137

Letting June 17, 2022

Notice to Bidders, Specifications and Proposal

Illinois Department of Transportation

Contract No. 97777
MADISON County
Section 16-00108-00-TL (Edwardsville)
Routes FAP 600 / FAU 8887 (Troy Road)
Project NQJU-219 ()
District 8 Construction Funds

Prepared by	F
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. June 17, 2022 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. 97777
   MADISON County
   Section 16-00108-00-TL (Edwardsville)
   Project NQJU-219 ()
   Routes FAP 600 / FAU 8887 (Troy Road)
   District 8 Construction Funds

Traffic signal improvments along Troy Road from Monclaire Avenue to Illini Drive in Glen Carbon and Edwardsville.

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

Omer Osman,
Secretary

CONTRACT 97777

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2022

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

No ERRATA this year.

SUPPLEMENTAL SPECIFICATIONS

RECURRING SPECIAL PROVISIONS

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

LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

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BDE SPECIAL PROVISIONS

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

	File Name	Pg.		Special Provision Title	Effective	Revised
	80099	38	X	Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2022
*	80274			Aggregate Subgrade Improvement	April 1, 2012	April 1, 2022
	80192			Automated Flagger Assistance Device	Jan. 1, 2008	
	80173			Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
	80246			Bituminous Surface Treatment with Fog Seal	Jan. 1, 2020	Jan. 1, 2022
	80436	40	X	Blended Finely Divided Minerals	April 1, 2021	
	80241			Bridge Demolition Debris	July 1, 2009	
	5026I			Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5048I			Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5049I			Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5053I			Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
	80384	41	X	Compensable Delay Costs	June 2, 2017	April 1, 2019
	80198			Completion Date (via calendar days)	April 1, 2008	
	80199			Completion Date (via calendar days) Plus Working Days	April 1, 2008	
	80293			Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	July 1, 2016
	80311			Concrete End Sections for Pipe Culverts	Jan. 1, 2013	April 1, 2016
	80261	45	X	Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
	80434			Corrugated Plastic Pipe (Culvert and Storm Sewer)	Jan. 1, 2021	
	80029	48	X	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Mar. 2, 2019
	80229			Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
	80433			Green Preformed Thermoplastic Pavement Markings	Jan. 1, 2021	Jan. 1, 2022
	80422			High Tension Cable Median Barrier	Jan. 1, 2020	Jan. 1, 2022
*	80443			High Tension Cable Median Barrier Removal	April 1, 2022	
*	80444			Hot-Mix Asphalt – Patching	April 1, 2022	
	80442			Hot-Mix Asphalt – Start of Production	Jan. 1, 2022	
	80438			Illinois Works Apprenticeship Initiative – State Funded Contracts	June 2, 2021	Sept. 2, 2021
	80411			Luminaires, LED	April 1, 2019	Jan. 1, 2022
	80045			Material Transfer Device	June 15, 1999	Jan. 1, 2022
	80418			Mechanically Stabilized Earth Retaining Walls	Nov. 1, 2019	Nov. 1, 2020
	80430	58	X	Portland Cement Concrete – Haul Time	July 1, 2020	
	3426I			Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2022
	80395			Sloped Metal End Section for Pipe Culverts	Jan. 1, 2018	
	80340			Speed Display Trailer	April 2, 2014	Jan. 1, 2022
	80127			Steel Cost Adjustment	April 2, 2014	Jan. 1, 2022
	80397	59	X	Subcontractor and DBE Payment Reporting	April 2, 2018	
	80391	60	X	Subcontractor Mobilization Payments	Nov. 2, 2017	April 1, 2019
	80437			Submission of Payroll Records	April 1, 2021	
	80435			Surface Testing of Pavements – IRI	Jan. 1, 2021	Jan. 1, 2022
	80410			Traffic Spotters	Jan. 1, 2019	
	20338			Training Special Provisions	Oct. 15, 1975	Sept. 2, 2021
	80318			Traversable Pipe Grate for Concrete End Sections	Jan. 1, 2013	Jan. 1, 2018
	80429			Ultra-Thin Bonded Wearing Course	April 1, 2020	Jan. 1, 2022
	80440			Waterproofing Membrane System	Nov. 1, 2021	
	80302	61	X	Weekly DBE Trucking Reports	June 2, 2012	Nov. 1, 2021
	80427	62	X	Work Zone Traffic Control Devices	Mar. 2, 2020	
	80071	64	X	Working Days	Jan. 1, 2002	

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2022, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of FAP 600/FAU 8887 (Troy Road); Section 16-00108-00-TL; with in the Village of Glen Carbon and City of Edwardsville, Madison County, Illinois; and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

LOCATION OF PROJECT

Intersections included within the proposed traffic signal and interconnect improvements project area along Troy Road (FAP 600/FAU 8887), within the Village of Glen Carbon and City of Edwardsville:

1. Troy Road and Cottonwood Road (Glen Carbon / IDOT maintained traffic signal)
2. Troy Road and Junction Drive (Glen Carbon / IDOT maintained traffic signal)
3. Troy Road and IL Route 159/Illini Drive (Glen Carbon / IDOT maintained traffic signal)
4. Troy Road and Center Grove Road (Edwardsville)
5. Troy Road and Lavelle Drive (Edwardsville)
6. Troy Road and Governors Parkway (Edwardsville)
7. Troy Road and Edwardsville Crossing Drive (Edwardsville)
8. Troy Road and Harvard Drive (Edwardsville)
9. Troy Road and Montclaire Avenue (Edwardsville)

DESCRIPTION OF PROJECT

Improvements include signal and pedestrian facility related upgrades to the nine (9) signalized intersections within the project limits and development of a closed loop fiber optic interconnect system. General improvements and current scope items associated with the project include: upgraded signal controllers and/or signal cabinets at select intersections; replacement of antiquated signal cabinets; removal, relocation, and/or replacement of signal heads and associated cabling at select locations; install fiber optic cable, conduit, and handholes; install ADA compliant pedestrian signal heads and pushbuttons; and curb ramp reconstruction at select intersections.

SUBMITTAL OF EEO/LABOR DOCUMENTATION

Effective: April 2016

This work shall be done in accordance with Check Sheets No. 1, 3 and 5 of the IDOT Supplemental Specifications and Recurring Special Provisions and the "Weekly DBE Trucking Reports (BDE)" Special Provision, except as here-in modified.

PAYROLL AND STATEMENT OF COMPLIANCE:

Certified payroll, (FORM SBE 48 OR AN APPROVED FACSIMILE) and the Statement of Compliance, (FORM SBE 348) shall be submitted by two methods:

1. By Mail (United States Postal Service): The ORIGINAL of the certified payroll and the Statement of Compliance for the Prime Contractor and each Subcontractor shall be submitted by mail to the Regional Engineer for District 8.

2. Electronically: Scan both the ORIGINAL of the certified payroll and the Statement of Compliance to the same PDF file and email to the District at the email address designated by the District EEO Officer.

SBE 48 and SBE 348 forms shall be submitted weekly and will be considered late if received after midnight seven (7) business days after the payroll ending date.

WEEKLY DBE TRUCKING REPORT:

The Weekly DBE Trucking Report, (FORM SBE 723) shall be submitted electronically. Scan the form to a PDF file and email to the District at the email address designated by the District EEO Officer.

SBE 723 forms shall be submitted weekly and will be considered late if received after midnight ten (10) business days following the reporting period.

MONTHLY LABOR SUMMARY & MONTHLY CONTRACT ACTIVITY REPORTS:

The Monthly Labor Summary Report (MLSR) shall be submitted by one of two methods:

1. For contractors having IDOT contracts valued in the aggregate at $250,000 or less, the report may be typed or clearly handwritten using Form D8 PI0148. Submit the ORIGINAL report by mail to the Regional Engineer for District Eight. Contractors also have the option of using the method #2 outlined below.

2. For contractors having IDOT contracts valued in the aggregate at more than $250,000, the report must be submitted in a specific "Fixed Length Comma Delimited ASCII Text File Format". This file shall be submitted by e-mail using specific file formatting criteria provided by the District EEO Officer. Contractors must submit a sample text file to District 8 for review at least fourteen (14) days prior to the start of construction.

The Monthly Contract Activity Report (MCAR) may be typed or clearly handwritten using Form D8 PI0149.

The Monthly Labor Summary Report and the Monthly Contract Activity Report shall be submitted concurrently. If the method of transmittal is method #1 above then both the MLSR and the MCAR shall be mailed together in the same envelope. If the method of transmittal is method #2 above then the MCAR shall be scanned to a .pdf file and attached to the email containing the MLSR .txt file.

The MLSR and MCAR must be submitted for each consecutive month, for the duration of the project, and will be considered late if received after midnight ten (10) calendar days following the reporting period.

REQUEST FOR APPROVAL OF SUBCONTRACTOR:

The ORIGINAL and one copy of the Request for Approval of Subcontractor (FORM BC 260A) shall be submitted to the District at the IDOT Preconstruction Conference.

SUBSTANCE ABUSE PREVENTION PROGRAM CERTIFICATION:

The ORIGINAL and one copy of the Substance Abuse Prevention Program Certification (FORM BC 261) shall be submitted to the District at the IDOT Preconstruction Conference.

The Contractor is required to follow submittal procedures as provided by the EEO Officer at the preconstruction conference and to follow all revisions to those procedures as issued thereafter.

If a report is rejected, it is the contractor's responsibility to make required adjustments and/or corrections and resubmit the report. Reports not submitted and accepted within the established timeframes will be considered late.

Disclosure of this information is necessary to accomplish the statutory purpose as outlined under 23CFR part 230 and 41CFR part 60.4 and the Illinois Human Rights Act. Disclosure of this information is REQUIRED. **Failure to comply with this special provision may result in the withholding of payments to the contractor, and/or cancellation, termination, or suspension of the contract in whole or part.**

This Special Provision must be included in each subcontract agreement.

