
- d) Total Harmonic Distortion (THD). The driver input current must have specified THD in accordance to ANSI C82.77-2014. THD must be $\leq 32\%$.
- e) Thermal Protection. The driver must be thermally protected to shut off when operating temperatures reach unacceptable levels.
- f) Electromagnetic Interference. Luminaire must comply with the FCC radiation emission limits for Class B digital devices given at 47 CFR 15.109.
- g) Electrical Transient Immunity:
 - Dielectric Withstand Testing - luminaire must meet the performance requirements specified in ANSI C136.2-2015 for dielectric withstand, using the DC test level and configuration.
 - Electrical Transient Immunity - luminaire must meet the performance requirements specified in ANSI C136.2-2015 for electrical transient immunity, using the Enhanced (10 kV / 5 kA) combination wave test level.
 - Transient Immunity Testing Requirements:
 - During electrical transient immunity testing, the device under test (DUT) must: be connected to the power source through a series coupler/decoupler network (CDN), using a two-wire (hot or hot/neutral) connection between both the power supply and CDN input and the CDN output and DUT.
 - If AC mains is used to power the DUT, the input waveform must be characterized and documented both before and after electrical transient immunity testing, with the DUT operating at rated full output.
 - For Pre-Test DUT Characterization, the diagnostic measurements shall, at a minimum, include the following: real power, input current (RMS; Root-Means-Square), power factor, and current distortion factor (THD-I Total Harmonic Distortion) when operating at rated full output.
 - Manufacturer must indicate on submittal form whether failure of the electrical transient immunity system can possibly result in disconnect of power to luminaire.
- h) Dimming Capability. The driver must be capable of dimming. The dimming

range must be 10% to 100% of full output. The digital lighting interface used for dimming must be 0-10 VDC as per the requirements of ANSI C136.41-2013. There must be a minimum of 100 dimming steps between the top and bottom of the dimming range.

4. Wiring.

- a) All components must be completely factory wired with non-fading, color coded leads. These leads must be insulated with an approved class of insulation and must be #16 AWG conductor at a minimum.
- b) All wires within a single circuit path must be of the same size.
- c) No wire-nut splicing will be allowed.
- d) No unnecessary splices will be allowed.
- e) Quick disconnects must be provided for all components.
- f) All wires must be properly terminated.

5. Component Mounting.

All electrical components must be securely mounted in such manner that individual components can be easily maintained or replaced. Permanent straps or tie-wraps will not be permitted. The entire assembly should be easily disconnected and removed for replacement.

PHOTOMETRIC REQUIREMENTS

L. Light Pollution.

To limit light pollution, the submitted luminaires must not emit any light above the horizon (0 lumens at angles $\geq 90^\circ$ from luminaire nadir).

M. Lumen Maintenance.

1. LED arrays must deliver a minimum of 90% of initial lumen output at 36,000 hours of operation.
2. Light Loss Factor (LLF) < 1.0. Calculations for maintained values, i.e. $LLF = LLD \times LDD \times LAT$.
 - a) Lamp Lumen Depreciation (LLD) calculated at 60,000 hours as per Section II-B-3-d above,
 - b) Luminaire Dirt Depreciation (LDD) ≤ 0.90 , and
 - c) Luminaire Ambient Temperature (LAT) ≤ 0.96

Luminaires with less than 10,000 hours of available LM-80 test data may be submitted for consideration but must be clearly indicated as such.

N. Color Attributes

1. Color Rendering Index (CRI) shall be no less than 65.
2. Nominal Correlated Color Temperature (CCT) shall be 3000K as
300

defined by ANSI C78.377 and described below:

Manufacturer- Rated Nominal CCT (K)	Allowable IES LM-79 Chromaticity Values	
	Measured CCT (K)	Measured Duv
3000	2870 to 3220	-0.006 to 0.006

A. City of Chicago Typical Ornamental Lighting Contexts

ATTACHMENT A (below) lists the photometric performance requirements for luminaires used in the following typical municipal outdoor arterial ornamental lighting applications:

- Arterial Streets – two-sided opposite pole spacing
- Arterial Streets – two-sided staggered pole spacing

ATTACHMENT A – Photometric Performance Requirements

TYPICAL LIGHTING CONTEXT	ARTERIAL		
POLE CONFIGURATION*	OPPOSITE	STAGGERED	
RIGHT OF WAY (Width)	80 ft.	66 ft.	66 ft.
IES PAVEMENT CLASS	R3	R3	R3
STREET WIDTH (Curb to Curb)	60 ft.	48 ft.	48 ft.
LANES (Incl. Parking & Median)	6	4	4
PARKWAY (Width)	4 ft.	N/A	N/A
SIDEWALK (Width)	6 ft.	9 ft.	9 ft.
HEIGHT TO LUMINAIRE	23 ft.	23 ft.	16 ft.
MAST ARM LENGTH	1ft.	1ft.	1ft.
POLE SETBACK (From Curb to Center of Pole)	4ft.	4ft.	4ft.
IN-LINE POLE SPACING	125 ft.	200 ft.	X?x ft.
LUMINAIRE REQUIREMENTS	OPPOSITE	STAGGERED	
Max Input Power - Default /Normal Luminance (Watts)	180	180	180
Default/Normal AVG. Luminance (cd/m ²)	≥1.7	≥1.7	≥1.7
AVG/MIN Uniformity Ratio	≤ 3:1	≤ 3.5:1	≤ 3.5:1
MAX/MIN Uniformity Ratio	≤ 5:1	≤ 6:1	≤ 6:1
MAX Veiling Luminance Ratio	≤ 0.5	≤ 0.5	≤ 0.5
AVG. Boosted Luminance (cd/m ²) [Add-Alternate]	≥2.5	≥2.5	≥2.5
SIDEWALK			
Default AVG. Horizontal Illuminance (fc)	≥0.50	≥0.50	≥0.50
AVG.MIN Uniformity Ratio (Horizontal Illuminance)	≤ 4:1	≤ 4:1	≤ 4:1
LIGHT TRESPASS RESTRICTIONS - (as measured in a vertical plane 10' beyond ROW ≤3' height)			
MAX Vertical Illuminance	≤ 0.3	≤ 0.30	≤ 0.30

ATTACHMENT B - Product Submittal Form

Lighting Context	e.g. Arterial Ornamental Wide		
Product Information Description	Product (Summary)	Data	Submittal Reference Document
Luminaire Designation			
Luminaire Manufacturer			
Luminaire Model Number			
Luminous Flux – initial	lumens		
Luminaire input power—initial	watts		
Luminaire input power—maintained	watts		
Luminaire input voltage- nominal range	volts		
LED drive current - initial	milliamps		
LED drive current - maintained	milliamps		
CCT (correlated color temperature)	kelvin		
CRI (color rendering index)			
EPA (effective projected area) nominal	-sq. ft.		
Luminaire Weight - nominal	lbs.		
Control Interface	<input type="checkbox"/> ANSI C136.41, 7-pin		
LED Driver – dimming capability	<input type="checkbox"/> Dimmable, 0-10V	<input type="checkbox"/> Dimmable, DALI	
LED driver- rated life	years		
Electrical transient immunity ANSI C136.2 combination wave test level	<input type="checkbox"/> Basic (6kV/3kA)	<input type="checkbox"/> Enhanced (10kV / 5kA)	<input type="checkbox"/> Elevated (20kV/10kA)
Vibration Test-ANSI C136.31	<input type="checkbox"/> Level 2		
Luminaire warranty period	years		
IES LM-80 test duration	hours		IES LM-80-15 report
LED lumen maintenance at 36,000 hours			TM-21 calculator
Max. LED case temperature		degrees Celsius	ISTMT report

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 shall 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 shall begin training on the project as soon as the start of work that utilizes the relevant trade skill and the TPG trainee shall 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 shall promptly notify the IDOT District EEO Officer for the Contract that the TPG's involvement in the Contract has ended. The Contractor shall 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 shall 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 shall 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 1.

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 shall 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 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 shall 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 shall 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 shall 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 shall 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

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 Lincolnwood

City of Chicago

The entities listed above and their officers, employees, and agents shall be indemnified and held harmless in accordance with Article 107.26.

State of Illinois
DEPARTMENT OF TRANSPORTATION
Bureau of Local Roads & Streets
SPECIAL PROVISION
FOR
LOCAL QUALITY ASSURANCE/ QUALITY MANAGEMENT QC/QA
Effective: January 1, 2022

Replace the first five paragraphs of Article 1030.06 of the Standard Specifications with the following:

“1030.06 Quality Management Program. The Quality Management Program (QMP) will be Quality Control / Quality Assurance (QC/QA) according to the following.”

Delete Article 1030.06(d)(1) of the Standard Specifications.

Revise Article 1030.09(g)(3) of the Standard Specifications to read:

“(3) If core testing is the density verification method, the Contractor shall provide personnel and equipment to collect density verification cores for the Engineer. Core locations will be determined by the Engineer following the document “Hot-Mix Asphalt QC/QA Procedure for Determining Random Density Locations” at density verification intervals defined in Article 1030.09(b). After the Engineer identifies a density verification location and prior to opening to traffic, the Contractor shall cut a 4 in. (100 mm) diameter core. With the approval of the Engineer, the cores may be cut at a later time.”

Revise Article 1030.09(h)(2) of the Standard Specifications to read:

“(2) After final rolling and prior to paving subsequent lifts, the Engineer will identify the random density verification test locations. Cores or nuclear density gauge testing will be used for density verification. The method used for density verification will be as selected below.

Density Verification Method	
<input checked="" type="checkbox"/>	Cores
<input type="checkbox"/>	Nuclear Density Gauge (Correlated when paving ≥ 3,000 tons per mixture)

Density verification test locations will be determined according to the document “Hot-Mix Asphalt QC/QA Procedure for Determining Random Density Locations”. The density testing interval for paving wider than or equal to 3 ft (1 m) will be 0.5 miles (800 m) for lift thicknesses of 3 in. (75 mm) or less and 0.2 miles (320 m) for lift thicknesses greater than 3 in. (75 mm). The density testing interval for paving less than 3 ft (1 m) wide will be 1 mile (1,600 m). If a day’s paving will be less than the prescribed density testing interval, the length of the day’s paving will be the interval for that day. The density testing interval for mixtures used for patching will be 50 patches with a minimum of one test per mixture per project.

If core testing is the density verification method, the Engineer will witness the Contractor coring, and secure and take possession of all density samples at the

density verification locations. The Engineer will test the cores collected by the Contractor for density according to Illinois Modified AASHTO T 166 or AASHTO T 275.

If nuclear density gauge testing is the density verification method, the Engineer will conduct nuclear density gauge tests. The Engineer will follow the density testing procedure detailed in the document "Illinois Modified ASTM D 2950, Standard Test Method for Density of Bituminous Concrete In-Place by Nuclear Method".

A density verification test will be the result of a single core or the average of the nuclear density tests at one location. The results of each density test must be within acceptable limits. The Engineer will promptly notify the Contractor of observed deficiencies."

Revise the seventh paragraph and all subsequent paragraphs in Section D. of the document "Hot-Mix Asphalt QC/QA Initial Daily Plant and Random Samples" to read:

"Mixtures shall be sampled from the truck at the plant by the Contractor following the same procedure used to collect QC mixture samples (Section A). This process will be witnessed by the Engineer who will take custody of the verification sample. Each sample bag with a verification mixture sample will be secured by the Engineer using a locking ID tag. Sample boxes containing the verification mixture sample will be sealed/taped by the Engineer using a security ID label."

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
2420 West Iles Avenue; Post Office Box 19276; Springfield, IL 62794-9276

Division of Public Water Supplies

Telephone 217/782-1724

PUBLIC WATER SUPPLY CONSTRUCTION PERMIT

SUBJECT: LINCOLNWOOD (IL0311650)

Permit Issued to:
Village of Lincolnwood
6900 Lincoln Avenue
Lincolnwood, IL 60712

PERMIT NUMBER: 1206-FY2025

DATE ISSUED: May 22, 2025

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: Christopher B. Burke Engineering, Ltd.
NUMBER OF PLAN SHEETS: three
TITLE OF PLANS: "Devon Avenue Improvements"
APPLICATION RECEIVED DATE: April 23, 2025

PROPOSED IMPROVEMENTS:

The installation of approximately 360 feet of 8-inch water main.

ADDITIONAL CONDITIONS:

1. When replacing water mains with lead service lines or partial lead service lines connected to them, the owner or operator of the community water supply shall provide the owner or operator of each potentially affected building that is serviced by the affected lead service lines or partial lead service lines, as well as the occupants of those buildings, with an individual written notice. The lead informational notice shall be provided at least 14 days prior to permitted water main work. The notification provided by the community water supply must satisfy the requirements of Section 17.12(jj) of the Act, 415 ILCS 5/17.12(jj). A copy of the notice used must be submitted to the Agency with the Application for Operating Permit.

The owner or operator of a community water supply planning to partially replace only the supplier-owned portion of the lead service line must notify the service line's owner, or the owner's authorized agent, and any non-owner residents the service line serves at least 45 days before the replacement. **The notice must explain that the supplier will replace the supplier-owned portion of the service line and offer to replace the customer-owned portion.**

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 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. (See standard condition #8 below)
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 of 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.
8. Division of Public Water Supply Construction Permits expire one year from date of issuance or renewal, unless construction has started. If construction commences within one year from date of issuance or renewal, the permit expires five years from the date of permit issuance or renewal. A request for extension shall be filed prior to the permit expiration date.

2. When the owner or operator of a community water supply replaces a water main, the community water supply shall identify all lead service lines connected to the water main and shall comply with the requirements of Section 17.12 of the Act, 415 ILCS 5/17.12 and Ill. Adm. Code, Title 35, Subtitle F, Section 611.354 for lead service line replacement. Galvanized service lines must also be replaced if the galvanized service line is or was connected downstream to the lead piping. The owner or operator of a community water supply must also replace any lead gooseneck, pigtail or connector it owns when encountered and offer to replace any customer-owned lead gooseneck, pigtail, or connector.