ALL HARD COPY FORMS TO BE SUBMITTED TO:

Region 5 Engineer
Illinois Department of Transportation
ATTN: EEO/LABOR OFFICE
1102 Eastport Plaza Drive
Collinsville, IL 62234-6198

Compliance with this Special Provision shall be included in the cost of the contract and no additional compensation will be allowed for any costs incurred.

EXAMINATION OF SITE

Each bidder shall visit the site of the proposed work prior to submitting his/her bid and fully acquaint himself/herself with conditions, quantities, and measurements relating to the construction of this project.

The cost of labor and materials necessary to comply with this provision will not be paid for separately but shall be considered as included in the unit bid prices of the contract and no additional compensation will be allowed.

JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS (J.U.L.I.E.)

This work shall be done in accordance with Article 107.31 of the Standard Specifications except as herein modified.

In addition to calling J.U.L.I.E., the Contractor shall make direct contact with the Village of Glen Carbon Public Works Department (telephone number 618-288-2606) and City of Edwardsville Public Works Department (telephone number 618-692-7535) a minimum of 48 hours prior to the start of construction to allow these Local Agencies to mark the location of their facilities and to ensure that the municipal utility facilities will not be adversely affected by the proposed construction.

If any of the location makers placed by a utility company in conformance with this procedure are destroyed by Contractor operations, the Contractor shall immediately notify the Utility Owner and bear the cost of remarking the facilities. Compliance with this special provision shall be included in the cost of the contract and no additional compensation will be allowed for any costs incurred.

The cost of labor and materials necessary to comply with this provision will not be paid for separately but shall be considered as included in the unit bid prices of the contract and no additional compensation will be allowed.

UNDERGROUND FACILITIES AND UTILITIES

The location of underground facilities and utilities has been determined from surface observations and available surveys and records and must be considered approximate. There may be others, the existence of which is not presently shown or known. It is the Contractor’s responsibility to determine the existence and location of all underground facilities, structures and utilities and to protect them from damage during construction.

The Contractor shall expose each utility prior to installing the new traffic signal equipment. The Contractor is responsible for the cost of uncovering, hand digging, or any special excavation around utilities as necessary.

The cost of labor and materials necessary to comply with this provision will not be paid for separately but shall be considered as included in the unit bid prices of the contract and no additional compensation will be allowed.

STATUS OF UTILITIES TO BE ADJUSTED

Name & Address of Utility	Type	Location	Estimated Date Relocation Complete
Ameren Illinois 6 Executive Drive Collinsville, IL 62234 Attn: Nathan Hill Phone: (618) 301-5327 nhill2@ameren.com	Electric	Project Limits	N/A
Ameren Illinois 6 Executive Drive Collinsville, IL 62234 Attn: Nathan Hill Phone: (618) 301-5327 nhill2@ameren.com	Gas	Project Limits; see below for guidance on req'd supervision that Ameren must provide during any excavation taking place near the 8" gas main along west side of Troy Rd. between Cottonwood Rd. & Montclaire Ave..	N/A
AT&T Distribution G11629@att.com	Telephone	Project Limits	N/A
Charter Spectrum Attn: Jordan Staat Phone: (314) 393-3321 jordan.staat@charter.com	Cable	Project Limits	N/A
City of Edwardsville 118 Hillsboro Avenue Edwardsville, IL 62025 Attn: Ryan Zwijack Phone: (618) 692-7535 rzwijack@cityofedwardsville.com	Water/Sewer	Project Limits	N/A
Village of Glen Carbon 151 Main Street Glen Carbon, IL 62034 Attn: Danny Lawrence Phone: (618) 410-1476 dlawrence@glen-carbon.com	Water/Sewer	Project Limits	N/A
Extenet Systems 3030 Warrenville Rd. Lisle, IL 60532 Attn: Network Operations Center Phone: (866) 892-5327 noc@extenet-systems.com	Communication	Project Limits	N/A
MCI/Verizon Attn: Investigations Team investigations@verizon.com	Communication	Project Limits	N/A

NO UTILITIES TO BE ADJUSTED

The above represents the best information of the Department and is only included for the convenience of the bidder. The applicable provisions of Sections 102, 103, and Articles 105.07 and 107.20 of the Standard Specifications for Road and Bridge Construction shall apply.

If any utility adjustment or removal has not been completed when required by the Contractor's operation, the Contractor should notify the Engineer in writing. A request for an extension of time will be considered to the extent the Contractor's operations were affected.

The Contractor is advised that there is an 8" high pressure gas main located along the west side of Troy Road between Cottonwood Road and Montclaire Avenue. Based upon directives received from Ameren IP during the preliminary design process, the Contractor is advised that the Illinois Commerce Commission (ICC) has mandated that Ameren IP shall perform a gas safety watch and protect standby whenever any excavation near the aforementioned gas main takes place.
The Contractor shall contact the following Ameren IP representative at least 48-hours prior to any excavation taking place near the aforementioned gas main pipeline:

Mr. Guy Spickard
Damage Prevention Specialist
Ameren Illinois
1050 West Blvd.
Belleville, Il 62221
618-202-0435
GSPICKARD@AMEREN.COM

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 Work Areas. The excavated soil and groundwater within the work 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.

The following contract specific work areas shall be monitored by the Environmental Firm for soil contamination and workers protection.

PESA 3712

ISGS Site 3712-3 Quik Trip Gas Station, 2490 Troy Road, Edwardsville, Madison County, Illinois

- Station 373+04 to Station 373+32 (IL Route 159), 62 to 64 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). COC sampling parameter: VOCs, SVOCs and Metals.

ISGS Site 3712-6 Commerce Bank, 2496 Troy Road, Edwardsville, Madison County, Illinois

- Station 369+16 to Station 369+29 (IL Route 159), 45 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). COC sampling parameter: VOCs, SVOCs and Metals.
- Station 371+86 to Station 372+15 (IL Route 159), 58 to 55 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). COC sampling parameter: VOCs, SVOCs and Metals.

ISGS Site 3712-8 MCT Goshen Trail, 2500 to 2600 blocks of Troy Road, Edwardsville, Madison County, Illinois

- Station 369+00 to Station 369+13 (IL Route 159), 45 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). COC sampling parameter: VOCs, SVOCs, PCBs and Metals.

ISGS Site 3712-10 Lowes, 159 Whistle Stop Drive, Glen Carbon, Madison County, Illinois

- Station 361+69 to Station 366+42 (IL Route 159), 60 to 109 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). COC sampling parameter: VOCs, SVOCs and Metals.

ISGS Site 3712-11 Multi-Tenant Commercial/Retail Building, 3010 to 3024 S. IL 159, Glen Carbon, Madison County, Illinois

- Station 360+33 to Station 360+70 (IL Route 159), 58 to 63 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). COC sampling parameter: VOCs, SVOCs and Metals.
- Station 360+48 to Station 360+74 (IL Route 159), 56 to 57 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). COC sampling parameter: VOCs, SVOCs and Metals.
- Station 360+60 to Station 382+74 (IL Route 159), 49 to 62 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). COC sampling parameter: VOCs, SVOCs and Metals.

PESA 3712A

ISGS Site 3712A-28 Red Robin, 6699 Edwardsville Crossing Drive, Edwardsville, Madison County, Illinois

- Station 401+00 to Station 401+14 (IL Route 159), 43 to 58 feet LT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). COC sampling parameter: manganese.
- Station 400+89 to Station 401+05 (IL Route 159), 42 to 58 feet LT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). COC sampling parameter: manganese.
- Station 400+94 to Station 401+17 (IL Route 159), 52 to 53 feet LT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). COC sampling parameter: manganese.

ISGS Site 3712A-29 Busey Bank, 2004 Troy Road, Edwardsville, Illinois

- Station 407+82 to Station 408+08 (IL Route 159), 36 to 44 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). COC sampling parameters: manganese and benzo(a)pyrene.
- Station 407+83 to Station 408+10 (IL Route 159), 32 to 44 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). COC sampling parameters: manganese and benzo(a)pyrene.
- Station 407+72 to Station 408+08 (IL Route 159), 42 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(1). COC sampling parameters: manganese and benzo(a)pyrene.

ISGS Site 3712A-34 Commercial Building, 2120-2122 Troy Road, Edwardsville, Illinois

- Station 394+14 to Station 394+60 (IL Route 159), 42 to 63 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(a)(5). COC sampling parameters: arsenic, manganese.
- Station 393+97 to Station 394+26 (IL Route 159), 40 to 57 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(c). COC sampling parameter: manganese.
- Station 394+00 to Station 394+38 (IL Route 159), 45 to 71 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(c). COC sampling parameter: manganese.
- Station 396+76 to Station 396+89 (IL Route 159), 45 to 46 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(c). COC sampling parameter: manganese.
- Station 399+78 to Station 3990+87 (IL Route 159), 45 to 46 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(c). COC sampling parameter: manganese.
- Station 399+79 to Station 399+45 (IL Route 159), 36 to 47 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(c). COC sampling parameter: manganese.
- Station 399+65 to Station 399+90 (IL Route 159), 42 to 43 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(c). COC sampling parameter: manganese.
- Station 401+03 to Station 401+14 (IL Route 159), 44 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(c). COC sampling parameter: manganese.

- Station 400+99 to Station 401+17 (IL Route 159), 35 to 42 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(c). COC sampling parameter: manganese.
- Station 401+02 to Station 401+29 (IL Route 159), 42 to 43 feet RT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(c). COC sampling parameter: manganese.