The owner or operator of a community water supply conducting a full lead service line replacement must comply with the requirements of Ill. Adm. Code, Title 35, Subtitle F, Section 611.354(e). Notification must be provided to the service line's owner, or the owner's authorized agent, and any non-owner residents the service line serves within 24 hours after completing the replacement. The notice must comply with the requirements of Ill. Adm. Code, Title 35, Subtitle F, Section 611.355(a). The supplier must inform consumers about service line and premise plumbing flushing using the procedure submitted with the Lead Service Line Replacement Plan. The owner or operator of a community water supply must provide the consumer with a pitcher filter or point-of-use treatment device to reduce lead, six-months of replacement cartridges, and use instructions before returning the replaced service line to service. If the lead service line serves more than one residence or multi-unit building, the owner or operator must provide a filter, six months of replacement cartridges and use instructions to every unit in the building. The owner or operator of a community water supply must offer to the consumer to collect a follow-up tap sample between three and six months after replacing the lead service line and provide the results to the consumer.

For any partial lead service line replacements, in addition to complying with the 45-day notification requirement before replacement, the supplier must provide notice complying with Ill. Adm. Code, Title 35, Subtitle F, Section 611.355(a) before returning a service line to service. The owner or operator of a community water supply conducting a partial lead service line replacement must also comply with the requirements 35 Ill. Adm. Code, Title 35, Subtitle F, Section 611.354(d). The supplier must inform consumers about service line and premise plumbing flushing using the procedure submitted with the Lead Service Line Replacement Plan. The owner or operator of a community water supply must provide the consumer with a pitcher filter or point-of-use treatment device to reduce lead, six-months of replacement cartridges, and use instructions before returning the replaced service line to service. If the lead service line serves more than one residence or multi-unit building, the owner or operator must provide a filter, six months of replacement cartridges and use instructions to every unit in the building. The owner or operator of a community water supply must offer to the consumer to collect a follow-up tap sample between three and six months after replacing the lead service line and provide the results to the consumer. When the owner or operator of a community water supply replaces a water main, the community water supply shall identify all lead service lines connected to the water main and shall comply with the requirements of Section 17.12 of the Act, 415 ILCS 5/17.12 and Ill. Adm. Code, Title 35, Subtitle F, Section 611.354 for lead service line replacement. Galvanized service lines must also be replaced if the galvanized service line is or was connected downstream to the lead piping. The owner or operator of a community water supply must also replace any lead gooseneck, pigtail or connector it owns when encountered and offer to replace any customer-owned lead gooseneck, pigtail, or connector.

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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 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. (See standard condition #8 below)
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 of 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.
8. Division of Public Water Supply Construction Permits expire one year from date of issuance or renewal, unless construction has started. If construction commences within one year from date of issuance or renewal, the permit expires five years from the date of permit issuance or renewal. A request for extension shall be filed prior to the permit expiration date.

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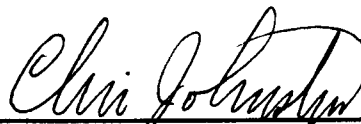
3. A statement must be submitted with the Application for Operating Permit indicating either that no full or partial lead service lines or galvanized requiring replacement were identified or that Section 17.12 of the Act and Ill. Adm. Code, Title 35, Subtitle F, Section 611.354 was complied with for this project.

4. 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. The application for operating permit and supporting documents can either be mailed to this office or emailed to EPA.PWSPermits@illinois.gov. Use of the email address is preferred.

5. The permit approval is for the Application, Schedule B, and 3 plan sheets received on April 23, 2025.

CJ:GAZ

cc: Christopher B. Burke Engineering, Ltd.
Elgin Regional Office
Cook County Health Department
IDPH/DEH – Plumbing and Water Quality Program



Chris Johnston, P.E.
Manager Permit Section
Division of Public Water Supplies

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS
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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 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. (See standard condition #8 below)
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 of 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.
8. Division of Public Water Supply Construction Permits expire one year from date of issuance or renewal, unless construction has started. If construction commences within one year from date of issuance or renewal, the permit expires five years from the date of permit issuance or renewal. A request for extension shall be filed prior to the permit expiration date.



WATERSHED MANAGEMENT PERMIT

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

LOCAL SEWER SYSTEMS SECTION
111 EAST ERIE STREET, CHICAGO, IL 60611

www.mwrd.org/wmo

INSTRUCTIONS FOR COMPLETING PERMIT FORM

Submit a signed copy of the Watershed Management Permit application electronically through the Watershed Management Ordinance Permit Application Submittal System (WPASS) at www.mwrd.org/wpPASS. Include any other applicable permit schedules with the application and check the appropriate boxes. Submit a signed and sealed copy of the plan set. If applicable, submit the Fee Payment Voucher and Payment Receipt. Payments can be mailed to the address at the top of this form or submitted electronically at <https://mwrd.org/form/lsss-payment>. For any questions or assistance with submitting the permit application please email us at wpass@mwrd.org or call (312) 751-3255.

NAME AND LOCATION OF PROJECT

Name of Project (as shown on the plan set): Devon Avenue Improvement

Location of Project (address or with respect to two major streets): Devon Avenue from Lincoln Ave to McCormick Blvd

Municipality (Township, if unincorporated): Village of Lincolnwood

PIN (include all impacted, use additional sheet if necessary): _____, _____, _____
_____, _____, _____

SEWER AREA OF PROJECT

☒ Combined Sewer Area

☐ Separate Sewer Area

APPLICABLE PERMIT SCHEDULES

<input checked="" type="checkbox"/> Project Information (Required for all projects)	WMO Schedule A	(Page 5 of 9)
<input checked="" type="checkbox"/> Sewer Summary (Required for all projects)	WMO Schedule B	(Page 6 of 9)
<input checked="" type="checkbox"/> Sewer Connections (Required for all projects)	WMO Schedule C	(Page 7 of 9)
<input type="checkbox"/> Detention & Stormwater Management Facilities (WMO)	WMO Schedule D	(2 Pages)
<input type="checkbox"/> Detention & Stormwater Management Facilities (Legacy)	WMO Schedule D-Legacy	(4 Pages)
<input type="checkbox"/> Public Lift Station and/or Force Main	WMO Schedule E	(2 Pages)
<input type="checkbox"/> Characteristics of Waste Discharge	WMO Schedule F	(2 Pages)
<input type="checkbox"/> Treatment or Pretreatment Facilities	WMO Schedule G	(2 Pages)
<input type="checkbox"/> Hazard Areas (Floodplain / Floodway /Riparian Areas)	WMO Schedule H	(2 Pages)
<input type="checkbox"/> Affidavit Relative to Compliance with Article 7	WMO Schedule J	(1 Page)
<input type="checkbox"/> Affidavit of Disclosure of Property Interest	WMO Schedule K	(2 Pages)
<input type="checkbox"/> Notice of Requirements for Storm Water Detention	WMO Schedule L	(2 Pages)
<input type="checkbox"/> Outfall, Direct Connection, District Owned or Leased Property	WMO Schedule O	(1 Page)
<input type="checkbox"/> Soil Erosion and Sediment Control	WMO Schedule P	(1 Page)
<input type="checkbox"/> Recording and Maintenance	WMO Schedule R	(2 Pages)
<input type="checkbox"/> Wetlands and Wetland Buffer Areas	WMO Schedule W	(2 Pages)
<input type="checkbox"/> Current Survey of Property Interests (Required for most projects)	Exhibit A	

DISTRICT or AUTHORIZED MUNICIPALITY USE ONLY

Application Received: _____ Permit Issued: _____

PERMIT ISSUED BY: ☐ DISTRICT ☐ Authorized Municipality

WMO PERMIT

GENERAL CONDITIONS

WMO Permit Number: _____

1. **Definitions.** The definitions of Appendix A of the Watershed Management Ordinance are incorporated into this Watershed Management Permit by reference. Additionally, the following words and phrases shall be defined as follows:

- a) **Building and Occupancy Permit.** Building and Occupancy Permit issued by the Municipality.
- b) **Design Engineer.** A Professional Engineer who prepares plans and specifications for the project, and signs the Watershed Management Permit Application.
- c) **Inspection Engineer.** A Professional Engineer who inspects the development to ensure compliance with the design plans, specifications, a Watershed Management Permit, and the Watershed Management Ordinance.
- d) **Permit.** Watershed Management Permit.
- e) **General Conditions.** General Conditions contained in a Watershed Management Permit.
- f) **Special Conditions.** Special Conditions of this Watershed Management Permit.

2. **Adequacy of Design.** The schedules, plans, specifications and all other data and documents submitted for this Permit are made a part hereof. The Permit shall not relieve the Design Engineer of the sole responsibility for the adequacy of the design. The issuance of this Permit shall not be construed as approval of the concept or construction details of the proposed facilities and shall not absolve the Permittee, Co-Permittee or Design Engineer of their respective responsibilities.

3. **Joint Construction and Operation Permits.** Unless otherwise stated by the Special Conditions, the issuance of this Permit shall be a joint construction and operation permit, provided that the Permittee or Co-Permittee has complied with all General and Special Conditions.

4. **Allowable Discharges.** Discharges into the Sanitary Sewer system constructed under this Permit shall consist of sanitary Sewage only. Unless otherwise stated by the Special Conditions, there shall be no discharge of industrial wastes under this Permit. Stormwater shall not be permitted to enter the Sanitary Sewer system. Without limiting the general prohibition of the previous sentence, roof and footing drains shall not be connected to the Sanitary Sewer system.

5. **Construction Inspection.** All erosion and sediment control facilities, Stormwater Facilities, Detention Facilities, and Qualified Sewer Construction shall be inspected and approved by an Inspection Engineer acting on behalf of the Permittee or the Owner of the

project, or by a duly authorized and competent representative of the Inspection Engineer. No sewer trenches shall be backfilled except as authorized by the Inspection Engineer after having inspected and approved the sewer installation.

6. **Maintenance.** Stormwater Facilities, Detention Facilities, Qualified Sewer Construction, Sanitary Sewer lines, Combined Sewer lines, systems or facilities constructed hereunder or serving the facilities constructed hereunder shall be properly maintained and operated at all times in accordance with all applicable requirements. It is understood that the responsibility for maintenance shall run as a joint and several obligation against the Permittee, the Co-Permittee, the property served, the Owner and the operator of the facilities, and said responsibility shall not be discharged nor in any way affected by change of ownership of said property, unless the District has authorized assignment of the permit.
7. **Indemnification.** The Permittee shall be solely responsible for and shall defend, indemnify and hold harmless the Metropolitan Water Reclamation District of Greater Chicago ("District", "MWRD", or "MWRDGC") and its Commissioners, officers, employees, servants, and agents from liabilities of every kind, including losses, damages and reasonable costs, payments and expenses (such as, but not limited to, court costs and reasonable attorneys' fees and disbursements), claims, demands, actions, suits, proceedings, judgments or settlements, any or all of which are asserted by any individual, private entity, or public entity against the District and its Commissioners, officers, employees, servants, or agents and arise out of or are in any way related to the issuance of this Permit. Without limiting the generality of the preceding sentence, the provisions of this paragraph shall extend to indemnify and hold harmless the District and its Commissioners, officers, employees, servants, and agents from any claims or damages arising out of or in connection with the termination or revocation of this Permit.

The Permittee shall be solely responsible for and shall defend, indemnify and hold harmless an Authorized Municipality and its elected officials, officers, employees, servants, and agents from liabilities of every kind, including losses, damages and reasonable costs, payments and expenses (such as, but not limited to, court costs and reasonable attorneys' fees and disbursements), claims, demands, actions, suits, proceedings, judgments or settlements, any or all of which are asserted by any individual, private entity, or public entity against the Authorized Municipality and its elected officials, officers, employees, servants, or agents and arise out of or are in any way related to the issuance of this Permit. Without limiting the generality

WMO PERMIT

GENERAL CONDITIONS

WMO Permit Number: _____

of the preceding sentence, the provisions of this paragraph shall extend to indemnify and hold harmless the Authorized Municipality and its elected officials, officers, employees, servants, and agents from any claims or damages arising out of or in connection with the termination or revocation of this Permit.

8. **Sewer Construction by District.** Permittee understands and acknowledges that the District has the right and power to construct and extend sewer service facilities and render such services within the area to be served by the project for which this Permit is issued, and that by the District constructing and extending such sewer service facilities and rendering such services, the facilities constructed by the Permittee under this Permit may decrease in value, become useless or of no value whatsoever, the Permittee may also sustain a loss of business, income and profits.

Therefore, by accepting this Permit and acting thereon, the Permittee, for itself, its successors and assigns, does remise, release and forever discharge the District and its Commissioners, officers, employees, servants, and agents of any and all claims whatsoever which Permittee may now have or hereafter acquire and which Permittee's successors and assigns hereafter can, shall, or may have against the District and its Commissioners, officers, employees, servants, and agents for all losses and damages, either direct or indirect, claimed to have been incurred by reason of the construction or extension at any time hereafter by the District of sewer service facilities in the service area contemplated by this Permit, the rendering of such services, which District facilities and services decrease the value of the facilities constructed by the Permittee under this Permit, make same useless or of no value whatsoever, including but not limited to, any and all damages arising under 70 ILCS 2605/19; the taking of private property for public use without due compensation; the interference with the contracts of Permittee; the interference with Permittee's use and enjoyment of its land; and the decrease in value of Permittee's land.

9. **Third Parties.** Regarding Qualified Sewer Construction, this Permit does not grant the right or authority to the Permittee: (a) to construct or encroach upon any lands of the District or of any other parties, (b) to construct outside of the territorial boundaries of the District except as allowed under an extraterritorial service agreement, (c) to construct or encroach upon the territorial boundaries of any units of local government within the District, (d) to connect to or discharge into or be served by (directly or indirectly) any sewer or sewer system owned or operated by third parties.

10. **Costs.** It is expressly stipulated and clearly understood that the Stormwater Facilities, Detention Facilities, Qualified Sewer Construction, or facilities for which the Permit is issued shall be constructed, operated and maintained at no cost to the District.
11. **Other Sewer Construction.** The District reserves the right, privilege and authority to permit others to reconstruct, change, alter and replace all sewers and appurtenances thereto at the point of connection of any sewerage system to a District interceptor and/or in public right-of-ways of District easements, and to introduce additional Sewage flow through this connection into the intercepting sewer of said District.
12. **Change of Use.** This Permit shall be incorporated in the Building and Occupancy Permit for the Building or Buildings served under this Permit. The Owner or occupant of any Building served under this Permit shall not cause, or permit, a change of use of the Building to a use other than that indicated in this Permit without first having obtained a written permission from the Executive Director of the District.
13. **Interceptors Overloading.** The District hereby serves notice that its interceptors may flow full and may surcharge, and flooding of the proposed system may occur. The Permittee agrees that the proposed systems shall be constructed, operated and maintained at the sole risk of the Permittee.
14. **Transferability.** This Permit may not be assigned or transferred without the written consent of the Executive Director of the District or Enforcement Officer of an Authorized Municipality. However, a Sole Permittee may be required to assign or transfer the Permit when divesting itself of ownership to a third-party and should notify the District prior to such divestment so that the District may determine whether assignment to the new owner is necessary.
15. **Termination.** The District has the right to enforce or revoke a Permit issued by either the District or an Authorized Municipality as outlined in Article 12 of the Watershed Management Ordinance.

It is understood and agreed that in the event the Permittee shall default on or fail to perform and carryout any of the covenants, conditions or provisions of this Permit and such default or violation shall continue for sixty (60) days after receipt of notice thereof in writing given by the Executive Director of the District, then it shall be lawful for the District at or after the expiration of said sixty (60) days to declare said Permit terminated. The Permittee agrees that immediately upon receipt of written notice of such termination it will stop all operations, discontinue any discharges and disconnect the sewerage system or facilities constructed under this Permit. If the

WMO PERMIT

GENERAL CONDITIONS

WMO Permit Number: _____

Permittee fails to do so, the District shall have the right to disconnect said system. The Permittee hereby agrees to pay for any costs incurred by the District for said disconnection.

16. **Rights and Remedies.** The various rights and remedies of the District contained in this Permit shall be construed as cumulative, and no one of them shall be construed as exclusive of any one or more of the others or exclusive of any other rights or remedies allowed by applicable rules, regulations, ordinances and laws. An election by the District to enforce any one or more of its rights or remedies shall not be construed as a waiver of the rights of the District to pursue any other rights or remedies provided under the terms and provisions of this Permit or under any applicable rules, regulations, ordinances or laws.
17. **Expiration.** This Permit shall expire if construction has not started within one (1) year from the date of issue. Construction under an expired Permit is deemed construction without a Permit. All construction under this Permit shall be completed within three (3) years after the date of permit issuance. If conditions so warrant, an extension may be granted. For publicly financed projects (e.g. special assessments) the one (1) year period indicated will be considered from the date of final court action.
18. **Revocation.** In issuing this Permit, the District or Authorized Municipality has relied upon the statements and representations made by the Permittee or his agent. Any incorrect statements or representations shall be cause for revocation of this Permit, and all the rights of the Permittee hereunder shall immediately become null and void.
19. **Advance Notice.** The Permittee shall give the District or Authorized Municipality advance notice of at least two working days prior to the following: mobilization and installation of Erosion and Sediment Control Practices; commencement of construction; excavation for Qualified Sewer Construction; Major Stormwater Systems and Detention Facilities under this Permit; and completion of construction. When advance notice is given, the Permittee shall provide the Permit number, municipality and location.
20. **Compliance with Plans and Specifications.** All construction shall be in accordance with the plans and specifications submitted for this Permit and made a part hereof. No changes in, or deviation from the plans and specifications which affect capacity, maintenance, design requirements, service area or Permit requirements shall be permitted unless revised plans have been submitted to, and approved by the District or Authorized Municipality. The Permit together with a set of the plans and specifications (revised plans and specifications, if any) shall be kept on the jobsite at all times during construction and until final inspection and approval by the District or Authorized Municipality.
21. **Testing and Approval.** All construction under this Permit shall be subject to inspection, testing and approval by the District. All testing shall be made, or caused to be made, by the Permittee at no cost to the District and in the presence of the District representative. Upon satisfactory completion of construction, the Permittee and the owner shall submit, or cause to be submitted, a completion certificate and request for approval on the form prescribed by the District. No sewer or other facilities shall be put in service until all the conditions of the Permit have been satisfactorily met.
22. **Record Drawings.** Before final inspection and approval by the District or an Authorized Municipality, the Permittee shall furnish, or cause to be furnished to the District or an Authorized Municipality, a set of Record drawings and Schedule R for the site stormwater plan, Detention Facilities, Stormwater Facilities, and Qualified Sewer Construction.
23. **Compliance with Rules and Regulations.** The Permittee hereby expressly assumes all responsibilities for meeting the requirements of all applicable rules, regulations, ordinances and laws of Local, State and Federal authorities. Issuance of this Permit shall not constitute a waiver of any applicable requirements.
24. **Severability.** The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit, is held invalid, the remaining provisions of this Permit shall continue in full force and effect.
25. **Property Rights.** This Permit does not convey any property rights of any sort, or any exclusive privilege.
26. **Conflict with Other Conditions.** In the case of conflict between these General Conditions and any other condition(s) in this permit, the other condition(s) shall govern.

WMO SCHEDULE A Watershed Management Permit No.
PROJECT INFORMATION

WMO SCHEDULE A Watershed Management Permit No.
PROJECT INFORMATION

1. NAME OF PROJECT Devon Avenue Improvement

1. NAME OF PROJECT Devon Avenue Improvement

2. **APPURTENANCES** (check all applicable items)

- ☐ Siphon
 ☐ Drop Manholes
 ☐ Public Lift Station (Submit Sch. E)
 ☐ Outfalls (Submit Sch. O)
☐ Stream Crossing
 ☐ Direct Connections to District → Describe

3. RECEIVING SANITARY/COMBINED SEWER SYSTEM

A. System that project will connect to is:

- ☒ Existing ☐ Proposed /Under Construction → District Permit #

List owners of all sewers from project to District interceptor Village of Lincolnwood

4. RECEIVING STORM SEWER SYSTEM TRIBUTARY TO WATERWAY

A. System that project will connect to is:

- ☒
- Existing
- ☐
- Proposed /Under Construction → District Permit # _____

List owners of all sewers from project to waterway Village of Lincolnwood

5. EXISTING LIFT STATION

- ☒ No ☐ Yes → Receiving system includes existing lift station

If yes, indicate location

6. FLOOD PROTECTION AREAS

Does any part of the project area involve the following? (check all applicable items)

- ☐ Floodplain/Floodway/Riparian (Schedule H) ☐ Wetlands/Buffers/Riparian (Schedule W)

7. SIZE OF PROJECT

Impervious area within project

A. Total contiguous ownership interest 2.20 (ROW) acres

B. Development Area	<u>2.20</u>	acres	D. After development	<u>2.13</u>	acres
---------------------	-------------	-------	----------------------	-------------	-------

A. Total contiguous ownership interest 2.20 (ROW) acres

B. Development Area	<u>2.20</u>	acres	D. After development	<u>2.13</u>	acres
---------------------	-------------	-------	----------------------	-------------	-------

8. STORMWATER MANAGEMENT

A. Is project in the service area of a District permitted detention facility?

- ☒ No ☐ Yes —→ District Permit No.

B. Is stormwater management provided under this permit?

- [illegible]

C. Type of stormwater management

- ☐ Runoff Control ☐ Volume Control ☐ Detention Storage

WMO SCHEDULE B

SEWER SUMMARY

Watershed Management Permit No.

2025-0171

PROJECT NAME: Devon Avenue Improvement

(as shown on the plans)

1. **SEWER SUMMARY:** Include all qualified sewer construction sewers (Sanitary sewers in combined and separate sewer areas and Storm sewers in combined sewer area) and their tributary type:
Sanitary (San), Combined (C), Storm to Combined (SC), Storm to Waterway (SW), or Storm part of Volume Control (SVC)

Tributary Type	Choose an SC	Choose an SC	Choose an SC	Choose an C	Choose one	Choose one	Choose one
Pipe Size (in.)	8	8	8	8			
Total Length (ft.)	268	119	114	22			
Min. slope used (%)	0.5	0.5					
Pipe Material *	DUCTILE IRON PIPE	C900	Lining	Lining			
Total Manholes	0	0	0	0			
Total Cleanouts	0	0	0	0			
Catch Basin/Inlets	16	0	0	0			

* Pipe material and joint specifications must be shown on plans. See Technical Guidance Manual for acceptable specifications.

Sewer construction in floodplain: ☒ No ☐ Yes → FPE _____ ft.

Sanitary Manholes in floodplain _____

Note: All structures shall have lids located above the FPE or be constructed with watertight, bolt down covers/lids.

2. NATURE OF PROJECT (Check all that apply)

Brief description Sidewalk, parkway improvements, Median installation and pavement resurfacing.

- ☒ Publicly financed ☐ Sewer extension to serve future development
- ☐ Sewer system serving a subdivision ☒ Storm sewers in combined sewer area
- ☐ Off-site trunk sewer to serve subdivision ☐ Service connections to serve buildings (Sch. C)
- ☐ Other _____

3. SEWER EXTENSIONS

Identify proposed project designed to service future connections (not included in Schedule C). Check the appropriate box and submit service area map and estimate of population equivalent (PE) to be served.

- ☒ NO ☐ YES → ☐ Service area map
- ☐ P.E. estimate submitted

WMO SCHEDULE C

SEWER CONNECTIONS

(FILL OUT ALL SECTIONS THAT APPLY)

Watershed Management Permit No. _____

1. BUILDING CONNECTION DATA

A. RESIDENTIAL BUILDINGS

<input type="checkbox"/> Single Family	Total dwelling units *	_____		
	Number of sewer connections *	_____	PE **	n/a
<input type="checkbox"/> Multi Family	Total dwelling units *	_____		
	Number of sewer connections *	_____	PE **	n/a

B. COMMERCIAL& RECREATIONAL BUILDINGS

<input type="checkbox"/> Number of sewer connections	_____	PE **	n/a
--	-------	-------	-----

C. INDUSTRIAL BUILDINGS

<input type="checkbox"/> Number of sewer connections	_____	PE **	n/a
--	-------	-------	-----

* Each sanitary line exiting a building is a connection

** Population Equivalent (Submit calculations for each connection and total from all connections)

2. BUILDING USE - (Check all that apply)

A. COMMERCIAL & RECREATIONAL

Describe use of buildings, including principal product(s) or activities n/a

<input type="checkbox"/> Food preparation or processing (install grease separator)	<input type="checkbox"/> Laundromat (install lint basin)
<input type="checkbox"/> Swimming pool (provide pool plans)	<input type="checkbox"/> Auto service (install triple basin)
<input type="checkbox"/> Manufacturing (describe) _____	<input type="checkbox"/> Auto wash (install mud basin)
<input type="checkbox"/> Other _____	

B. INDUSTRIAL BUILDINGS

Describe use of buildings, including principal product(s) or activities _____

<input type="checkbox"/> Sewer connections will receive domestic sewage only
<input type="checkbox"/> Industrial waste is produced

NOTE: If industrial waste is produced, submit [WMO Schedule F](#) & [WMO Schedule G](#) and plumbing plans along with flow diagram for pretreatment system.

ENGINEERING CERTIFICATIONS

Watershed Management Permit No.

CERTIFICATE BY DESIGN ENGINEER: I hereby certify that the project described herein has been designed in accordance with the requirements set forth in this application and all applicable ordinances, rules, regulations, local, state and federal laws, and design criteria of the issuing authority; that the storm drainage and sanitary sewer system designed for this project are proper and adequate; that where the design involves one or more connections to an existing local sewer system, the capacity of said system has been examined and the system is found to be adequate to transport the stormwater and/or wastewater that will be added through the proposed sewer without violating any provisions of the Illinois Environmental Protection Act or the rules and regulations thereunder.

Comments, if any: _____

Engineering Firm: Christopher B. Burke Engineering, Ltd.

Telephone: (847) 823 - 0500

Address: 9575 W. Higgins Rd, Suite 600

City: Rosemont

Zip: 60018

Signature:  PROJECT ENGINEER
(Name and Title)

Date: 5/27/2025

Email Address: mgratzke@cbel.com



CERTIFICATE BY MUNICIPAL OR SYSTEM ENGINEER: The application and the drawings, together with other data being submitted with this application, have been examined by me and are found to be in compliance with all applicable requirements. The manner of drainage is satisfactory and proper in accordance with local requirements. The existing local sewer system to which the project discharges has been examined and the system is found to be adequate to transport the stormwater and/or wastewater that will be added through the proposed sewer without violating any provisions of the Illinois Environmental Protection Act or the rules and regulations thereunder.

I hereby certify that the project area is within the municipal corporate limits. ☒ YES ☐ NO

Owner of Local Sewer System: Village of Lincolnwood

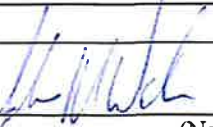
Municipal Engineer: John M. Welch, P.E.

Telephone: 847-675-0888

Address: 6900 N. Lincoln Ave.

City: Lincolnwood

Zip: 60712

Signature:  PUBLIC WORKS DIRECTOR
(Name and Title)

Date: 5/27/2025

Email Address: johnwelch@lwd.org



CERTIFICATE BY INSPECTION ENGINEER: I hereby certify that construction of the project will be in substantial compliance with the data and the plans submitted with this application; that approval will be obtained from the issuing authority prior to making any changes that would affect capacity, maintenance, design requirements, service area or the Permit requirements; that a set of RECORD drawings, signed and sealed by the undersigned Engineer will be furnished to the District or an Authorized Municipality before testing and approval by the District or Authorized Municipality of the completed work.

Engineering Firm: CHRISTOPHER B. BURKE ENGINEERING, LTD.

Telephone: 847-823-0500

Address: 9575 W. HIGGINS RD, SUITE 600

City: ROSEMONT

Zip: 60018

Signature: 
(Name and Title)

Date: 6/9/2025

Email Address: mgratzke@cbel.com



SPECIAL CONDITIONS

Watershed Management Permit No.