ISGS Site 3712A-35 Residence and Vacant Land, 2399 Troy Road and 2200-2400 blocks of Troy Road, Glen Carbon, Illinois

- Station 393+09 to Station 393+18 (IL Route 159), 59 to 81 feet LT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(c). COC sampling parameter: manganese.
- Station 393+10 to Station 393+31 (IL Route 159), 49 to 80 feet LT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(c). COC sampling parameter: manganese.
- Station 393+14 to Station 393+27 (IL Route 159), 55 to 79 feet LT: The Engineer has determined this material meets the criteria of and shall be managed in accordance with Article 669.05(c). COC sampling parameter: 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.**

Additional information on the contract specific work areas listed above collected during the regulated substances due-diligence process is available through the District's Environmental Studies Unit (DESU).

Basis of Payment: Payment for the following bid items will be made as follows:

Item No.	Description	Type
66900200	NON-SPECIAL WASTE DISPOSAL	CU YD
66900530	SOIL DISPOSAL ANALYSIS	EACH
66901001	REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN	L SUM
66901003	REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT	L SUM
66901006	REGULATED SUBSTANCES MONITORING	CAL DA

UNDERGROUND CONDUIT, COILABLE NONMETALLIC CONDUIT, 2" DIA.

Description. This work shall be in conformance with Section Sections 810 and 873 of the Standard Specifications, and consist of installing coilable nonmetallic underground conduit at the locations as shown on the Plans.

In an effort to minimize the amount of surface and/or trenched excavation within soil areas potentially containing regulated substances, the Contractor shall, where shown on the Plans, install coilable nonmetallic underground conduit via pushing/directional boring methods.

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

Basis of Payment. Payment will be considered full compensation for all labor, equipment, and material to complete the described work. This work shall be paid for at the contract unit price per foot for UNDERGROUND CONDUIT, COILABLE NONMETALLIC, 2" DIA..

CONTROLLER CABINET SPECIFICATIONS

Description. This work shall be in conformance with Sections 857 of the Standard Specifications for Road and Bridge Construction except as modified herein.

This work will take place at the following locations:

1. Troy Road and Cottonwood Road (Glen Carbon / IDOT maintained traffic signal)
2. Troy Road and Lavelle Drive (Edwardsville)
3. Troy Road and Montclaire Avenue (Edwardsville)

This specification sets forth the minimum requirements for a TS2 Type 1 traffic control modular cabinet assembly. The cabinet assembly shall meet, as a minimum, all applicable sections of the NEMA Standard Publication No. TS2-2003. Where differences occur, this specification shall govern.

1. Cabinet Design and Construction

1.1. The cabinet shall be constructed from type 5052-H32 aluminum with a minimum thickness of 0.125 inches.

1.2. The cabinet shall be designed and manufactured with materials that will allow rigid mounting, whether intended for pole, base or pedestal mounting. The cabinet must not flex on its mount.

1.2.1. A rain channel shall be incorporated into the design of the main door opening to prevent liquids from entering the enclosure. The cabinet door opening must be a minimum of 80 percent of the front surface of the cabinet. A stiffener plate shall be welded across the inside of the main door to prevent flexing.

1.2.2. The top of the cabinet shall incorporate a 1-inch slope toward the rear to prevent rain accumulation.

1.2.3. Unless otherwise specified, the cabinet shall be supplied with a natural aluminum finish. Sufficient care shall be taken in handling to ensure that scratches are minimized. All surfaces shall be free from weld flash. Welds shall be smooth, neatly formed, free from cracks, blowholes and other irregularities. All sharp edges shall be ground smooth.

1.3. Where painted cabinets are specified, the exterior shall be degreased and primed with a spray applied iron phosphate coat- equivalent to a four-stage iron phosphate coat prior to painting. The final coat shall consist of a powder coat paint Triglycidyl Isocyanurate (TGIC) applied with a minimum thickness of 2 mils.

1.4. All seams shall be sealed with RTV sealant or equivalent material on the interior of the cabinet.
1.5. All cabinets shall be supplied with a minimum of one removable shelf manufactured from 5052-H32 aluminum. Shelf shall be a minimum of 10 inches deep.
1.6. The shelf shall have horizontal slots at the rear and vertical slots at the front of the turned down side flange. The shelf shall be installed by first inserting the rear edge of the shelf on the cabinet rear sidewall mounting studs, then lowering the shelf on the front sidewall mounting studs. The shelf shall be held in place by a nylon tie-wrap inserted through holes on the front edge of the shelf and around the front sidewall mounting studs.
1.7. The front edge of the shelf shall have holes punched every 6 inches to accommodate tie- wrapping of cables/harnesses.
1.8. A minimum of one set of vertical "C" channels shall be mounted on each interior wall of the cabinet for the purpose of mounting the cabinet components. The channels shall accommodate spring mounted nuts or studs. All mounting rails shall extend to within 7 inches of the top and bottom of the cabinet. Sidewall rail spacing shall be 7.88 inches center-to-center. Rear wall rail spacing shall be 18.50 inches center-to-center.
1.9. The main door and police door-in-door shall close against a weatherproof and dust-proof, closed-cell neoprene gasket seal. The gasket material for the main door shall be a minimum of 0.250 inches thick by 1.00 inch wide. The gasket material for the police door shall be a minimum of 0.250 inches thick by 0.500 inches wide. The gaskets shall be permanently bonded to the cabinet.
1.10. The lower section of the cabinet shall be equipped with a louvered air entrance. The air inlet shall be large enough to allow sufficient air flow per the rated fan capacity. Louvers must satisfy the NEMA rod entry test for 3R ventilated enclosures. A non-corrosive, vermin- and insect-proof, removable air filter shall be secured to the air entrance. The filter shall fit snugly against the cabinet door wall.
1.11. The roof of the cabinet shall incorporate an exhaust plenum with a vent screen. Perforations in the vent screen shall not exceed 0.125 inches in diameter.
1.12. The main door on a size 3 or larger cabinet shall be equipped with a three-point latching mechanism.
1.13. The handle on the main door of the cabinet shall be manufactured from cast aluminum or stainless steel. The handle shall include a hasp for the attachment of an optional padlock. The cabinet door handle shall rotate counter-clockwise to open. The handle shall not extend beyond the perimeter of the main door at any time. The lock assembly shall be positioned so that the handle shall not cause any interference with the key when opening the cabinet door.
1.14. The main door hinge shall be a one-piece, continuous piano hinge with a stainless steel pin running the entire length of the door. The hinge shall be attached in such a manner that no rivets or bolts are exposed.The main door shall include a mechanism capable of holding the door open at approximately 90, 145, and 165 degrees under windy conditions. The main door of a size 3, or 4 cabinet shall include a mechanism capable of holding the door open at approximately 90 and 165 degrees under windy conditions. May be provided with two doors, one front, one back.
1.15. The main door shall be equipped with a lock compatible with existing signal cabinets along the corridor and used by maintaining agencies. Minimum of two keys shall be supplied.

1.16. The police door-in-door shall be provided with a treasury type lock matching those of other cabinets along the corridor and used by the maintaining agencies, and has a minimum of one key.
1.17. All base mounted cabinets require anchor bolts to properly secure the cabinet to its base. The cabinet flange for securing the anchor bolts shall not protrude outward from the bottom of the cabinet. When a size 3, 4, or 5 cabinet is base mounted, two anchor bolts shall be required for proper installation. Size 6 and 7 cabinets, four anchor bolts shall be required for proper installation.
1.18. Main door shall incorporate a shroud to cover the filtered louvered openings as appropriate for the design. The assembly is secured on the interior of the door over the filtered Louvers. The Shroud is louvered downward and matches the door louvers.
1.19. All enclosures must be constructed, approved and marked in accordance with the requirements for Type 1 Industrial Control Panel Enclosures contained in UL 508A, the Standard for Industrial Control Panels. Enclosure must meet NEMA 3R rating requirements and be marked with UL approval sticker.

2. Terminals and Facilities/Main Panel Design and Construction

2.1. The main panel shall be constructed from 5052-H32 brushed aluminum of 0.125 inches minimum thickness and installed so as to minimize flexing when plug-in components are installed.
2.2. All 8-, 12- and 16-position main panels are provided with a mounting mechanism which allows easy access to all wiring on the rear of the panel. Lowering of the main panel can be accomplished without the use of hand tools. Complete removal can be accomplished by the use of simple hand tools.
2.3. The terminals and facilities for this project shall be in the following configuration: Configuration #4 - Sixteen load switch sockets, six flash transfer relay sockets, one flasher socket, 2- BIU sockets, one 16-channel detector rack with one BIU, and one Type-16 MMU.
2.4. All load switch and flash transfer relay socket reference designators shall be silk-screen labeled on the front and rear of the main panel to match drawing designations. Socket pins shall be marked for reference on the rear of the panel.
2.5. A maximum of eight load switch sockets may be positioned horizontally or stacked in two rows on the main panel. Main panels requiring more than eight load switch sockets shall be mounted in one horizontal row.
2.6. All load switches shall be supported by a bracket, extending at least half the length of the load switch.
2.7. The 4- and 8- load switch position main panels shall have all field wires contained within one or two row(s) of horizontally mounted terminal blocks.
2.8. The 12- and 16-load switch position main panels shall have all field wires contained on two rows of horizontally mounted terminal blocks. The upper row shall be wired for the pedestrian and overlap field terminations. The lower row shall be reserved for phase one through phase eight vehicle field terminations.
2.9. As an alternate a 12 or 16 position horizontal main panel and field terminal configuration may be used.
2.10. All field output circuits shall be terminated on a non-fused barrier type terminal block with a minimum rating of 10 amps.