This Permit is issued subject to the General Conditions and the attached Special Conditions.

If Permit is granted:

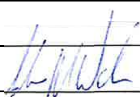
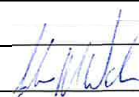
- ☐ Please return two (2) copies of the Permit to the Permittee; or
☒ Please mail one (1) copy to Permittee and one (1) copy to the person designated below:

Name: Daniel Dem

Address : Christopher B. Burke Engineering Ltd. 9575 W. Higgins Rd, Rosemont, IL 60018

Email : ddem@cbbel.com

CERTIFICATE BY APPLICANTS: We have read and thoroughly understand the conditions and requirements of this Permit application, and agree to conform to the Permit conditions and other applicable requirements of the District. It is understood that construction hereunder, after the Permit is granted, shall constitute acceptance by the applicants of any Special Conditions that may be placed hereon by the District or an Authorized Municipality. It is further understood that this application shall not constitute a Permit until it is approved, signed and returned by the Director of Engineering of the District or Enforcement Officer of an Authorized Municipality.

PERMITTEE	CO-PERMITTEE
The project area is within municipal corporate limits. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable	(Co-Permittee is Property Owner) Title to property is held in a land trust: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, Co-Permittee shall be beneficiary with Power of Direction
Municipality <u>Village of Lincolnwood</u>	Owner <u>Village of Lincolnwood</u>
Address <u>6900 N. Lincoln Ave.</u>	Address <u>6900 N. Lincoln Ave.</u>
City <u>Lincolnwood</u> Zip <u>60712</u>	City <u>Lincolnwood</u> Zip <u>60712</u>
Signature 	Signature 
Name <u>John M. Welch, P.E.</u> (Print)	Name <u>John M. Welch, P.E.</u> (Print)
Title <u>Director of Public Works</u>	Title <u>Director of Public Works</u>
Date <u>6/9/2025</u> Phone <u>847-675-0888</u>	Date <u>6/9/2025</u> Phone <u>847-675-0888</u>
Email <u>jwelch@lwd.org</u>	Email <u>jwelch@lwd.org</u>

REVIEW AND APPROVAL BY THE DISTRICT OR AUTHORIZED MUNICIPALITY	
Reviewed by: _____ (Local Sewer Systems) or (Professional Engineer)	Date _____
Approved for Issue	
Approved by: _____ (For the Director of Engineering) or (Enforcement Officer)	Date _____



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: FAU 1349 (Devon Ave) - US 41 to McCormick Blvd Office Phone Number, if available: _____

Physical Site Location (address, including number and street):

ISGS Site No. 3231V2-4 (Devon Lincoln Plaza, 3515-3521 W. Devon Ave.)

City: Chicago State: IL Zip Code: 60659

County: Cook Township: _____

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 41.99718 Longitude: - 87.71687

(Decimal Degrees)

(-Decimal Degrees)

Identify how the lat/long data were determined:

☒ GPS ☐ Map Interpolation ☐ Photo Interpolation ☐ Survey ☐ Other

KMZ file of coordinates _____

IEPA Site Number(s), if assigned: BOL: _____ BOW: _____ BOA: _____

Approximate Start Date (mm/dd/yyyy): TBD Approximate End Date (mm/dd/yyyy): TBD

Estimated Volume of debris (cu. Yd.): 97

II. Owner/Operator Information for Source Site

Site Owner

Name: Illinois Department of Transportation

Street Address: 201 West Center Court

PO Box: _____

City: Schaumburg State: IL

Zip Code: 60196-4600 Phone: 847-705-4385

Contact: Jose Dominguez

Email, if available: jose.dominguez@illinois.gov

Site Operator

Name: Illinois Department of Transportation

Street Address: 201 West Center Court

PO Box: _____

City: Schaumburg State: IL

Zip Code: 60196-4600 Phone: 847-705-4385

Contact: Jose Dominguez

Email, if available: jose.dominguez@illinois.gov

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):

LOCATION OF BORING DL-3 WAS SAMPLED AT SITE 3231V2-4.

SEE FIGURE 4-1 and 4-2 AND TABLE 4-1 OF THE FINAL PRELIMINARY SITE INVESTIGATION REPORT FOR SAMPLING DETAILS.

- 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]:

EUROFINS ANALYTICAL REPORT- JOB NUMBER: 500-270695-1.

ALSO, SEE FIGURE 4-1A OF THE FINAL PRELIMINARY SITE INVESTIGATION REPORT REPORT.

IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist

I, Michael K. Fischer (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: Environmental Design International inc.
Street Address: 33 West Monroe Street, Suite 1825
City: Chicago State: IL Zip Code: 60603
Phone: 312-345-1400

Michael K. Fischer

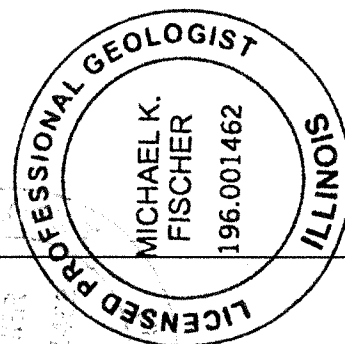
Printed Name:



Licensed Professional Engineer or
Licensed Professional Geologist Signature:

Sep 23, 2025

Date:



P.E. or L.P.G. Seal:

AGGREGATE SUBGRADE IMPROVEMENT (BDE)

Effective: April 1, 2012

Revised: April 1, 2022

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 (ASI).

303.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Coarse Aggregate	1004.07
(b) Reclaimed Asphalt Pavement (RAP)	1031.09

303.03 Equipment. The vibratory roller shall be according to Article 1101.01, or as approved by the Engineer. Vibratory machines, such as tampers, shall be used in areas where rollers do not fit.

303.04 Soil Preparation. The minimum immediate bearing value (IBV) of the soil below the improved subgrade shall be according to the Department’s “Subgrade Stability Manual” for the aggregate thickness specified.

303.05 Placing and Compacting. The maximum nominal lift thickness of aggregate gradations CA 2, CA 6, and CA 10 when compacted shall be 9 in. (225 mm). The maximum nominal lift thickness of aggregate gradations CS 1, CS 2, and RR 1 when compacted shall be 24 in. (600 mm).

The top surface of the aggregate subgrade improvement shall consist of a layer of capping aggregate gradations CA 6 or CA 10 that is 3 in. (75 mm) thick after compaction. Capping aggregate will not be required when aggregate subgrade improvement is used as a cubic yard pay item for undercut applications.

Each lift of aggregate 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.

303.06 Finishing and Maintenance. 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.

303.07 Method of Measurement. This work will be measured for payment according to Article 311.08.

303.08 Basis of Payment. This work will be paid for at the contract unit price per cubic yard (cubic meter) or ton (metric ton) for AGGREGATE SUBGRADE IMPROVEMENT or at the contract unit price per square yard (square meter) for AGGREGATE SUBGRADE IMPROVEMENT, of the thickness specified.”

Add the following to Section 1004 of the Standard Specifications:

“1004.07 Coarse Aggregate for Aggregate Subgrade Improvement (ASI). 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. In applications where greater than 24 in. (600 mm) of ASI material is required, gravel may be used below the top 12 in (300 mm) of ASI.

(b) Quality. The coarse aggregate shall consist of sound durable particles reasonably free of deleterious materials.

(c) Gradation.

(1) The coarse aggregate gradation for total ASI thickness less than or equal to 12 in. (300 mm) shall be CA 2, CA 6, CA 10, or CS 1.

The coarse aggregate gradation for total ASI thickness greater than 12 in. (300 mm) shall be CS 1 or CS 2 as shown below or RR 1 according to Article 1005.01(c).

	COARSE AGGREGATE SUBGRADE GRADATIONS				
Grad No.	Sieve Size and Percent Passing				
	8”	6”	4”	2”	#4
CS 1	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20
CS 2		100	80 ± 10	25 ± 15	

	COARSE AGGREGATE SUBGRADE GRADATIONS (Metric)				
Grad No.	Sieve Size and Percent Passing				
	200 mm	150 mm	100 mm	50 mm	4.75 mm
CS 1	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20
CS 2		100	80 ± 10	25 ± 15	

(2) Capping aggregate shall be gradation CA 6 or CA 10.”

Add the following to Article 1031.09 of the Standard Specifications:

“(b) RAP in Aggregate Subgrade Improvement (ASI). RAP in ASI shall be according to Articles 1031.01(a), 1031.02(a), 1031.06(a)(1), and 1031.06(a)(2), and the following.

- (1) The testing requirements of Article 1031.03 shall not apply.
- (2) Crushed RAP used for the lower lift may be mechanically blended with aggregate gradations CS 1, CS 2, and RR 1 but it shall be no greater than 40 percent of the total product volume. RAP agglomerations shall be no greater than 4 in. (100 mm).
- (3) For capping aggregate, well graded RAP having 100 percent passing the 1 1/2 in. (38 mm) sieve may be used when aggregate gradations CS 1, CS 2, CA 2, or RR 1 are used in the lower lift. FRAP will not be permitted as capping material.

Blending shall be through calibrated interlocked feeders or a calibrated blending plant such that the prescribed blending percentage is maintained throughout the blending process. The calibration shall have an accuracy of ± 2.0 percent of the actual quantity of material delivered.”

80274

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_P = Bituminous Price Index, as published by the Department for the month the work is performed, \$/ton (\$/metric ton).

BPI_L = Bituminous Price Index, as published by the Department for the month prior to the letting 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_V = Percent of virgin Asphalt Cement in the Quantity being adjusted. For HMA mixtures, the % AC_V will be determined from the adjusted job mix formula. For bituminous materials applied, a performance graded or cutback asphalt will be considered to be 100% AC_V and undiluted emulsified asphalt will be considered to be 65% AC_V.

Q = Authorized construction Quantity, tons (metric tons) (see below).

For HMA mixtures measured in square yards: $Q, \text{ tons} = A \times D \times (G_{mb} \times 46.8) / 2000$. For HMA mixtures measured in square meters: $Q, \text{ metric tons} = A \times D \times (G_{mb} \times 1) / 1000$. When computing adjustments for full-depth HMA pavement, separate calculations will be made for the binder and surface courses to account for their different G_{mb} and % AC_V.

For bituminous materials measured in gallons: $Q, \text{ tons} = V \times 8.33 \text{ lb/gal} \times SG / 2000$

For bituminous materials measured in liters: $Q, \text{ metric tons} = V \times 1.0 \text{ kg/L} \times SG / 1000$

Where: A = Area of the HMA mixture, sq yd (sq m).

D = Depth of the HMA mixture, in. (mm).

G_{mb} = Average bulk specific gravity of the mixture, from the approved mix design.

V = Volume of the bituminous material, gal (L).
SG = Specific Gravity of bituminous material as shown on the bill of lading.

Basis of Payment. Bituminous materials cost adjustments may be positive or negative but will only be made when there is a difference between the BPI_L and BPI_P in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(BPI_L - BPI_P) \div BPI_L\} \times 100$$

Bituminous materials cost adjustments will be calculated for each calendar month in which applicable bituminous material is placed; and will be paid or deducted when all other contract requirements for the work placed during the month are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

|

80173

CEMENT, FINELY DIVIDED MINERALS, ADMIXTURES; CONCRETE, AND MORTAR (BDE)

Effective: January 1, 2025

Revise the first paragraph of Article 285.05 of the Standard Specifications to read:

“285.05 Fabric Formed Concrete Revetment Mat. The grout shall consist of a mixture of cement, fine aggregate, and water so proportioned and mixed as to provide a pumpable slurry. Fly ash or ground granulated blast furnace (GGBF) slag, and concrete admixtures may be used at the option of the Contractor. The grout shall have an air content of not less than 6.0 percent nor more than 9.0 percent of the volume of the grout. The mix shall obtain a compressive strength of 2500 psi (17,000 kPa) at 28 days according to Article 1020.09.”

Revise Article 302.02 of the Standard Specifications to read:

“302.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Cement	1001
(b) Water	1002
(c) Hydrated Lime	1012.01
(d) By-Product, Hydrated Lime	1012.02
(e) By-Product, Non-Hydrated Lime	1012.03
(f) Lime Slurry	1012.04
(g) Fly Ash	1010
(h) Soil for Soil Modification (Note 1)	1009.01
(i) Bituminous Materials (Note 2)	1032

Note 1. This soil requirement only applies when modifying with lime (slurry or dry).

Note 2. The bituminous materials used for curing shall be emulsified asphalt RS-2, CRS-2, HFE 90, or HFE 150; rapid curing liquid asphalt RC-70; or medium curing liquid asphalt MC-70 or MC-250.”

Revise Article 312.07(c) of the Standard Specifications to read:

“(c) Cement1001”

Add Article 312.07(i) of the Standard Specifications to read:

“(i) Ground Granulated Blast Furnace (GGBF) Slag1010”

Revise the first paragraph of Article 312.09 of the Standard Specifications to read:

“312.09 Proportioning and Mix Design. At least 60 days prior to start of placing CAM II, the Contractor shall submit samples of materials to be used in the work for proportioning and testing.

The mixture shall contain a minimum of 200 lb (120 kg) of cement per cubic yard (cubic meter). Cement may be replaced with fly ash or ground granulated blast furnace (GGBF) slag according to Article 1020.05(c)(1) or 1020.05(c)(2), respectively, however the minimum cement content in the mixture shall be 170 lbs/cu yd (101 kg/cu m). Blends of coarse and fine aggregates will be permitted, provided the volume of fine aggregate does not exceed the volume of coarse aggregate. The Engineer will determine the proportions of materials for the mixture according to the "Portland Cement Concrete Level III Technician Course" manual. However, the Contractor may substitute their own mix design. Article 1020.05(a) shall apply, and a Level III PCC Technician shall develop the mix design."

Revise Article 352.02 of the Standard Specifications to read:

"352.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Cement (Note 1)	1001
(b) Soil for Soil-Cement Base Course	1009.03
(c) Water	1002
(d) Bituminous Materials (Note 2)	1032

Note 1. Bulk cement may be used for the traveling mixing plant method if the equipment for handling, weighing, and spreading the cement is approved by the Engineer.