2.11. All field input/output (I/O) terminals shall be identified by permanent alphanumerical labels. All labels shall use standard nomenclature per the NEMA TS2 specification.
2.12. It shall be possible to flash either the yellow or red indication on any vehicle movement and to change from one color indication to the other by use of a screwdriver.
2.13. Field terminal blocks shall be wired to use four positions per vehicle or overlap phase (green, yellow, and red, flash). It shall not be necessary to de-buss field terminal blocks for flash programming.
2.14. The main panel shall contain at least one flasher socket (silk screen labeled) capable of operating a 15 amp, 2 pole, NEMA solid-state flasher. The flasher shall be supported by a bracket, extending at least half its length.
2.15. One RC network shall be wired in parallel with each group of three flash-transfer relays and any other relay coils.
2.16. All logic-level, NEMA-controller and Malfunction Management Unit input and output terminations on the main panel shall be permanently labeled. Cabinet prints shall identify the function of each terminal position.
2.17. At a minimum, three 20-position terminal blocks shall be provided at the top of the main panel to provide access to the controller unit's programmable and non-programmable I/O. Terminal blocks for DC signal interfacing shall have a number 6-32 x 7/32 inch screw as minimum.
2.18. All main panel wiring shall conform to the following wire size and color:
- Green/Walk load switch output - brown wire - 14 gauge
- Yellow load switch output - yellow wire - 14 gauge
- Red/Don't Walk load switch - red wire output - 14 gauge
- MMU (other than AC power) - violet wire - 22 gauge
- Controller I/O - blue wire - 22 gauge
- AC Line (power panel to - black wire main panel) - 8 / 10 gauge
- AC Line (main panel) - black wire - 10 gauge
- AC Neutral (power panel to - white wire main panel) - 8 / 10 gauge
- AC Neutral (main panel) - white wire - 10 gauge
- Earth ground (power panel) - green wire - 8 gauge
- Logic ground - gray wire - 22 gauge
- Flash programming - Orange wire
- Flasher terminal - Black wire red or yellow field terminal - 14 gauge

2.19. All wiring, 14 AWG and smaller, shall conform to MIL W 16878/1, type B/N, 600V, 19- strand tinned copper. The wire shall have a minimum of 0.010 inches thick PVC insulation with clear nylon jacket and rated to 105 degrees Celsius. All 12 AWG and larger wire shall have UL listed THHN/THWN 90 degrees Celsius, 600V, 0.020 inches thick PVC insulation and clear nylon jacketed.
2.20. Connecting cables shall be sleeved in a braided nylon mesh or poly-jacketed. The use of exposed tie-wraps or interwoven cables is unacceptable.
2.21. All Terminals and Facilities configurations shall be provided with BIU wiring assignments consistent with NEMA TS2-1998 specifications.
2.22. All Terminals and Facilities configurations shall be provided with sufficient RS-485 Port 1 communication cables to allow for the intended operation of that cabinet. Each communication cable connector shall be a 15 pin metal shell D subminiature type. The cable shall be a shielded cable suitable for RS-485 communications.
2.23. All main panels shall be pre-wired for a Type-16 Malfunction Management Unit.

2.24. All wiring shall be neat in appearance. All cabinet wiring shall be continuous from its point of origin to its termination point. Butt type connections/splices are not acceptable.
2.25. All connecting cables and wire runs shall be secured by mechanical clamps. Stick-on type clamps are not acceptable.
2.26. The grounding system in the cabinet shall be divided into three separate circuits (AC Neutral, Earth Ground, and Logic Ground). These ground circuits shall be connected together at a single point as outlined in the NEMA TS2 Standard.
2.27. The main panel shall incorporate a relay, designated as K1, to remove +24 VDC from the common side of the load switches when the intersection is placed into mechanical flash. The relay shall have a momentary pushbutton to apply power to the load switch inputs for ease of troubleshooting. The relay shall have a momentary pushbutton to apply power to the load switch inputs for ease of troubleshooting.
2.28. All pedestrian push button inputs from the field to the controller shall be opto-isolated through the BIU and operate at 12 VAC.
2.29. All wire (size 16 AWG or smaller) at solder joints shall be hooked or looped around the eyelet or terminal block post prior to soldering to ensure circuit integrity. Lap joint soldering is not acceptable.

3. Power Panel Design and Construction

3.1. The power panel shall be integrated into the main panel and be located on the lower right portion of the cabinet. The power panel shall be wired to provide the necessary filtered power to the load switches, flasher(s), and power bus assembly. The power components shall be equipped with a removable plastic front cover for technician protection. The design will allow a technician to access the main and auxiliary breakers without removing the protective front cover.
3.2. The power panel portion of the main panel shall include the following components:
    a. A minimum of a 40-amp main breaker for 12- or 16- position cabinets or a minimum of a 30 amp breaker for 4- or 8-position cabinets. This breaker shall supply power to the controller, MMU, signals, cabinet power supply and auxiliary panels. Breakers shall be at minimum, a thermal magnetic type, U.L. listed for HACR service, with a minimum of 10,000 amp interrupting capacity.
    b. A minimum of one (1) 15-amp auxiliary breaker. This breaker shall supply power to the fan, light and GFI utility outlet.
    c. An surge arrester typical for IDOT signal cabinets, meeting required voltage and current levels.
    d. A 50 amp, 125 VAC radio interference line filter.
    e. A normally-open, 75 amp, Solid State Signal buss relay.
    f. A minimum of one (1) 8-position neutral bus bar capable of connecting three #12 wires per position.
    g. A minimum of one (1) 6-position ground bus bar capable of connecting three #12 wires per position.
    h. A minimum of one (1) NEMA type 5-15R GFI utility outlet.

The cabinet shall be equipped with additional surge protection for the controller, malfunction management unit, and the video detection system. The surge protector shall be a Transtector – APC100BWN3 and shall be included in addition to an SHA-1250 IRS protector.

4. Power Bus Assembly

4.1. The power bus assembly shall be manufactured from 0.090", 5052-H32 aluminum. It shall provide filtered power for the controller, malfunction management unit, cabinet power supply, and all auxiliary equipment. It shall include the SDLC Bus connecting cables wired into a surface-mounted terminal block. As an alternate SDLC Bus connections may be made via an SDLC Hub Assembly.

4.2. The Power Bus Assembly shall house the following components:

- a. A minimum of three and a maximum of six power connectors.
- b. Two terminal strips to hardwire the power connections.
- c. SDLC terminal block with pre-wired cables or SDLC Hub Assembly

4.3. All cabinet equipment requiring filtered power to operate shall be connected to the power bus assembly by a 12-pin connector or hardwired directly to the supplied terminal blocks.

4.4. An SDLC Hub Assembly shall include a minimum of three and maximum of eight D-Subminiature Female 15 pin (DB15) connectors that are wired in series.

5. Auxiliary Cabinet Equipment

5.1. The cabinet shall be provided with a thermostatically controlled (adjustable between 55- 160 degrees Fahrenheit) ventilation fan in the top of the cabinet plenum. The fan plate shall be removable with the use of simple hand tools for serviceability. A minimum of one exhaust fan shall be provided. The fan shall be a ball bearing type fan and shall be capable of drawing a minimum of 100 cubic feet of air per minute. The Fan/Thermostat assembly shall be connected to the Power panel by means of a 4 position plug-in cable.

5.2. At minimum, a 40-watt incandescent refrigerator lamp and socket mounted on an aluminum bracket shall be mounted in the cabinet to sufficiently illuminate the field terminals. The lamp shall be wired to either a 15-amp ON/OFF toggle switch mounted on the power panel or to a door activated switch mounted near the top of the door.

5.2.1. Alternately, a 40-watt incandescent lamp mounted on a 14-inch flexible arm shall be included. The flexible arm shall be permanently mounted to the middle of the cabinet door. The lamp shall be wired to either a 15-amp ON/OFF toggle switch mounted on the power panel or to a door activated switch mounted near the top of the door.

5.2.2. Alternately, a fluorescent lighting fixture shall be mounted on the inside top of the cabinet near the front edge. The fixture shall be rated to accommodate at minimum a F15T8 lamp operated from a normal power factor UL or ETL listed ballast. The lamp shall be wired to either a 15-amp ON/OFF toggle switch mounted on the power panel or to a door activated switch mounted near the top of the door.

5.2.3. Alternately, an LED cabinet lighting system may be used to illuminate the internal structure of the cabinet assembly. The LED cabinet lighting shall be Luxem Bright LED modules Model#772-W0013 and approved power supply.

5.3. A resealable print pouch shall be mounted to the door of the cabinet. The pouch shall be of sufficient size to accommodate one complete set of folded cabinet prints.

5.4. A minimum of two sets of complete and accurate cabinet drawings shall be supplied with each cabinet.

6. Cabinet Test Switches and Police Panel

6.1. A test switch panel shall be mounted on the inside of the main door. The test switch panel shall provide as a minimum the following:

a. SIGNALS ON/OFF SWITCH - In the OFF position, power shall be removed from signal heads in the intersection. The controller shall continue to operate. When in the OFF position, the MMU shall not conflict or require reset.

b. AUTO/FLASH SWITCH - When in the flash position, power shall be maintained to the controller and the intersection shall be placed in flash. The controller shall not be stop timed when in flash. Wired according to NEMA-TS2-2003 the MMU forces the controller to initiate the start-up sequence when existing flash.

c. STOP TIME SWITCH - When applied, the controller shall be stop timed in the current interval.

d. CONTROL EQUIPMENT POWER ON/OFF - This switch shall control the controller, MMU, and cabinet power supply AC power.

Momentary test push buttons for all vehicle and pedestrian inputs to the controller are not required. The TS2 controller to be provided with the cabinet assembly shall provide vehicular and pedestrian call inputs from its keyboard while in the standard status display.

The police door switch panel shall contain the following:

a. SIGNALS ON/OFF SWITCH - In the OFF position, power shall be removed from signal heads in the intersection. The controller shall continue to operate. When in the OFF position, the MMU shall not conflict or require reset.

b. AUTO/FLASH SWITCH – When in the flash position, power shall be maintained to the controller and the intersection shall be placed in flash. The controller shall be stop timed when in flash. Wired according to NEMA-TS2-1998 the MMU forces the controller to initiate the start-up sequence when exiting flash.

c. AUTO/MANUAL SWITCH - Cabinet wiring shall include provisions for an AUTO/MANUAL switch and a momentary push button or hand cord. The AUTO/MANUAL switch and push button or hand cord shall not be provided unless it is called for in the CUSTOMER SPECIFICATION.

All toggle type switches shall be heavy duty and rated 15 amps minimum. Single- or double-pole switches may be provided, as required.

Any exposed terminals or switch solder points shall be covered with a non-flexible shield to prevent accidental contact.

All switch functions must be permanently and clearly labeled.

All wire routed to the police door-in-door and test switch push button panel shall be adequately protected against damage from repetitive opening and closing of the main door.

All test switch panel wiring shall be connected to the main panel via a 50-pin connector.

Wiring from the main panel to the test switch panel shall be connected to the switch panel via a 30-pin connector.

7. Controller Telemetry Interface Panel

A telemetry interface harness and interface panel shall be supplied with each cabinet assembly when specified in the special provisions.

The harness shall be a minimum of 6 feet long and shall consist of two twisted shielded pairs, 22 AWG wire with drain wire in an overall jacket, terminated to a 9-pin "D" type connector at one end. The pin out of the 9 pin connector shall be in exact accordance with the NEMA TS2 Standard. The opposite end of the harness shall be terminated on a 10- position EDCO PCB-1B or exact equal lightning protection socket base.

All terminal block designations and peripheral board-mounted components shall be labeled as to their number and function and shall correspond to the cabinet wiring diagrams.

The following signals shall be accessible from the telemetry interface panel:

- Local controller command lines 1 & 2
- Local controller read back lines 1 & 2
- Master controller command lines 1 & 2
- Master controller read back lines 1 & 2
- Earth grounds

A socket mounted communication line transient protection device shall be supplied with the telemetry interface panel. The transient protection device shall be wired in series with the telemetry communication circuit.

Communication line impedance shall be matched to the transmitter output impedance to minimize noise on the communication lines. The panel shall allow connection of a 620 ohm resistor across the command and read ¬back lines, where necessary.

Auxiliary Devices

8.1 Load Switches

8.1.1 Load switches shall be solid state and shall conform to the requirements of Section 5.2 of the NEMA TS2 Standard.

8.1.2 Signal load switches shall have a minimum rating of 10 amperes at 120 VAC for an incandescent lamp load.

8.1.3 The front of the load switch shall be provided with three indicators to show the input signal from the controller to the load switch. Load switches shall be dedicated per phase. The use of load switches for other partial phases is not acceptable.

8.1.4 The full complement of load switches shall be supplied with each cabinet to allow for maximum phase utilization for which the cabinet is designed.

8.2 Flashers

8.2.1 The flasher shall be solid state and shall conform to the requirements of section

8.2.2 6.3 of the NEMA TS2 Standard.

8.2.3 Flashing of field circuits for the purpose of intersection flash shall be accomplished by a separate flasher.

8.2.4 The flasher shall be rated at 15 amperes, double pole with a nominal flash rate of 60 FPM.

8.3 Flash Transfer Relays

8.3.1 All flash transfer relays shall meet the requirements of Section 5.4 of the NEMA TS2 Standard.

8.3.2 The coil of the flash transfer relay must be de-energized for flash operation.

8.3.3 The full complement of relays shall be supplied with each cabinet to allow for maximum phase utilization for which the cabinet is designed.

8.4 Malfunction Management Units (MMU)

8.4.1 Each cabinet assembly shall be supplied with one MMU as defined by the requirements of Section 3 of the NEMA TS2 Standard.

8.4.2 Malfunction Management Units shall be a Type 16, IP addressable, and able to support flashing yellow arrow operations.

8.5 Bus Interface Units (BIU)

8.5.1 All BIUs shall meet the requirements of Section 8 of the NEMA TS2 Standard.

8.5.2 The full complement of compatible BUIs for applicable hardware elements shall be supplied with each cabinet to allow for maximum phase and function utilization for which the cabinet is designed.

8.5.3 Each Bus Interface Unit shall include power on, transmit and valid data indicators. All indicators shall be LEDs.

8.6 Cabinet Power Supply

8.6.1 The cabinet power supply shall meet the requirements of Section 4.3.5 of the NEMA TS2 Standard.

8.6.2 The cabinet power supply shall provide LED indicators for the line frequency, 12 VDC, 12 VAC, and 24 VDC outputs.

8.6.3 The cabinet power supply shall provide (on the front panel) jack plugs for access to the +24 VDC for test purposes.

8.6.4 One cabinet power supply shall be supplied with each cabinet assembly and shall be wired directly to the Power Bus Assembly via a 12-pin connector.

8. Testing and Warranty Testing

9.1 Each controller and cabinet assembly shall be tested as a complete entity under signal load for a minimum of 48 hours.
9.2 Each assembly shall be delivered with a signed document detailing the cabinet final tests performed.
9.3 The cabinet shall be assembled and tested by the controller manufacturer or authorized local distributor to ensure proper component integration and operation. Warranty
9.4 The controller and Malfunction Management Unit shall be warranted by the manufacturer against mechanical and electrical defects for a period of two years from date of shipment. The manufacturer's warranty shall be supplied in writing with each cabinet and controller. Second party extended warranties are not acceptable.
9.5 The cabinet assembly and all other components shall be warranted for a period of one year from date of shipment.
9.6 Any defects shall be corrected by the manufacturer or supplier at no cost to the owner.

Method of Measurement. This work will not be measured separately but will be measured by other Bid Items.

Basis of Payment. This work will not be paid for separately, but included in the contract unit price per each for FULL-ACTUATED CONTROLLER AND TYPE IV CABINET.

INTERSECTION MONITOR UNIT
REMOVE EXISTING INTERSECTION MONITOR UNIT

Description. All signal cabinets within the project limits shall have a flashing yellow arrow compatible monitor installed with an internal RJ-45 plug for 10/100 Ethernet communication that has capability to be connected to IDOT or City of Edwardsville computer network through Ethernet switches in the future.

This work shall be in conformance with Sections 857 and 895 of the Standard Specifications, and consist of removing the existing traffic signal controller from existing cabinets, and replacing in with a new full actuated controller within the existing cabinet.

This work will take place at the following locations:
1. Troy Road and Junction Drive (Glen Carbon / IDOT maintained traffic signal)
2. Troy Road and IL 159/Illini Drive (Edwardsville)
3. Troy Road and Center Grove Road (Edwardsville)
4. Troy Road and Governors Parkway (Edwardsville)
5. Troy Road and Edwardsville Crossing Drive (Edwardsville)
6. Troy Road and Harvard Drive (Edwardsville)

Add the following to Article 895.05 of the Standard Specifications:

The traffic signal equipment which is to be removed shall become the property of the respective governing Agency. The Contractor shall be responsible for setting up the time and location for turning over equipment to the respective governing Agency. The Contractor is responsible for delivering the equipment to the respective governing Agency, including unloading and placing the equipment into Agency storage.

Performance Requirements.

1. **Inputs**. Signal cabinets, either new or existing, will be TS2 Type 1 setup and the monitor is to be a Malfunction Management Unit (MMU) compatible with SDLC connections.

2. **Status and Event Logging**. Monitor shall be able to remotely communicate, at a minimum, active status, current faults, and event logs for at least the previous 7 days.

3. **Flashing Yellow Arrow**. Monitor shall be capable of operating a flashing yellow arrow in the future for left turns by utilizing unused yellow channels on the pedestrian load switches or via dedicated overlap load switches.

4. **Software and Configuration**. Software needed to communicate to any network-enabled monitor shall be provided to the City and IDOT for an unlimited number of users.

Construction Requirements. Construction requirements shall conform to section 863 of the standard specifications.

1. **Setup and Training.** A minimum of one half-day of training shall be provided in the operation, setup communication and maintenance of the monitors to both IDOT and City of Edwardsville staff.

2. **Acceptance Testing.** Contractor shall program an IP address into each MMU and test connectivity from another network switch along the corridor to confirm remote capabilities. No direct payment will be made for this testing.

Basis of Payment. Payment will be considered full compensation for all labor, equipment, and material to complete the described work. Existing MMUs removed from existing signal cabinets shall be paid for at the contract unit price per each for REMOVE EXISTING INTERSECTION MONITOR UNIT. New MMUs installed in existing signal cabinets shall be paid for at the contract unit price per each for INTERSECTION MONITOR UNIT. New MMUs installed in new signal cabinets will not be paid for separately, but included in the contract unit price per each for FULL-ACTUATED CONTROLLER AND TYPE IV CABINET.

CONCRETE FOUNDATION, TYPE A

Description. This work shall consist of the construction of a Concrete Foundation, Type A, for the traffic signal posts and pedestrian push-button posts at various locations within the project area. This work shall be performed in accordance with the applicable positions of Section 878 of the Standard Specifications and the details contained within the plans.

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

Basis of Payment. Payment will be considered full compensation for all labor, equipment, and material to complete the described work. This work shall be paid for at the contract unit price per foot for CONCRETE FOUNDATION, TYPE A.

REMOVE EXISTING SERVICE INSTALLATION
ELECTRIC SERVICE INSTALLATION (SPECIAL)

Description. This work shall be in conformance with Sections 863 and 895 of the Standard Specifications, and consist of removing the existing electrical services at the location shown on the Plans, disposing of the material, and replacing in with a new electrical service as described below.

At the location shown on the Plans, the signal controller cabinet shall be powered by meter and disconnect cabinets installed on the side of the signal cabinet or at a location approved by the Engineer.

This work will take place at the following location:

1. Troy Road and Montclaire Avenue (Edwardsville)

Add the following to Article 895.05 of the Standard Specifications:

This work shall be in conformance with Section 895 of the Standard Specifications, and consist of removing the existing electrical service at the location shown on the Plans and disposing of the material as directed by the Engineer. The existing service installation material to be removed is to remain the property of the Contractor. The Contractor may use their discretion to remove the material assembled or disassembled.