Note 2. The bituminous materials used for curing shall be emulsified asphalt RS-2, CRS-2, HFE 90, or HFE 150; rapid curing liquid asphalt RC-70; or medium curing liquid asphalt MC-70 or MC-250."

Revise Article 404.02 of the Standard Specifications to read:

"404.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Cement	1001
(b) Water	1002
(c) Fine Aggregate	1003.08
(d) Bituminous Material (Tack Coat)	1032.06
(e) Emulsified Asphalts (Note 1) (Note 2)	1032.06
(f) Fiber Modified Joint Sealer	1050.05
(g) Additives (Note 3)	

Note 1. When used for slurry seal, the emulsified asphalt shall be CQS-1h according to Article 1032.06(b).

Note 2. When used for micro-surfacing, the emulsified asphalt shall be CQS-1hP according to Article 1032.06(e).

Note 3. Additives may be added to the emulsion mix or any of the component materials to provide the control of the quick-traffic properties. They shall be included as part of the mix design and be compatible with the other components of the mix.

Revise the last sentence of the fourth paragraph of Article 404.08 of the Standard Specifications to read:

“When approved by the Engineer, the sealant may be dusted with fine sand, cement, or mineral filler to prevent tracking.”

Revise Note 2 of Article 516.02 of the Standard Specifications to read:

“Note 2. The sand-cement grout mix shall be according to Section 1020 and shall be a 1:1 blend of sand and cement comprised of a Type I, IL, or II cement at 185 lb/cu yd (110 kg/cu m). The maximum water cement ratio shall be sufficient to provide a flowable mixture with a typical slump of 10 in. (250 mm).”

Revise Note 2 of Article 543.02 of the Standard Specifications to read:

“Note 2. The grout mixture shall be 6.50 hundredweight/cu yd (385 kg/cu m) of cement plus fine aggregate and water. Fly ash or ground granulated blast furnace (GGBF) slag may replace a maximum of 5.25 hundredweight/cu yd (310 kg/cu m) of the cement. The water/cement ratio, according to Article 1020.06, shall not exceed 0.60. An air-entraining admixture shall be used to produce an air content, according to Article 1020.08, of not less than 6.0 percent nor more than 9.0 percent of the volume of the grout. The Contractor shall have the option to use a water-reducing or high range water-reducing admixture.”

Revise Article 583.01 of the Standard Specifications to read:

“583.01 Description. This work shall consist of placing cement mortar along precast, prestressed concrete bridge deck beams as required for fairing out any unevenness between adjacent deck beams prior to placing of waterproofing membrane and surfacing.”

Revise Article 583.02(a) of the Standard Specifications to read:

“(a) Cement1001”

Revise the first paragraph of Article 583.03 of the Standard Specifications to read:

“583.03 General. This work shall only be performed when the air temperature is 45 °F (7 °C) and rising. The mixture for cement mortar shall consist of three parts sand to one part cement by volume. The amount of water shall be no more than that necessary to produce a workable, plastic mortar.”

Revise Note 2/ in Article 1003.01(b) of the Standard Specifications to read:

“2/ Applies only to sand. Sand exceeding the colorimetric test standard of 11 (Illinois Modified AASHTO T 21) will be checked for mortar making properties according to Illinois Modified ASTM C 87 and shall develop a compressive strength at the age of 14 days when using Type I, IL, or II cement of not less than 95 percent of the comparable standard.

Revise the second sentence of Article 1003.02(e)(1) of the Standard Specifications to read:

“The test will be performed with Type I, IL, or II portland cement having a total equivalent alkali content ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) of 0.90 percent or greater.”

Revise the first sentence of the second paragraph of Article 1003.02(e)(3) of the Standard Specifications to read:

“The ASTM C 1293 test shall be performed with Type I, IL, or II portland cement having a total equivalent alkali content ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) of 0.80 percent or greater.”

Revise the second sentence of Article 1004.02(g)(1) of the Standard Specifications to read:

“The test will be performed with Type I, IL, or II portland cement having a total equivalent alkali content ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) of 0.90 percent or greater.”

Revise Article 1017.01 of the Standard Specifications to read:

“1017.01 Requirements. The mortar shall be high-strength according to ASTM C 387 and shall have a minimum 80.0 percent relative dynamic modulus of elasticity when tested by the Department according to Illinois Modified AASHTO T 161 or AASHTO T 161 when tested by an independent lab. The high-strength mortar shall have a water-soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the high-strength mortar shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every five years, and the test results shall be provided to the Department. Mixing of the high-strength mortar shall be according to the manufacturer’s specifications. The Department will maintain a qualified product list.”

Revise the fourth sentence of Article 1018.01 of the Standard Specifications to read:

“The ASTM C 1218 test shall be performed by an independent lab a minimum of once every five years, and the test results shall be provided to the Department.”

Revise Article 1019.02 of the Standard Specifications to read:

“1019.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Cement	1001
(b) Water	1002

- (c) Fine Aggregate for Controlled Low-Strength Material (CLSM) 1003.06
- (d) Fly Ash 1010
- (e) Ground Granulated Blast Furnace (GGBF) Slag..... 1010
- (f) Admixtures (Note 1)

Note 1. The air-entraining admixture may be in powder or liquid form. Prior to approval, a CLSM air-entraining admixture will be evaluated by the Department. The admixture shall be able to meet the air content requirements of Mix 2. The Department will maintain a qualified product list.”

Revise Article 1019.05 of the Standard Specifications to read:

“**1019.05 Department Mix Design.** The Department mix design shall be Mix 1, 2, or 3 and shall be proportioned to yield approximately one cubic yard (cubic meter).

Mix 1	
Cement	50 lb (30 kg)
Fly Ash – Class C or F, and/or GGBF Slag	125 lb (74 kg)
Fine Aggregate – Saturated Surface Dry	2900 lb (1720 kg)
Water	50-65 gal (248-322 L)
Air Content	No air is entrained

Mix 2	
Cement	125 lb (74 kg)
Fine Aggregate – Saturated Surface Dry	2500 lb (1483 kg)
Water	35-50 gal (173-248 L)
Air Content	15-25 %

Mix 3	
Cement	40 lb (24 kg)
Fly Ash – Class C or F, and/or GGBF Slag	125 lb (74 kg)
Fine Aggregate – Saturated Surface Dry	2500 lb (1483 kg)
Water	35-50 gal (179-248 L)
Air Content	15-25 %”

Revise Article 1020.04, Table 1, Note (8) of the Standard Specifications to read:

“(8) In addition to the Type III portland cement, 100 lb/cu yd of ground granulated blast-furnace slag and 50 lb/cu yd of microsilica (silica fume) shall be used. For an air temperature greater than 85 °F, the Type III portland cement may be replaced with Type I, IL, or II portland cement.”

Revise Article 1020.04, Table 1 (Metric), Note (8) of the Standard Specifications to read:

“(8) In addition to the Type III portland cement, 60 kg/cu m of ground granulated blast-furnace slag and 30 kg/cu m of microsilica (silica fume) shall be used. For an air temperature greater than 30 °C, the Type III portland cement may be replaced with Type I, IL, or II portland cement.”

Revise the second paragraph of Article 1020.05(a) of the Standard Specifications to read:

“For a mix design using a portland-pozzolan cement, portland blast-furnace slag cement, portland-limestone cement, or replacing portland cement with finely divided minerals per Articles 1020.05(c) and 1020.05(d), the Contractor may submit a mix design with a minimum portland cement content less than 400 lbs/cu yd (237 kg/cu m), but not less than 375 lbs/cu yd (222 kg/cu m), if the mix design is shown to have a minimum relative dynamic modulus of elasticity of 80 percent determined according to AASHTO T 161. Testing shall be performed by an independent laboratory accredited by AASHTO re:source for Portland Cement Concrete.”

Revise the first sentence of the first paragraph of Article 1020.05(b) of the Standard Specifications to read:

“Corrosion inhibitors and concrete admixtures shall be according to the qualified product lists.”

Delete the fourth and fifth sentences of the second paragraph of Article 1020.05(b) of the Standard Specifications.

Revise the third sentence of the second paragraph of Article 1020.05(b)(5) of the Standard Specifications to read:

“The qualified product lists of concrete admixtures shall not apply.”

Revise second paragraph of Article 1020.05(b)(10) of the Standard Specifications to read:

“When calcium nitrite is used, it shall be added at the rate of 4 gal/cu yd (20 L/cu m) and shall be added to the mix immediately after all compatible admixtures have been introduced to the batch. Other corrosion inhibitors shall be added per the manufacturer’s specifications.”

Delete the third paragraph of Article 1020.05(b)(10) of the Standard Specifications.

Revise Article 1020.15(b)(1)c. of the Standard Specifications to read:

“c. The minimum portland cement content in the mixture shall be 375 lbs/cu yd (222 kg/cu m). When the total of organic processing additions, inorganic processing additions, and limestone addition exceed 5.0 percent in the cement, the minimum portland cement content in the mixture shall be 400 lbs/cu yd (237 kg/cu m). For a drilled shaft, foundation, footing, or substructure, the

minimum portland cement may be reduced to as low as 330 lbs/cu yd (196 kg/cu m) if the concrete has adequate freeze/thaw durability. The Contractor shall provide freeze/thaw test results according to AASHTO T 161, and the relative dynamic modulus of elasticity of the mix design shall be a minimum of 80 percent. Testing shall be performed by an independent laboratory accredited by AASHTO re:source for Portland Cement Concrete. Freeze/thaw testing will not be required for concrete that will not be exposed to freezing and thawing conditions as determined by the Engineer.”

Revise Article 1021.01 of the Standard Specifications to read:

“1021.01 General. Admixtures shall be furnished in liquid or powder form ready for use. The admixtures shall be delivered in the manufacturer's original containers, bulk tank trucks or such containers or tanks as are acceptable to the Engineer. Delivery shall be accompanied by a ticket which clearly identifies the manufacturer, the date of manufacture, and trade name of the material. Containers shall be readily identifiable as to manufacturer, the date of manufacture, and trade name of the material they contain.

Concrete admixtures shall be on one of the Department's qualified product lists. Unless otherwise noted, admixtures shall have successfully completed and remain current with the AASHTO Product Eval and Audit Concrete Admixture (CADD) testing program. For admixture submittals to the Department; the product brand name, manufacturer name, admixture type or types, an electronic link to the product's technical data sheet, and the NTPEP testing number which contains an electronic link to all test data shall be provided. In addition, a letter shall be submitted certifying that no changes have been made in the formulation of the material since the most current round of tests conducted by AASHTO Product Eval and Audit. After 28 days of testing by AASHTO Product Eval and Audit, air-entraining admixtures may be provisionally approved and used on Departmental projects. For all other admixtures, unless otherwise noted, the time period after which provisionally approved status may be earned is 6 months.

The manufacturer shall include the following in the submittal to the AASHTO Product Eval and Audit CADD testing program: the manufacturing range for specific gravity, the midpoint and manufacturing range for residue by oven drying, and manufacturing range of pH. The submittal shall also include an infrared spectrophotometer trace no more than five years old.

For air-entraining admixtures according to Article 1021.02, the specific gravity allowable manufacturing range established by the manufacturer shall be according to AASHTO M 194. For residue by oven drying and pH, the allowable manufacturing range and test methods shall be according to AASHTO M 194.

For admixtures according to Articles 1021.03, 1021.04, 1021.05, 1021.06, 1021.07, and 1021.08, the pH allowable manufacturing range established by the manufacturer shall be according to ASTM E 70. For specific gravity and residue by oven drying, the allowable manufacturing range and test methods shall be according to AASHTO M 194.

All admixtures, except chloride-based accelerators, shall contain a maximum of 0.3 percent chloride by weight (mass) as determined by an appropriate test method. To verify the test result, the Department will use Illinois Modified AASHTO T 260, Procedure A, Method 1.

Prior to final approval of an admixture, the Engineer reserves the right to request a sample for testing. The test and reference concrete mixtures tested by the Engineer will contain a cement content of 5.65 cwt/cu yd (335 kg/cu m). For freeze-thaw testing, the Department will perform the test according to Illinois Modified AASHTO T 161. The flexural strength test will be performed according to AASHTO T 177. If the Engineer decides to test the admixture, the manufacturer shall submit AASHTO T 197 water content and set time test results on the standard cement used by the Department. The manufacturer may select their lab or an independent lab to perform this testing. The laboratory is not required to be accredited by AASHTO.

Random field samples may be taken by the Department to verify an admixture meets specification. A split sample will be provided to the manufacturer if requested. Admixtures that do not meet specification requirements or an allowable manufacturing range established by the manufacturer shall be replaced with new material.”

Revise Article 1021.03 of the Standard Specifications to read:

“**1021.03 Retarding and Water-Reducing Admixtures.** The admixture shall be according to the following.

- (a) Retarding admixtures shall be according to AASHTO M 194, Type B (retarding) or Type D (water-reducing and retarding).
- (b) Water-reducing admixtures shall be according to AASHTO M 194, Type A.
- (c) High range water-reducing admixtures shall be according to AASHTO M 194, Type F (high range water-reducing) or Type G (high range water-reducing and retarding).”

Revise Article 1021.05 of the Standard Specifications to read:

“**1021.05 Self-Consolidating Admixtures.** Self-consolidating admixture systems shall consist of either a high range water-reducing admixture only or a high range water-reducing admixture combined with a separate viscosity modifying admixture. The one or two component admixture system shall be capable of producing a concrete that can flow around reinforcement and consolidate under its own weight without additional effort and without segregation.

High range water-reducing admixtures shall be according to AASHTO M 194, Type F.

Viscosity modifying admixtures shall be according to AASHTO M 194, Type S (specific performance).”

Revise Article 1021.06 of the Standard Specifications to read:

“1021.06 Rheology-Controlling Admixture. Rheology-controlling admixtures shall be capable of producing a concrete mixture with a lower yield stress that will consolidate easier for slipform applications used by the Contractor. Rheology-controlling admixtures shall be according to AASHTO M 194, Type S (specific performance).”