Construction Requirements. Construction requirements shall conform to Section 863 of the Standard Specifications. Where cables are placed between cabinets, the Contractor shall install a rubber grommet or other approved material to limit potential for cuts or abrasions to conductor coatings. The seam between the signal cabinet and meter/disconnect cabinets shall be made waterproof with lifetime silicon sealant.

Method of Measurement. Removal of the existing traffic signal cabinet, controller, concrete foundation, and cabling will be paid for separately. Furnishing and mounting a power supply on the signal cabinet will be measured for payment per each.

Basis of Payment: Payment will be considered full compensation for all labor, equipment, and material to complete the described work. Payment for the following bid items will be made as follows:

Item No.	Description	Type
89500120	REMOVE EXISTING SERVICE INSTALLATION	EACH
X8040102	ELECTRIC SERVICE INSTALLATION, SPECIAL	EACH

FIBER OPTIC SPLICE ENCLOSURE
TERMINATE FIBER IN CABINET
FIBER OPTIC CABLE 48 FIBERS, SINGLE MODE
FIBER OPTIC FUSION SPLICE

Description. This work shall consist of installing, splicing and terminating fiber optic cables. All work and materials shall comply with Section 871 of standard specs as modified by the following.

Material Requirements.

1. **Cable**. Fiber optic cable shall be loose tube, single mode dielectric cable. The cable shall be listed in the latest edition of the Rural Utilities Service (RUS) *List of Materials Acceptable for Use on Telecommunications Systems of RUS Borrowers*, category oc-d-F, and shall have a short-term tensile rating of at least 600 lbs. The cable sheath shall have length markings in feet and shall indicate that the unit of measure is feet. The cable shall have an operating temperature range of -40º C to 70º C.

   1.1 All fibers shall be suitable for transmission using both 1310 nm and 1550 nm wavelengths. Attenuation shall not exceed 0.35 dB/km and 0.25 dB/km for 1310 nm and 1550 nm signals, respectively.

   1.2 The cables shall be constructed with 12 fibers per tube, 4 tubes per cable (48 SMFO).

2. **Connector.** Connectors shall be ST compatible, with ceramic ferrules. They shall be suitable for use in traffic cabinets and shall be designed for single mode fibers.

3. **Pigtail.** Pigtails shall be factory-made, buffered, and strengthened with aramid yarn to reduce the possibility that accidental mishandling will damage the fiber or connection. Pigtails shall be yellow. They must use the type of connector specified in Sec 2.3 of this provision. Each must contain one fiber. Length shall suffice to provide two feet of slack after installation.

4. **Jumper.** Jumpers shall meet the requirements for pigtails, but shall have a connector on each end. The second connector shall be as specified in Sec 2.3 of this provision except where a different connector is required for compatibility with the equipment to which the jumper connects. Length shall suffice to provide approximately five feet of slack after installation. Jumper cables contain a pair of fibers.

5. **Splice Tray.** Splice trays shall be 11.7” long, 3.9” wide, and 0.2” tall. They shall be aluminum, designed for outdoor use. Each shall accommodate 24 fusion splices. The trays shall have a black powder coat finish. The trays shall have both perforations for cable ties and crimpable metal tabs for buffer tube strain relief. No direct payment will be made for splice trays and will be subsidiary to cabinet and fiber bid items.

6. **Wall-Mounted Interconnect Center**. The enclosure shall be designed for wall or panel mounting and occupy no more than 350 square inches of wall space. It shall be made of powder coated aluminum and have a gasketed, hinged door. It shall have provisions for cable strain relief and for connector labeling. It shall have a patch panel with at least 24 positions compatible with the connectors specified in Section 2.3 of this provision. It shall accommodate at least six splice trays as specified in Section 2.6 of this provision and shall be equipped with enough trays for all the splices made in the interconnect center

7. **Underground Splice Enclosure.** Splice enclosures, if needed, shall provide capacity for 72 fiber splices. Enclosure shall be: suitable for outdoor applications with a temperature range of -30 to 60 degrees Celsius, protect splices from moisture and damage, non-reactive and not support galvanic cell action, waterproof, re-enterable, sealed with a gasket, permit selective splicing to allow one or more fiber strands to be cut and spliced without disrupting other fibers, equipped with a basket to accommodate the slack from all fibers routed into the enclosure, capable of holding splice trays from various manufacturers, input/output capacity of four 18 mm cables, equipped with a termination block to terminate the central strength members of the fiber optic cables.

    7.1 Splice trays shall be: compatible with fiber splices and splice enclosure, equipped with polyethylene tubes to protect exposed individual fibers within the enclosure, stackable within the splice enclosure. Vinyl markers shall be supplied to identify each fiber to be spliced. Each splice shall be individually mounted and mechanically protected on the splice tray. Loose tube buffers shall be secured with a tube guide or channel snap. Slack fiber shall be placed in an oval shape along an inside wall of the tray.

8. **Certifications.** The fiber optic cable shall be factory certified to meet the requirements in this specification. In addition, the manufacturer shall certify that the fiber optic cable has a life expectancy of 20 years.

9. **Documentation.** Provide City of Edwardsville and/or IDOT with a copy of the final plans in Visio and/or Microstation formats and any relevant notes that would aid in the understanding of the fiber configuration.

Construction Requirements. Construction requirements shall conform to section 863 of the standard specifications.

1. **Cable Installation**. Prior to installation, perform such tests as indicated in Sec 3.5 of this provision to confirm that the cable is in good condition and complies with the specifications. Any defects found after installation will be deemed the fault of the contractor.

    1.1 Install the cable such that the optical and mechanical characteristics of the fiber are not degraded. Do not violate the minimum bend radius or the maximum tension, both during and after installation.

1.2 Before any cable installation is performed, provide the Engineer with digital and hard copies of the cable manufacturer's recommended maximum pulling tensions for each cable size. These pulling tensions shall be specified for pulling from the cable's outer jacket. Also, provide a list of the minimum allowable cable bending radius and the cable manufacturer's approved pulling lubricants. Only those lubricants approved by the cable manufacturer will be permitted.

1.3 If the cable is pulled by mechanical means, use a clutch device to ensure the allowable pulling tension is not exceeded. Also, attach a strain gauge to the pulling line at the cable exit location, and at a sufficient distance from the take-up device, such that the strain gauge can be read throughout the entire cable pulling operation.

1.4 Do not leave the let-off reel unattended during a pull, in order to minimize the chance of applying excess force, center pull, or back feeding.

1.5 Use an approved lubricant, in the amount recommended by the cable manufacturer, to facilitate pulling the cable. After the cable has been installed, wipe the exposed cable in a pull box, junction box, or field terminal cabinet clean of cable lubricant with a cloth before leaving the pull box, junction box, or cabinet.

1.6 In every intermediate pull box, store 50 feet of slack fiber optic cable for every cable that passes through the pull box. Store slack cable neatly on the walls of the pull box using racking hardware acceptable to the Engineer. Additional slack cable that is included in the pay quantity includes 100 feet at the splice point within the adjacent pull box.

1.7 Seal the fiber optic cable ends to prevent the escape of the filling compound and the entry of water.

1.8 Label every cable immediately upon installation. Label the cables at every point of access, including junction boxes, pull boxes, and termination points. Use self-laminating vinyl labels at least 1.5" wide and long enough that the translucent portion of the label completely covers the white area bearing the legend. The vinyl shall have a layer of pressure sensitive acrylic adhesive. The labels shall resist oil, water, and solvents and shall be self-extinguishing. The legend shall be machine printed in letters at least 3/32" high. Consult with the Engineer concerning the desired method of identifying each cable. Labeling cables shall be included in the cost of installing the cable, and will not be paid separately.

2. **Splicing**. Splice all optical fibers, including spares, to provide continuous runs where indicated in the plans. Splices shall be allowed only in equipment cabinets and splice enclosures except where shown on the plans.

2.1 Make all splices using a fusion splicer that automatically positions the fibers using either the Light Injection and Detection (LID) system or the High-resolution Direct Core Mounting (HDCM) system. Provide all equipment and consumable supplies.

2.2 Secure each spliced fiber in a protective groove. Completely re-coat bare fibers with a protective room temperature vulcanizing (RTV) coating, gel or similar substance, prior to insertion in the groove, so as to protect the fiber from scoring, dirt or microbending.

2.3 Prior to splicing to a fiber installed by others, measure and record the optical loss over that fiber. See Sec 3.5 of this provision.

2.4 Use a different splice tray for each buffer tube color. If an enclosure contains multiple buffer tubes of the same color, but none of the fibers in one of the tubes are spliced to fibers in other tubes of the same color, use a separate splice tray for that tube.

3. Terminations. Terminate fibers by splicing them to factory-made pigtails. Cap all connectors that are not connected to a mating connector. If the existing termination panel does not have the capacity to conform to the project documents and specifications, it is the contractor's responsibility to replace the termination panel at no additional cost to the project. Pigtails are subsidiary to this bid item.

4. Jumper Management. Use spiral wrap to guide and protect bundles of jumpers between the patch panel and equipment. Affix the spiral wrap to the wall of the field terminal cabinet or vertical member of the rack. Label the jumpers at each end, numbering them sequentially.

5. Acceptance Testing.

5.1 General. Test the fiber after installation, including all splicing and terminations. For each fiber optic link terminated at the field terminal cabinet patch panels, determine whether the optical loss is within the limits permitted by these specifications. A link is a continuous segment of fiber between one connector (or unterminated end) and another connector (or unterminated end).

5.2 Test Procedure. For each fiber link, follow this procedure:

5.2.1 Calculate the maximum allowable losses for the contractor installed fiber link, both at 1310 nm and at 1550 nm. Use the following formula:

Maximum link loss = (Fiber length in km) x (0.35 for 1310 nm and 0.25 for 1550 nm)
+ (Number of fusion splices) x (0.05)
+ (Number of mechanical splices [for temp. connection]) x (0.3)
+ (Number of connections) x (0.5)

Provide this calculation to the engineer along with the test results.

5.2.2 Provide the engineer documentation that the optical time domain reflectometer to be used in testing has been calibrated and is working properly.

5.2.3 Use an optical time domain reflectometer to assess the losses along the contractor furnished and installed fiber paths. Record the result at both 1310 nm and 1550 nm. Arrange for the engineer or his representative to witness these tests.

5.2.4 Use an optical time domain reflectometer and other test equipment to troubleshoot the link. Take whatever corrective action is required, including cable replacement, to achieve a loss less than the calculated maximum.

5.3 Test Result Documentation. Prepare a diagram showing all of the links tested in this project. For the portions installed in this project, show the field terminal cabinets, splices, and pigtails. On each line representing a link, show the maximum allowable loss and the actual loss. The actual loss shall be the one measured after all corrective actions have been taken. Submit this diagram to the Engineer, along with the calculations for the maximum allowable loss. Submit the diagrams and calculations in an electronic format acceptable to the Engineer.

Basis of Payment. Measurement and payment for items covered by this specification include the documentation and acceptance testing, in addition to all materials and equipment necessary for a fully operational system.

Payment for the following bid items will be made as follows:

Item No.	Description	Type
X1400158	FIBER OPTIC SPLICE ENCLOSURE	EACH
X1400217	TERMINATE FIBER IN CABINET	EACH
X8710030	FIBER OPTIC CABLE 48 FIBERS, SINGLE MODE	LF
X8710071	FIBER OPTIC FUSION SPLICE	EACH

LAYER II (DATALINK) SWITCH

Description. This work shall consist of providing a hardened Ethernet Switch, including the applicable power supply. Two 10km single-mode fiber optic modules shall be supplied with each Ethernet switch.

Material Requirements.

1. The Contractor shall furnish the following equipment, coordinate programming with the Engineer, install in applicable traffic signal cabinets, and test for proper operation. There are no support requirements associated with this pay item.

2. The Ethernet Switch shall meet the following material specifications:

2.1 Overall switch station capacity and flexibility: Managed Gigabit Ethernet switch with 7 10/100BaseT(X) ports, and 3 10/100/1000BaseT(X) or 100/1000BaseSFP combo ports, with -40 to 75°C operating temperature. In addition, the switch shall include a SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, with -40 to 85°C operating temperature.

2.2 Cabling options: The switch shall be able to utilize a variety of connecting interfaces including 10/100Base (T)X, 10/100/1000Base(T)X, and 1000BaseSX/LX/LHX/ZX (LC connector).

2.3 Port configuration options: Port configurations shall be accessible via a standard web browser without requiring special vendor software. Port configuration changes shall be possible by personnel without special IT training. The configuration can be done via a console UI, telnet connection or command line interface. All T(X) ports shall provide cable autocross capability.

3. The Ethernet Switch shall be compatible with following network and software requirements:

3.1 Network and Software: The Ethernet switches shall be IEEE802.3/802.3u/802.3ab/802.3z/802.3x/802.1D-2004/802.1w/802.1s/802.1Q/802.1p/802.1X/802.3ad compliant. The switch shall support the following standards and software interfaces:

- 3.1.1 Redundant fast/Gigabit Ethernet ring capability
- 3.1.2 IGMP Snooping and GMRP for filtering multicast traffic from industrial Ethernet protocols
- 3.1.3 Supports IEEE 802.1Q VLAN and GVRP protocol to ease network planning
- 3.1.4 Supports QoS-IEEE 802.1p/1Q and TOS/DiffServ to increase determinism
- 3.1.5 Supports 802.3ad, LACP for optimum bandwidth utilization
- 3.1.6 Supports TACACS+, SNMPv3, IEEE 802.1X, HTTPS, and SSH to enhance network security
- 3.1.7 Support EtherNet/IP, PROFINET, and Modbus/TCP protocols for device management and monitoring
- 3.1.8 SNMPv1/v2c/v3 for different levels of network management security
- 3.1.9 Bandwidth management to prevent unpredictable network status
- 3.1.10 Lock port for authorized MAC address access only
- 3.1.11 Port mirroring for online debugging
- 3.1.12 Automatic warning by exception through e-mail, relay output
- 3.1.13 Digital inputs to integrate a sensor and alarm with an IP network
- 3.1.14 Automatic recovery of connected device IP addresses
- 3.1.15 Line-swap fast recovery

3.2 Port Trunking for Flexible Network Connection: Maximum of four trunk groups for all Gigabit ports with maximum of 8 trunk ports for each trunk group shall be available. The user shall be able to either choose the type of the trunk group to be “Static” or “LACP.”

3.3 IP Addressing Approach Options: IP addresses shall be set prior to implementing in the cabinet, using address scheming based on input from agency IT staff. The user shall have the capability to disable BootP or DHCP network based IP address changes. In addition, the switch shall support both a serial port and web page based manual (static) addressing approach.

3.4 Ethernet Packet Transfer Accuracy and Capacity: The switch shall be capable of forwarding valid Ethernet frames using the store and forward method or equivalent method and the address table shall have a maximum capacity of 8192 addresses.

3.5 Quality of Service Functions Enhance Determinism: The switches shall be able to read IEEE 802.1Q VLAN priority tags, and support a minimum of a low, normal, medium and high priority buffer. High priority messages shall be able to process before low priority messages. It also shall support QoS-IEEE 802. 1p/1Q and TOS/DiffServ.

3.6 SNMP Traps: The switches shall support sending SNMP messages to maximum 2 SNMP “Trap” server and The SNMP traps IP addresses shall be settable through a web browser interface.

3.7 Multicast Message Control for Filtering Multicast Traffic: The switches shall be able to support IEEE 802.1D-1998 GMRP (GARP Multicast Registration Protocol), and IGMP (Internet Group Management Protocol).

3.8 Port Access Control Enhances User Authentication: The switches shall support IEEE 802.1X and Static Port Lock for Port-Base Access Control.

3.9 Accessible IP Settings: It shall allow the user to add or remove “Legal" remote host IP addresses to prevent unauthorized access. Access to switch shall be controlled by IP address. That is, if a host's IP address is in the accessible IP table, then the host shall be allowed access to the switch.

3.10 Additional network and software requirements shall be met:

3.10.1 IEEE 802.1X, HTTPS, and SSH to Enhance Network Security
3.10.2 Bandwidth Management Prevents Unpredictable Network Status
3.10.3 Port mirroring for Online Debugging
3.10.4 Automatic Warning by Exception through Email and Relay Output
3.10.5 Digital Inputs to Integrate Sensors and Alarms with IP Networks
3.10.6 Automatic Recovery of Connected Device’s IP Addresses
3.10.7 Line-swap Fast Recovery
3.10.8 Support EDS-SNMP OPC Server Pro
3.10.9 Software based IEEE 1588 PTP (Precision Time Protocol) for precise time synchronization of networks
3.10.10 DHCP Option 82 for IP address assignment with different policies
3.10.11 Modbus/TCP / EtherNet/IP / PROFINET industrial Ethernet protocols supported
3.10.12 Supports LLDP (Link Layer Discovery Protocol)
3.10.13 Turbo Ring TM and Turbo Chain TM < 20ms recovery time for fast Ethernet ports
3.10.14 and < 50 ms recovery time for Gigabit Ethernet ports at full load) and STP/RSTP (IEEE 802.1w/D)+

4. The Ethernet Switch shall meet the following general installation requirements:

4.1 Mounting: The switch shall be DIN-Rail or wall mountable

4.2 Power supply: Low voltage ranges: 12/24/48 VDC (9.6-60 VDC). In addition, a provision shall be made such that the loss of a power supply may be user configurable to trigger a hardware (i.e. relay contact), SNMP, e-mail and web page alarms.

4.3 Environmental specifications: Temperature & humidity - The switch shall have operating temperature ranges of -10 to 60°C or -40 to 75°C. In addition, the switch shall be rated to withstand a maximum continuous operating humidity of 95% without condensation.

4.4 Electronical Noise Immunity: The switch will conform to the IEC61000-4-2 to 4-8 series of noise specifications as specified below:

4.4.1 IEC 61000-4-2Electrostatic Discharge: Criterion A
4.4.2 IEC 61000-4-3Radiated Noise Immunity: Criterion A
4.4.3 IEC 61000-4-4Fast Transient (Burst) Withstand: Criterion A
4.4.4 IEC 61000-4-5Surge Voltage: Criterion A
4.4.5 IEC 61000-4-6Conducted Noise Interference: Criterion A
4.4.6 IEC 61000-4-8Electromagnetic Field withstand: Criterion A
4.4.7 IEC 61000-4-12
4.4.8 IEC 61000-4-29

4.5 Shock & Vibration: The operating shock rating shall conform to IEC60068-2-27 and withstand a 15 g, 11 ms duration, and 18 shocks. In addition, the operating vibration spec shall conform to IEC60068-2-6 (Criterion 3) at 1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min.

4.6 Switch shall be compliant with IEC 62443 4-2.

5. The Ethernet Switch shall meet the following hardware based diagnostics and user interfaces requirements:

5.1 Alarm contact: The switch shall contain an alarm contact that can be configured via standard web browser to annunciate the drop out of either or both power supply inputs and/or to annunciate the active link status of any combination of ports. A Fault LED will be provided to indicate the status of the alarm contact.

5.2 LED Indications

5.3 Diagnostic display for internal switch status

5.4 Serial Port: The switch shall include a USB serial port that can be accessed by computers with hyper terminal or equivalent capability. The serial console connection manner shall require a short USB cable applied to connect the switch to a PC’s USB port.