Revise Article 1021.07 of the Standard Specifications to read:

“1021.07 Corrosion Inhibitor. The corrosion inhibitor shall be according to one of the following.

(a) Calcium Nitrite. Corrosion inhibitors shall contain a minimum 30 percent calcium nitrite by weight (mass) of solution and shall comply with either the requirements of AASHTO M 194, Type C (accelerating) or the requirements of ASTM C 1582. The corrosion inhibiting performance requirements of ASTM C 1582 shall not apply.

(b) Other Materials. The corrosion inhibitor shall be according to ASTM C 1582.

For submittals requiring testing according to ASTM M 194, Type C (accelerating), the admixture shall meet the requirements of the AASHTO Product Eval and Audit CADD testing program according to Article 1021.01.

For submittals requiring testing according to ASTM C 1582, a report prepared by an independent laboratory accredited by AASHTO re:source for portland cement concrete shall be provided. The report shall show the results of physical tests conducted no more than five years prior to the time of submittal, according to applicable specifications. However, ASTM G 109 test information specified in ASTM C 1582 is not required to be from an independent accredited lab. All other information in ASTM C 1582 shall be from an independent accredited lab. Test data and other information required to be submitted to AASHTO Product Eval and Audit according to Article 1021.01, shall instead be submitted directly to the Department.”

Add Article 1021.08 of the Standard Specifications as follows:

“1021.08 Other Specific Performance Admixtures. Other specific performance admixtures shall, at a minimum, be according to AASHTO M 194, Type S (specific performance). The Department also reserves the right to require other testing, as determined by the Engineer, to show evidence of specific performance characteristics.

Initial testing according to AASHTO M 194 may be conducted under the AASHTO Product Eval and Audit CADD testing program according to Article 1021.01, or by an independent laboratory accredited by AASHTO re:source for Portland Cement Concrete. In either case, test data and other information required to be submitted to AASHTO Product Eval and Audit according to Article 1021.01, shall also be submitted directly to the Department. The independent accredited lab report shall show the results of physical tests conducted no more than five years prior to the time of submittal, according to applicable specifications.”

Revise Article 1024.01 of the Standard Specifications to read:

“1024.01 Requirements for Grout. The grout shall be proportioned by dry volume, thoroughly mixed, and shall have a minimum temperature of 50 °F (10 °C). Water shall not exceed the minimum needed for placement and finishing.

Materials for the grout shall be according to the following.

Item	Article/Section
(a) Cement	1001
(b) Water	1002
(c) Fine Aggregate	1003.02
(d) Fly Ash	1010
(e) Ground Granulated Blast Furnace (GGBF) Slag.....	1010
(f) Concrete Admixtures	1021”

Revise Note 1 of Article 1024.02 of the Standard Specifications to read:

“Note 1. Nonshrink grout shall be according to Illinois Modified ASTM C 1107.

The nonshrink grout shall have a water-soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the grout shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every five years, and the test results shall be provided to the Department. Mixing of the nonshrink grout shall be according to the manufacturer’s specifications. The Department will maintain a qualified product list.”

Revise Article 1029.02 of the Standard Specifications to read:

“1029.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Cement.....	1001
(b) Fly Ash	1010
(c) Ground Granulated Blast Furnace (GGBF) Slag	1010
(d) Water.....	1002
(e) Fine Aggregate.....	1003
(f) Concrete Admixtures	1021
(g) Foaming Agent (Note 1)	

Note 1. The manufacturer shall submit infrared spectrophotometer trace and test results indicating the foaming agent meets the requirements of ASTM C 869 in order to be on the Department’s qualified product list. Submitted data/results shall not be more than five years old.”

Revise the second paragraph of Article 1103.03(a)(4) the Standard Specifications to read:

“The dispenser system shall provide a visual indication that the liquid admixture is actually entering the batch, such as via a transparent or translucent section of tubing or by independent check with an integrated secondary metering device. If approved by the Engineer, an alternate indicator may be used for admixtures dosed at rates of 25 oz/cwt (1630 mL/100 kg) or greater, such as accelerating admixtures, corrosion inhibitors, and viscosity modifying admixtures.”

Revise the first two sections of Check Sheet #11 of the Supplemental Specifications and Recurring Special Provisions to read:

“Description. This work shall consist of filling voids beneath rigid and composite pavements with cement grout.

Materials. Materials shall be according to the following Articles of Division 1000 - Materials of the Standard Specifications:

Item	Article/Section
(a) Cement	1001
(b) Water	1002
(c) Fly Ash	1010
(d) Ground Granulated Blast Furnace (GGBF) Slag.....	1010
(e) Admixtures	1021
(f) Packaged Rapid Hardening Mortar or Concrete	1018”

Revise the third paragraph of Materials Note 2 of Check Sheet #28 of the Supplemental Specifications and Recurring Special Provisions to read:

“The Department will maintain a qualified product list of synthetic fibers, which will include the minimum required dosage rate. For the minimum required fiber dosage rate based on the Illinois Modified ASTM C 1609 test, a report prepared by an independent laboratory accredited by AASHTO re:source for Portland Cement Concrete shall be provided. The report shall show results of tests conducted no more than five years prior to the time of submittal.”

80460

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: January 1, 2025

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 according to the table below.

Horsepower Range	Model Year and Older
50-99	2003
100-299	2002
300-599	2000
600-749	2001
750 and up	2005

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* (<https://www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel>), 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: January 2, 2025

1. OVERVIEW AND GENERAL 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 in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory. Award of the contract is conditioned on meeting the requirements of 49 CFR Part 26, and failure by the Contractor to carry out the requirements of Part 26 is a material breach of the contract and may result in the termination of the contract or such other remedies as the Department deems appropriate.
2. CONTRACTOR ASSURANCE. All assurances set forth in FHWA 1273 are hereby incorporated by reference and will be physically attached to the final contract and all subcontracts.
3. CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. The Department has determined the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies and that, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform **19%** 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 in accordance with the requirements of 49 CFR 26.53 and SBE Memorandum No. 24-02.
4. IDENTIFICATION OF CERTIFIED DBE. Information about certified DBE Contractors can be found in the Illinois UCP Directory. Bidders can obtain additional information and assistance with identifying DBE-certified companies at the Department's website or by contacting the Department's Bureau of Small Business Enterprises at (217) 785-4611.
5. BIDDING PROCEDURES. Compliance with this Special Provision and SBE Policy Memorandum 24-02 is a material bidding requirement. The following shall be included with the bid.
 - (a) DBE Utilization Plan (form SBE 2026) documenting enough DBE participation has been obtained to meet the goal, or a good faith effort has been made to meet the goal even though the efforts did not succeed in obtaining enough DBE participation to meet the goal.

- (b) Applicable DBE Participation Statement (form SBE 2023, 2024, and/or 2025) for each DBE firm the bidder has committed to perform the work to achieve the contract goal.

The required forms and documentation shall 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 bid if it does not meet the bidding procedures set forth herein and the bid will be declared non-responsive. A bidder declared non-responsive for failure to meet the bidding procedures will not give rise to an administrative reconsideration. In the event the bid is declared non-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.

6. UTILIZATION PLAN EVALUATION. 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 the bidder has committed to DBE participation sufficient to meet the goal, or that the bidder has made good faith efforts to do so, in the event the bidder cannot meet the goal, in order for the Department to 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 Department determines, based upon the documentation submitted, that the bidder has made a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A and the requirements of SBE 2026.

If the Department determines that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan of that determination in accordance with SBE Policy Memorandum 24-02.

7. CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work the bidder commits to have performed by the specified DBEs 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 firms. 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 guidelines for counting goal credit are provided in 49 CFR Part 26.55. In evaluating Utilization Plans for award the Department will count goal credit as set forth in Part 26 and in accordance with SBE Policy Memorandum 24-02.
8. CONTRACT COMPLIANCE. The Contractor must utilize the specific DBEs listed to perform the work and supply the materials for which each DBE is listed in the Contractor's approved Utilization Plan, unless the Contractor obtains the Department's written consent to

terminate the DBE or any portion of its work. The DBE Utilization Plan approved by SBE is a condition-of-award, and any deviation to that Utilization Plan, the work set forth therein to be performed by DBE firms, or the DBE firms specified to perform that work, must be approved, in writing, by the Department in accordance with federal regulatory requirements. Deviation from the DBE Utilization Plan condition-of-award without such written approval is a violation of the contract and may result in termination of the contract or such other remedy the Department deems appropriate. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan.

- (a) NOTICE OF DBE PERFORMANCE. The Contractor shall provide the Engineer with at least three days advance notice of when all DBE firms are expected to perform the work committed under the Contractor's Utilization Plan.
- (b) SUBCONTRACT. If awarded the contract, the Contractor is required to enter into written subcontracts with all DBE firms indicated in the approved Utilization Plan and must provide copies of fully executed 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.
- (c) PAYMENT TO DBE FIRMS. 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 goal has been paid to the DBE. The Contractor shall document and report all payments for work performed by DBE certified firms in accordance with Article 109.11 of the Standard Specifications. All records of payment for work performed by DBE certified firms shall be made available to the Department upon request.
- (d) FINAL PAYMENT. After the performance of the final item of work or trucking, or delivery of material by a DBE and final payment 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 (form SBE 2115) to the Engineer. 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.
- (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.

HOT-MIX ASPHALT – LONGITUDINAL JOINT SEALANT (BDE)

Effective: November 1, 2022

Revised: August 1, 2023

Add the following after the second sentence in the eighth paragraph of Article 406.06(h)(2) of the Standard Specifications:

“If rain is forecasted and traffic is to be on the LJS or if pickup/tracking of the LJS material is likely, the LJS shall be covered immediately following its application with FA 20 fine aggregate mechanically spread uniformly at a rate of 1.5 ± 0.5 lb/sq yd (0.75 ± 0.25 kg/sq m). Fine aggregate landing outside of the LJS shall be removed prior to application of tack coat.”

Add the following after the first sentence in the ninth paragraph of Article 406.06(h)(2) of the Standard Specifications:

“LJS half-width shall be applied at a width of 9 ± 1 in. (225 ± 25 mm) in the immediate lane to be placed with the outside edge flush with the joint of the next HMA lift. The vertical face of any longitudinal joint remaining in place shall also be coated.”

Add the following after the eleventh paragraph of Article 406.06(h)(2) of the Standard Specifications:

“LJS Half-Width Application Rate, lb/ft (kg/m) ^{1/}			
Lift Thickness, in. (mm)	Coarse Graded Mixture (IL-19.0, IL-19.0L, IL-9.5, IL-9.5L, IL-4.75)	Fine Graded Mixture (IL-9.5FG)	SMA Mixture (SMA-9.5, SMA-12.5)
$\frac{3}{4}$ (19)	0.44 (0.66)		
1 (25)	0.58 (0.86)		
$1 \frac{1}{4}$ (32)	0.66 (0.98)	0.44 (0.66)	
$1 \frac{1}{2}$ (38)	0.74 (1.10)	0.48 (0.71)	0.63 (0.94)
$1 \frac{3}{4}$ (44)	0.82 (1.22)	0.52 (0.77)	0.69 (1.03)
2 (50)	0.90 (1.34)	0.56 (0.83)	0.76 (1.13)
$\geq 2 \frac{1}{4}$ (60)	0.98 (1.46)		

1/ The application rate includes a surface demand for liquid. 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.”

Revise the second paragraph of Article 406.13(b) of the Standard Specifications to read:

“Aggregate for covering tack, LJS, or FLS will not be measured for payment.”

Add the following to the end of the second paragraph of Article 406.14 of the Standard Specifications:

“Longitudinal joint sealant (LJS) half-width will be paid for at the contract unit price per foot (meter) for LONGITUDINAL JOINT SEALANT, HALF-WIDTH.”

80446

PAVEMENT MARKING (BDE)

Effective: April 1, 2025

Revised: November 1, 2025

Revise the fourth sentence of the fourth paragraph of Article 780.05 of the Standard Specifications to read:

“Grooves for letters and symbols shall be cut in a rectangular shape or in the shape of the proposed marking so the entire marking will fit within the limits of the grooved area.”

Revise the last sentence of the third paragraph of Article 780.08 of the Standard Specifications to read:

“The Contractor shall install the preformed plastic pavement markings according to the manufacturer’s recommendations.”

Revise the second sentence of the first paragraph of Article 780.13 of the Standard Specifications to read:

“In addition, thermoplastic, preformed plastic, epoxy, preformed thermoplastic, polyurea, and modified urethane pavement markings will be inspected following a winter performance period that extends from November 15 to April 1 of the next year.”

80464

PAVEMENT PATCHING (BDE)

Effective: August 1, 2025

Revise the first sentence of the last paragraph of Article 442.06(a)(2) of the Standard Specifications to read:

“Type IV patches shall be reinforced with welded wire reinforcement according to the details shown on the plans.”

Revise Article 442.06(a)(3) of the Standard Specifications to read:

“(3) Class C Patching. Patches adjacent to a new lane of pavement, new portland cement concrete shoulder, or new curb and gutter of more than 20 ft (6 m) in length shall be tied with No. 6 (No. 19) tie bars, 24 in. (600 mm) long, embedded 8 in. (200 mm) at 36 in. (900 mm) centers according to Article 420.05(b).

When the patched pavement is not to be resurfaced, transverse contraction joints shall be formed on 15 ft (4.5 m) to 20 ft (6 m) centers by sawing in all patches that are more than 20 ft (6 m) in length. They shall be placed in line with joints or cracks in the existing slab whenever possible.”

Revise the eighth paragraph of Article 442.11 of the Standard Specifications to read:

“Pavement tie bars for patches will be paid for at the contract unit price per each for TIE BARS, of the diameter specified.”

80468

PERFORMANCE GRADED ASPHALT BINDER (BDE)

Effective: January 1, 2023

Revise Article 1032.05 of the Standard Specifications to read:

“1032.05 Performance Graded Asphalt Binder. These materials will be accepted according to the Bureau of Materials Policy Memorandum, “Performance Graded Asphalt Binder Qualification Procedure.” The Department will maintain a qualified producer list. These materials shall be free from water and shall not foam when heated to any temperature below the actual flash point. Air blown asphalt, recycle engine oil bottoms (ReOB), and polyphosphoric acid (PPA) modification shall not be used.

When requested, producers shall provide the Engineer with viscosity/temperature relationships for the performance graded asphalt binders delivered and incorporated in the work.

- (a) Performance Graded (PG) Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 “Standard Specification for Performance Graded Asphalt Binder” for the grade shown on the plans and the following.

Test	Parameter
Small Strain Parameter (AASHTO PP 113) BBR, ΔT_c , 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	-5 °C min.

- (b) Modified Performance Graded (PG) Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 “Standard Specification for Performance Graded Asphalt Binder” for the grade shown on the plans.

Asphalt binder modification shall be performed at the source, as defined in the Bureau of Materials Policy Memorandum, “Performance Graded Asphalt Binder Qualification Procedure.”

Modified asphalt binder shall be safe to handle at asphalt binder production and storage temperatures or HMA construction temperatures. Safety Data Sheets (SDS) shall be provided for all asphalt modifiers.

- (1) Polymer Modification (SB/SBS or SBR). Elastomers shall be added to the base asphalt binder to achieve the specified performance grade and shall be either a styrene-butadiene diblock, triblock copolymer without oil extension, or a styrene-butadiene rubber. The polymer modified asphalt binder shall be smooth, homogeneous, and be according to the requirements shown in Table 1 or 2 for the grade shown on the plans.

Table 1 - Requirements for Styrene-Butadiene Copolymer (SB/SBS) Modified Asphalt Binders		
Test	Asphalt Grade SB/SBS PG 64-28 SB/SBS PG 70-22	Asphalt Grade SB/SBS PG 64-34 SB/SBS PG 70-28 SB/SBS PG 76-22 SB/SBS PG 76-28
Separation of Polymer ITP, "Separation of Polymer from Asphalt Binder" Difference in °F (°C) of the softening point between top and bottom portions	4 (2) max.	4 (2) max.
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	60 min.	70 min.

Table 2 - Requirements for Styrene-Butadiene Rubber (SBR) Modified Asphalt Binders		
Test	Asphalt Grade SBR PG 64-28 SBR PG 70-22	Asphalt Grade SB/SBS PG 64-34 SB/SBS PG 70-28 SBR PG 76-22 SBR PG 76-28
Separation of Polymer ITP, "Separation of Polymer from Asphalt Binder" Difference in °F (°C) of the softening point between top and bottom portions	4 (2) max.	4 (2) max.
Toughness ASTM D 5801, 77 °F (25 °C), 20 in./min. (500 mm/min.), in.-lbs (N-m)	110 (12.5) min.	110 (12.5) min.
Tenacity ASTM D 5801, 77 °F (25 °C), 20 in./min. (500 mm/min.), in.-lbs (N-m)	75 (8.5) min.	75 (8.5) min.
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	40 min.	50 min.

- (2) Ground Tire Rubber (GTR) Modification. GTR modification is the addition of recycled ground tire rubber to liquid asphalt binder to achieve the specified performance grade. GTR shall be produced from processing automobile and/or truck tires by the ambient

grinding method or micronizing through a cryogenic process. GTR shall not exceed 1/16 in. (2 mm) in any dimension and shall not contain free metal particles, moisture that would cause foaming of the asphalt, or other foreign 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 “Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates” or AASHTO PP 74 “Standard Practice for Determination of Size and Shape of Glass Beads Used in Traffic Markings by Means of Computerized Optical Method”, 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 μ m)	95 \pm 5
No. 50 (300 μ m)	> 20

GTR modified asphalt binder shall be tested for rotational viscosity according to AASHTO T 316 using spindle S27. GTR modified asphalt binder shall be tested for original dynamic shear and RTFO dynamic shear according to AASHTO T 315 using a gap of 2 mm.

The GTR modified asphalt binder shall meet the requirements of Table 3.

Table 3 - Requirements for Ground Tire Rubber (GTR) Modified Asphalt Binders		
Test	Asphalt Grade GTR PG 64-28 GTR PG 70-22	Asphalt Grade GTR PG 76-22 GTR PG 76-28 GTR PG 70-28
TESTS ON RESIDUE FROM ROLLING THIN FILM OVEN TEST (AASHTO T 240)		
Elastic Recovery ASTM D 6084, Procedure A, 77 °F (25 °C), 100 mm elongation, %	60 min.	70 min.

- (3) Softener Modification (SM). Softener modification is the addition of organic compounds, such as engineered flux, bio-oil blends, modified vegetable oils, glycol amines, and fatty acid derivatives, to the base asphalt binder to achieve the specified performance grade. Softeners shall be dissolved, dispersed, or reacted in the asphalt binder to enhance its performance and shall remain compatible with the asphalt binder with no separation. Softeners shall not be added to modified PG asphalt binder as defined in Articles 1032.05(b)(1) or 1032.05(b)(2).

An Attenuated Total Reflectance-Fourier Transform Infrared spectrum (ATR-FTIR) shall be collected for both the softening compound as well as the softener modified

asphalt binder at the dose intended for qualification. The ATR-FTIR spectra shall be collected on unaged softener modified binder, 20-hour Pressurized Aging Vessel (PAV) aged softener modified binder, and 40-hour PAV aged softener modified binder. The ATR-FTIR shall be collected in accordance with Illinois Test Procedure 601. The electronic files spectral files (in one of the following extensions or equivalent: *.SPA, *.SPG, *.IRD, *.IFG, *.CSV, *.SP, *.IRS, *.GAML, *. [0-9], *.IGM, *.ABS, *.DRT, *.SBM, *.RAS) shall be submitted to the Central Bureau of Materials.

Softener modified asphalt binders shall meet the requirements in Table 4.

Table 4 - Requirements for Softener Modified Asphalt Binders	
Test	Asphalt Grade
	SM PG 46-28 SM PG 46-34
	SM PG 52-28 SM PG 52-34
	SM PG 58-22 SM PG 58-28
	SM PG 64-22
Small Strain Parameter (AASHTO PP 113) BBR, ΔT_c , 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	-5°C min.
Large Strain Parameter (Illinois Modified AASHTO T 391) DSR/LAS Fatigue Property, $\Delta G^* _{peak}$, 40 hrs PAV (40 hrs continuous or 2 PAV at 20 hrs)	≥ 54 %

The following grades may be specified as tack coats.

Asphalt Grade	Use
PG 58-22, PG 58-28, PG 64-22	Tack Coat"

Revise Article 1031.06(c)(1) and 1031.06(c)(2) of the Standard Specifications to read:

“(1) RAP/RAS. When RAP is used alone or RAP is used in conjunction with RAS, the percentage of virgin ABR shall not exceed the amounts listed in the following table.

HMA Mixtures - RAP/RAS Maximum ABR % ^{1/ 2/}			
Ndesign	Binder	Surface	Polymer Modified Binder or Surface ^{3/}
30	30	30	10
50	25	15	10
70	15	10	10
90	10	10	10

1/ For Low ESAL HMA shoulder and stabilized subbase, the RAP/RAS ABR shall not exceed 50 percent of the mixture.

- 2/ When RAP/RAS ABR exceeds 20 percent, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).
- 3/ The maximum ABR percentages for ground tire rubber (GTR) modified mixes shall be equivalent to the percentages specified for SBS/SBR polymer modified mixes.
- (2) FRAP/RAS. When FRAP is used alone or FRAP is used in conjunction with RAS, the percentage of virgin asphalt binder replacement shall not exceed the amounts listed in the following table.

HMA Mixtures - FRAP/RAS Maximum ABR % ^{1/ 2/}			
Ndesign	Binder	Surface	Polymer Modified Binder or Surface ^{3/}
30	55	45	15
50	45	40	15
70	45	35	15
90	45	35	15
SMA	- -	- -	25
IL-4.75	- -	- -	35

- 1/ For Low ESAL HMA shoulder and stabilized subbase, the FRAP/RAS ABR shall not exceed 50 percent of the mixture.
- 2/ When FRAP/RAS ABR exceeds 20 percent for all mixes, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent ABR would require a virgin asphalt binder grade of PG 64-22 to be reduced to a PG 58-28).
- 3/ The maximum ABR percentages for GTR modified mixes shall be equivalent to the percentages specified for SBS/SBR polymer modified mixes."

Add the following to the end of Note 2 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 shall be capable of providing continuous mechanical mixing throughout and/or recirculation of the asphalt binder to provide a uniform mixture. The tank shall be heated and capable of maintaining the temperature of the asphalt binder at 300 °F to 350 °F (149 °C to 177 °C). The asphalt binder metering systems of dryer drum plants shall be calibrated with the actual GTR modified asphalt binder material with an accuracy of ± 0.40 percent."

RAISED REFLECTIVE PAVEMENT MARKERS (BDE)

Effective: November 1, 2025

Revise the eighth sentence of the second paragraph of Article 781.03(a) of the Standard Specifications to read:

“A rapid setting epoxy selected from the Department’s qualified product list for raised reflective pavement markers shall be poured into the cut to within 3/8 in. (9 mm) of the pavement surface.”

Revise the first sentence of Article 1096.01 of the Standard Specifications to read:

“**1096.01 Raised Reflective Pavement Markers.** Raised reflective pavement markers shall meet the following requirements and be on the Department’s qualified product list.”

80473

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 2024

Revised: April 1, 2024

Revise the first paragraph of Article 669.04 of the Standard Specifications to read:

“669.04 Regulated Substances Monitoring. Regulated substances monitoring includes environmental observation and field screening during regulated substances management activities. The excavated soil and groundwater within the work areas shall be managed as either uncontaminated soil, hazardous waste, special waste, or non-special waste.

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).”

Revise the first two sentences of the nineteenth paragraph of Article 669.05 of the Standard Specifications to read:

“The Contractor shall coordinate waste disposal approvals with the disposal facility and provide the specific analytical testing requirements of that facility. The Contractor shall make all arrangements for collection, transportation, and analysis of landfill acceptance testing.”

Revise the last paragraph of Article 669.05 of the Standard Specifications to read:

“The Contractor shall select a permitted landfill facility or CCDD/USFO facility meeting the requirements of 35 Ill. Admin. Code Parts 810-814 or Part 1100, respectively. The Department will review and approve or reject the facility proposed by the Contractor based upon information provided in BDE 2730. The Contractor shall verify whether the selected facility is compliant with those applicable standards as mandated by their permit and whether the 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 facility shall in no manner delay the construction schedule or alter the Contractor's responsibilities as set forth.”

Revise the first paragraph of Article 669.07 of the Standard Specifications to read:

“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. All other 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.

Topsoil for re-use as final cover which has been field screened and found not to exhibit PID readings over daily background readings as documented on the BDE 2732, visual staining or

odors, and is classified according to Articles 669.05(a)(2), (a)(3), (a)(4), (b)(1), or (c) may be temporarily staged at the Contractor's option."

Add the following paragraph after the sixth paragraph of Article 669.11 of the Standard Specifications.

"The sampling and testing of effluent water derived from dewatering discharges for priority pollutants volatile organic compounds (VOCs), priority pollutants semi-volatile organic compounds (SVOCs), or priority pollutants metals, will be paid for at the contract unit price per each for VOCS GROUNDWATER ANALYSIS using EPA Method 8260B, SVOCS GROUNDWATER ANALYSIS using EPA Method 8270C, or RCRA METALS GROUNDWATER ANALYSIS using EPA Methods 6010B and 7471A. This price shall include transporting the sample from the job site to the laboratory."

Revise the first sentence of the eight paragraph of Article 669.11 of the Standard Specifications to read:

"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) to be managed and disposed of, if required and approved by the Engineer, will be paid according to Article 109.04."

80455

SHORT TERM AND TEMPORARY PAVEMENT MARKINGS (BDE)

Effective: April 1, 2024

Revised: April 2, 2024

Revise Article 701.02(d) of the Standard Specifications to read:

“(d) Pavement Marking Tapes (Note 3) 1095.06”

Add the following Note to the end of Article 701.02 of the Standard Specifications:

“Note 3. White or yellow pavement marking tape that is to remain in place longer than 14 days shall be Type IV tape.”

Revise Article 703.02(c) of the Standard Specifications to read:

“(c) Pavement Marking Tapes (Note 1) 1095.06”

Add the following Note to the end of Article 703.02 of the Standard Specifications:

“Note 1. White or yellow pavement marking tape that is to remain in place longer than 14 days shall be Type IV tape.”

Revise Article 1095.06 of the Standard Specifications to read:

“1095.06 Pavement Marking Tapes. Type I white or yellow marking tape shall consist of glass spheres embedded into a binder on a foil backing that is precoated with a pressure sensitive adhesive. The spheres shall be of uniform gradation and distributed evenly over the surface of the tape.

Type IV tape shall consist of white or yellow tape with wet reflective media incorporated to provide immediate and continuing retroreflection in wet and dry conditions. The wet retroreflective media shall be bonded to a durable polyurethane surface. The patterned surface shall have approximately 40 ± 10 percent 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 reflective elements or particles.

Blackout tape shall consist of a matte black, non-reflective, patterned surface that is precoated with a pressure sensitive adhesive.

- (a) Color. The white and yellow markings 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 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 min.
Yellow *	36 - 59

*Shall match Aerospace Material Specification Standard 595 33538 (Orange Yellow) and the chromaticity limits as follows.

x	0.490	0.475	0.485	0.530
y	0.470	0.438	0.425	0.456

- (b) Retroreflectivity. The white and yellow markings shall be retroreflective. Reflective values measured in accordance with the photometric testing procedure of ASTM D 4061 shall not be less than those listed in the table below. The coefficient of retroreflected luminance, R_L , shall be expressed as average millicandelas/footcandle/sq ft (millicandelas/lux/sq m), measured on a 3.0 x 0.5 ft (900 mm x 150 mm) panel at 86 degree entrance angle.

Coefficient of Retroreflected Luminance, R_L , Dry					
Type I			Type IV		
Observation Angle	White	Yellow	Observation Angle	White	Yellow
0.2°	2700	2400	0.2°	1300	1200
0.5°	2250	2000	0.5°	1100	1000

Wet retroreflectance shall be measured for Type IV under wet conditions according to ASTM E 2177 and meet the following.

Wet Retroreflectance, Initial R_L	
Color	R_L 1.05/88.76
White	300
Yellow	200

- (c) Skid Resistance. The surface of Type IV and blackout markings shall provide a minimum skid resistance of 45 BPN when tested according to ASTM E 303.
- (d) Application. The pavement marking tape shall have a precoated pressure sensitive adhesive and shall require no activation procedures. Test pieces of the tape shall be applied according to the manufacturer's instructions and tested according to ASTM D 1000, Method A, except that a stiff, short bristle roller brush and heavy hand pressure will be substituted for the weighted rubber roller in applying the test pieces to the metal test panel. Material tested as directed above shall show a minimum adhesion value of 750 g/in. (30 g/mm) width at the temperatures specified in ASTM D 1000. The adhesive shall be resistant to oils, acids, solvents, and water, and shall not leave objectionable stains or residue after removal. The material shall be flexible and conformable to the texture of the pavement.

- (e) Durability. Type IV and blackout tape shall be capable of performing for the duration of a normal construction season and shall then be capable of being removed intact or in large sections at pavement temperatures above 40 °F (4 °C) either manually or with a roll-up device without the use of sandblasting, solvents, or grinding. The Contractor shall provide a manufacturer's certification that the material meets the requirements for being removed after the following minimum traffic exposure based on transverse test decks with rolling traffic.

- (1) Time in place - 400 days
- (2) ADT per lane - 9,000 (28 percent trucks)
- (3) Axle hits - 10,000,000 minimum

Samples of the material applied to standard specimen plates will be measured for thickness and tested for durability in accordance with ASTM D 4060, using a CS-17 wheel and 1000-gram load, and shall meet the following criteria showing no significant change in color after being tested for the number of cycles indicated.

Test	Type I	Type IV	Blackout
Minimum Initial Thickness, mils (mm)	20 (0.51)	65 (1.65) ^{1/} 20 (0.51) ^{2/}	65 (1.65) ^{1/} 20 (0.51) ^{2/}
Durability (cycles)	5,000	1,500	1,500

1/ Measured at the thickest point of the patterned surface.

2/ Measured at the thinnest point of the patterned surface.

The pavement marking tape, when applied according to the manufacturer's recommended procedures, shall be weather resistant and shall show no appreciable fading, lifting, or shrinkage during the useful life of the marking. The tape, as applied, shall be of good appearance, free of cracks, and edges shall be true, straight, and unbroken.

- (f) Sampling and Inspection.

- (1) Sample. Prior to approval and use of Type IV 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 independent laboratory test report shall state the lot tested, the manufacturer's name, and the date of manufacture.

After initial approval by the Department, samples and certification by the manufacturer shall be submitted for each subsequent batch of Type IV tape 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, the manufacturer's name, and the date of manufacture.

- (2) Inspection. The Contractor shall provide a manufacturer's certification to the Engineer stating the material meets all requirements of this specification. All material samples for acceptance tests shall be taken or witnessed by a representative of the Bureau of Materials and shall be submitted to the Engineer of Materials, 126 East Ash Street, Springfield, Illinois 62704-4766 at least 30 days in advance of the pavement marking operations."

80457

SIGN PANELS AND APPURTENANCES (BDE)

Effective: January 1, 2025

Revised: April 1, 2025

Add Article 720.02(c) of the Standard Specifications to read:

“(c) Aluminum Epoxy Mastic1008.03”

Revise the second and third paragraphs of Article 720.02 of the Standard Specifications to read:

“The sign mounting support channel shall be manufactured from steel or aluminum and shall be according to Standard 720001.

Steel support channels shall be according to ASTM A 1011 (A 1011M), ASTM A 635 (A 635M), ASTM A 568 (A 568M), or ASTM A 684 (A 684M), and shall be galvanized. Galvanizing shall be according to ASTM A 653 (A 653M) when galvanized before fabrication, and AASHTO M 111 (M 111M) when galvanized after fabrication. Field or post fabricated drilled holes shall be spot painted with one coat of aluminum epoxy mastic paint prior to installation.”

Revise the fifth paragraph of Article 720.02 of the Standard Specifications to read:

“The stainless steel banding for mounting signs or sign support channels to light or signal standards shall be according to ASTM A 240 (A 240M) Type 302 stainless steel.”

80462

SOURCE OF SUPPLY AND QUALITY REQUIREMENTS (BDE)

Effective: January 2, 2023

Add the following to Article 106.01 of the Standard Specifications:

“The final manufacturing process for construction materials and the immediately preceding manufacturing stage for construction materials shall occur within the United States. Construction materials shall include an article, material, or supply that is or consists primarily of the following.

- (a) Non-ferrous metals;
- (b) Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
- (c) Glass (including optic glass);
- (d) Lumber;
- (e) Drywall.

Items consisting of two or more of the listed construction materials that have been combined through a manufacturing process, and items including at least one of the listed materials combined with a material that is not listed through a manufacturing process shall be exempt.”

80448

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

SUBMISSION OF BIDDERS LIST INFORMATION (BDE)

Effective: January 2, 2025

Revised: March 2, 2025

In accordance with 49 CFR 26.11(c) all DBE and non-DBEs who bid as prime contractors and subcontractors shall provide bidders list information, including all DBE and non-DBE firms from whom the bidder has received a quote or bid to work as a subcontractor, whether or not the bidder has relied upon that bid in placing its bid as the prime contractor.

The bidders list information shall be submitted with the bid using the link provided within the “Integrated Contractor Exchange (iCX)” application of the Department’s “EBids System”.

80463

SUBMISSION OF PAYROLL RECORDS (BDE)

Effective: April 1, 2021

Revised: November 2, 2023

FEDERAL AID CONTRACTS. Revise the following section of Check Sheet #1 of the Recurring Special Provisions to read:

“STATEMENTS AND PAYROLLS

The payroll records shall include the worker’s name, social security number, last known address, telephone number, email address, classification(s) of work actually performed, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof), daily and weekly number of hours actually worked in total, deductions made, and actual wages paid.

The Contractor and each subcontractor shall submit certified payroll records to the Department each week from the start to the completion of their respective work, except that full social security numbers, last known addresses, telephone numbers, and email addresses shall not be included on weekly submittals. Instead, the payrolls need only include an identification number for each employee (e.g., the last four digits of the employee’s social security number). The submittals shall be made using LCPTracker Pro software. The software is web-based and can be accessed at <https://lcptracker.com/>. When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate option (“No Work”, “Suspended”, or “Complete”) selected.”

STATE CONTRACTS. Revise Item 3 of Section IV of Check Sheet #5 of the Recurring Special Provisions to read:

- “3. Submission of Payroll Records. The Contractor and each subcontractor shall, no later than the 15th day of each calendar month, file a certified payroll for the immediately preceding month to the Illinois Department of Labor (IDOL) through the Illinois Prevailing Wage Portal in compliance with the State Prevailing Wage Act (820 ILCS 130). The portal can be found on the IDOL website at <https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/Prevailing-Wage-Portal.aspx>. Payrolls shall be submitted in the format prescribed by the IDOL.

In addition to filing certified payroll(s) with the IDOL, the Contractor and each subcontractor shall certify and submit payroll records to the Department each week from the start to the completion of their respective work, except that full social security numbers shall not be included on weekly submittals. Instead, the payrolls shall include an identification number for each employee (e.g., the last four digits of the employee’s social security number). In addition, starting and ending times of work each day may be omitted from the payroll records submitted. The submittals shall be made using LCPTracker Pro software. The software is web-based and can be accessed at <https://lcptracker.com/>.

When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate option (“No Work”, “Suspended”, or “Complete”) selected.”

80437

SURVEYING SERVICES (BDE)

Effective: April 1, 2025

Delete the fourth paragraph of Article 667.04 of the Standard Specifications.

Delete Section 668 of the Standard Specifications.

80465

TRAINING SPECIAL PROVISIONS (BDE)

Effective: October 15, 1975

Revised: September 2, 2021

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 1. In the event the Contractor subcontracts a portion of the contract work, it 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 ensure 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 it employs 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 it 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 or she has successfully completed a training course leading to journeyman status or in which he or she 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 Employment Training Administration shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the Contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the Contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the Contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A Contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The Contractor shall furnish the trainee a copy of the program he will follow in providing the training. The Contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The Contractor shall provide for the maintenance of records and furnish periodic reports documenting its performance under this Training Special Provision.

For contracts with an awarded contract value of \$500,000 or more, the Contractor is required to comply with the Illinois Works Apprenticeship Initiative (30 ILCS 559/20-20 to 20-25) and all applicable administrative rules to the extent permitted by Section 20-20(g). For federally funded projects, the number of trainees to be trained under this contract, as stated in the Training Special Provisions, will be the established goal for the Illinois Works Apprenticeship Initiative 30 ILCS 559/20-20(g). The Contractor shall make a good faith effort to meet this goal. For federally funded projects, the Illinois Works Apprenticeship Initiative will be implemented using the FHWA approved OJT procedures. The Contractor must comply with the recordkeeping and reporting obligations of the Illinois Works Apprenticeship Initiative for the life of the project, including the certification as to whether the trainee/apprentice labor hour goals were met.

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

VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE)

Effective: November 1, 2021

Revised: November 1, 2022

Add the following paragraph after the first paragraph of Article 701.08 of the Standard Specifications:

“The Contractor shall equip all vehicles and equipment with high-intensity oscillating, rotating, or flashing, amber or amber-and-white, warning lights which are visible from all directions. In accordance with 625 ILCS 5/12-215, the lights may only be in operation while the vehicle or equipment is engaged in construction operations.”

80439

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012

Revised: January 2, 2025

The following applies to all Disadvantaged Business Enterprise (DBE) trucks on the project, whether they are utilized for DBE goal credit or not.

The Contractor shall notify the Engineer at least three days prior to DBE trucking activity.

The Contractor shall submit a weekly report of DBE trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) to the Engineer on Department form "SBE 723" within ten business days following the reporting period. The reporting period shall be Sunday through Saturday 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

Revised: January 1, 2025

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 shall be MASH compliant.

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 shall be MASH compliant.

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 compliant. Category 3 devices manufactured on or before December 31, 2019, and compliant

with NCHRP 350, 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 sign supports, speed feedback displays, 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 compliant is available, an NCHRP 350 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

WORKING DAYS (BDE)

Effective: January 1, 2002

The Contractor shall complete the work within **110** working days.

80071

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Non-segregated 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. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

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, United States Code, as required in 23 CFR 633.102(b) (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). 23 CFR 633.102(e).

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. 23 CFR 633.102(e).

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) in accordance with 23 CFR 633.102. 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 solicitation-for-bids or request-for-proposals 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). 23 CFR 633.102(b).

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. 23 CFR 633.102(d).

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. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A 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 Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), 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 Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), 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 Part 230, Subpart A, 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 (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 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 Part 35 and 29 CFR Part 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. 23 CFR 230.409 (g)(4) & (5).

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, sexual orientation, gender identity, 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 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 or other knowledgeable company official.

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, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure 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. 23 CFR 230.409. 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, sexual orientation, gender identity, 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, sexual orientation, gender identity, 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 thereunder. Employers must provide reasonable accommodation in all employment situations 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, sexual orientation, gender identity, 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, 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. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. 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 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 recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

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 more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, 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, sexual orientation, gender identity, 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), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

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 (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), 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 basic hourly 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. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40 U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. 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 must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. 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 classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must 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. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must 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 be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate 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 used 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) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) 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 will be sent by the contracting officer by email to DBAconformance@dol.gov. 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.

(4) 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 will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The 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.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division

under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must 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.

d. *Fringe benefits not expressed as an hourly rate.*

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 may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* 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, in accordance with the criteria set forth in § 5.28, 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.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and 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.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901–3907](#).

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; 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 [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section 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 [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act, the contractor must 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.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting

agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <https://www.dol.gov/sites/dolgov/files/WHDL/legacy/files/wh347.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working 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 [29 CFR part 3](#); and

(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(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH-347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under [18 U.S.C. 1001](#) and [31 U.S.C. 3729](#).

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, 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, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under [29 CFR part 6](#) any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address

of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform 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 (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must 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, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeymen on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must 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 this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeymen under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

c. 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. 23 CFR 230.111(e)(2). 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 as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 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 as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, 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 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 [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, [18 U.S.C. 1001](#).

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#); or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#).

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), 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 watchpersons 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. 29 CFR 5.5.

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 and interest from the date of the underpayment. 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 watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* 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.

* \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, 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 that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the

event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

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" in paragraph 1 of Section VI 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: (based on longstanding interpretation)

- (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. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), 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. Pursuant to 23 CFR 635.116(c), 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. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

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 Part 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. 23 CFR 635.108.

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 Part 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). 29 CFR 1926.10.

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 Part 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 11, 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 (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

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. 2 CFR 180.220 and 1200.220.

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. 2 CFR 180.320.

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. 2 CFR 180.325.

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. 2 CFR 180.345 and 180.350.

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, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient 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 recipient or subrecipient 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. 2 CFR 180.330.

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. 2 CFR 180.220 and 180.300.

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. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. 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 System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.

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 CFR 180.325.

* * * * *

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 CFR 180.335;.

(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, 2 CFR 180.800;

(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, 2 CFR 180.700 and 180.800; 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. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

* * * * *

3. 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). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant 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. 2 CFR 180.365.

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, Subpart I, 180.900 – 180.1020, 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 recipient or subrecipient of Federal funds and a participant (such as the prime or general contractor). "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 recipient or subrecipient 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. 2 CFR 1200.220 and 1200.332.

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. 2 CFR 180.220 and 1200.220.

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 System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

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. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should 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 Part 20, App. A.

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.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor 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. 46 CFR 381.7.

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 Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY
SYSTEM OR APPALACHIAN LOCAL ACCESS**

ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)
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.