6. The Ethernet switch shall meet the following security requirements:

6.1 Port Disable: unused ports shall be able to be disabled to prevent unauthorized access

6.2 It shall support IEEE 802.1X and SSL to enhance network security.

6.3 Switch configuration password protection

6.4 https/SSL

7. The Ethernet switch shall have following communication redundancy:

7.1 The switch shall be able to detect and compensate for the failure of another switch, cable disruption or hardware failure of one or more ports.

7.2 IEEE standards based redundancy, including IEEE 802.1D/W spanning tree Turbo Ring: Gigabit Ethernet redundant ring capability (Turbo Ring V2: recovery time <20ms for fast Ethernet ports; < 50 ms for Gigabit Ethernet ports). Ring coupling function to integrate different Turbo Ring for distributed application

7.3 Turbo Chain function for a multiple-ring architecture (recovery time <20ms for fast Ethernet ports; <50 ms for Gigabit Ethernet ports)

8. The Ethernet switch shall be compatible with following software suite that assists with installation, operation, maintenance, and diagnostics:

8.1 The switch must be compliant with a mass configuration tool:

8.1.1 The tool must contain a security wizard for convenient setup of security-related parameters.
8.1.2 The tool must allow for topology analysis to eliminate manual setting errors
8.1.3 The tool must contain a configuration overview for efficient management

8.2 The switch shall be compliant with network management software (NMS).

8.2.1 The NMS must allow for auto-discovery of network devices and physical connections.
8.2.2 The NMS must allow for event playback for quick troubleshooting
8.2.3 The NMS must allow for color-coded VLAN/IGMP groups and other visualized network data.
8.2.4 The NMS must allow for a security view for the security status of network devices.

8.2.5 The NMS must support a mobile app for remote monitoring and notification.

8.3 The switch must be compliant with a stand-alone data collection tool to take network snapshots for quick troubleshooting.

8.3.1 The collection tool must allow for the ability to compare network and device data and then highlight the differences.

Construction Requirements. The Contractor shall coordinate with the agency IT representatives and the Engineer to determine appropriate IP addresses and other programming details for each Ethernet switch. Once programmed by the Contractor, the units shall be installed in the cabinets and connected to electrical power source. Fiber optic jumpers matching the ports on the switch and patch panel shall be connected as shown on the plans, in addition to Ethernet cables between the switch and applicable cabinet hardware.

Basis of Payment. This work will be paid for at the contract unit price per each for LAYER II (DATALINK) SWITCH which price shall be payment in full for all labor, materials, and equipment required to provide the equipment specified, install in the field, and test for full operation.

REMOVE EXISTING PEDESTRIAN PUSH BUTTON
REMOVE EXISTING TRAFFIC CONTROLLER AND CABINET
REMOVE EXISTING TRAFFIC SIGNAL POST

Description. This work shall be in conformance with Section 895 of the Standard Specifications, and consist of removing existing pedestrian push buttons; removing existing traffic signal controllers with respective cabinets; or removing existing traffic signal posts where shown on the plans

Add the following to Article 895.05 of the Standard Specifications:

The traffic signal equipment which is to be removed shall become the property of the respective governing Agency. The Contractor shall be responsible for setting up the time and location for turning over equipment to the respective governing Agency. The Contractor is responsible for delivering the equipment to the respective governing Agency, including unloading and placing the equipment into Agency storage.

Method of Measurement. Removal of the existing pedestrian push buttons; existing controllers with respective cabinets; and existing traffic signal post will be measured for payment per each. Removal of any existing foundation or cabling will be paid for separately.

Basis of Payment: Payment will be considered full compensation for all labor, equipment, and material to complete the described work. Payment for the following bid items will be made as follows:

Item No.	Description	Type
X1400423	REMOVE EXISTING PEDESTRIAN PUSH BUTTON	EACH
X8950105	REMOVE EXISTING TRAFFIC CONTROLLER AND CABINET	EACH
X8950301	REMOVE EXISTING TRAFFIC SIGNAL POST	EACH

GPS CLOCK SYNC UNIT

Description. Where indicated in the plans, the signal controller cabinets shall be equipped with an industrial-grade, GPS clock capable of supporting communications between traffic signals controllers and a designated network time protocol (NTP) server.

Material Requirements. The GPS clock shall meet the following minimum specifications:

1. Universal compatibility with major traffic signal controller brands.

2. Allow for coordination and interoperability between multiple traffic signal controller brands.

3. Programming functionality to configure: hour, minute, time zone, Daylight Savings Time (DST), frequency of reset, and rising or falling edge reset.

   3.1 Allow for automatic adjustment to DST.

   3.2 Allow for uninterrupted functionality during programming.

4. Solid state unit with no moving parts.

5. Approximate dimensions: 4” H x 5.5” W x 1.25” D

6. Power Requirements: 8-40 volts DC, 100 mA

7. Control: Isolated Open Collector Output

8. Temperature Range: -34º C to 74º C

9. Warranty: 2 years from date of arrival of shipment

Construction Requirements. The Contractor shall install the GPS Unit per the following requirements:

1. Install the cabled antenna unit on the top or side of the proposed signal cabinet, with minimally unobstructed upward view. The opening in the cabinet to allow for cable access shall be water tight with lifetime silicone sealant or other approved material.

2. Program the GPS unit and test for proper operation. The NTP server shall sync the internal clock of the connected signal controller on a once per day basis. The NTP server referenced by the unit shall be consistent for each cabinet installed on the project.

3. Furnish and install all cabling, connectors, sealant, mounting hardware, and other materials necessary for a fully functional GPS unit.

Method of Measurement. Furnishing, mounting, and programming the GPS unit will be measured for payment per each.

Basis of Payment. Payment will be considered full compensation for all labor, equipment and material to complete the described work. This work shall be paid for at the contract unit price per each for GPS CLOCK SYNC UNIT.

TRAFFIC CONTROL AND PROTECTION (SPECIAL)

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

Special attention is called to Articles 107.09 and 107.14 of the Standard Specifications for Road and Bridge Construction and the following traffic control: (1) Highway Standards; (2) Supplemental Specifications and Recurring Special Provisions; (3) BDE Special Provisions (4) Local Roads Special Provisions; and (5) Contract Special Provisions which are included in this contract:

1. Highway Standards:
   701001, 701006, 701011, 701501, 701602, 701701, 701801, 701901
2. Supplemental Specifications and Recurring Special Provisions:
   N/A
3. BDE Special Provisions:
   Work Zone Traffic Control Devices

4. Local Roads Special Provisions:
   Flaggers in Work Zones
5. Contract Special Provisions:
   Traffic Control and Protection (SPECIAL)

Construction Requirements. Traffic control standards shall be applied as required according to the work being performed.

Excavations over 1 ft. in depth shall not be left open overnight. Steel plating, or an alternate method approved by the Engineer shall be utilized to protect excavations when work is not actively being performed. Lane closures shall be limited to daylight hours while work is actively being performed. Two-way traffic shall be restored at the end of the work day.

Basis of Payment. All traffic control including signs, barricades, flaggers, drums, temporary access, removal of temporary materials, etc. that are necessary to complete the project, including those required for the various traffic control standards and traffic control surveillance, shall be paid for at the Contract lump sum unit price per for TRAFFIC CONTROL AND PROTECTION (SPECIAL). This work shall include furnishing, placing, maintaining, moving, and removal of all traffic control devices and signs required as shown on the traffic control and protection sheet and/or as described herein.

All required work zone traffic control surveillance activities conducted by the Contractor shall be paid for separately, and included in the price per calendar day for TRAFFIC CONTROL SURVEILLANCE.

FULL ACTUATED CONTROLLER IN EXISTING CABINET
REMOVE EXISTING CONTROLLER

Description. This work shall be in conformance with Sections 857 and 895 of the Standard Specifications, and consist of removing the existing traffic signal controller from existing cabinets, and replacing in with a new full actuated controller within the existing cabinet.

This work will take place at the following locations:

2. Troy Road and Junction Drive (Glen Carbon / IDOT maintained traffic signal)
3. Troy Road and IL 159/Illini Drive (Edwardsville)
4. Troy Road and Center Grove Road (Edwardsville)
5. Troy Road and Governors Parkway (Edwardsville)
6. Troy Road and Edwardsville Crossing Drive (Edwardsville)
7. Troy Road and Harvard Drive (Edwardsville)

Add the following to Article 895.05 of the Standard Specifications:

The traffic signal equipment which is to be removed shall become the property of the respective governing Agency. The Contractor shall be responsible for setting up the time and location for turning over equipment to the respective governing Agency. The Contractor is responsible for delivering the equipment to the respective governing Agency, including unloading and placing the equipment into Agency storage.

Method of Measurement. Removal of the existing traffic signal controller and installation of new traffic signal controller within the existing cabinet will be measured for payment per each.

Basis of Payment: Payment will be considered full compensation for all labor, equipment, and material to complete the described work. Payment for the following bid items will be made as follows:

Item No.	Description	Type
X8570215	FULL-ACTUATED CONTROLLER IN EXISTING CABINET	EACH
X8950060	REMOVE EXISTING CONTROLLER	EACH

REMOVE EXISTING SIGNAL HEAD
REMOVE EXISTING PEDESTRIAN SIGNAL HEAD

Description. This work shall be in conformance with Section 895 of the Standard Specifications, and consist of removing the existing traffic signal and pedestrian signal heads at locations shown on the Plans and disposing of the material as directed by the Engineer. The traffic signal and pedestrian signal heads removed as a part of this project shall become the property of the Contractor.

Method of Measurement. Removal of the existing traffic signal and pedestrian signal heads will be measured for payment per each. Removal of any existing signal post, foundation, and cabling will be paid for separately.

Basis of Payment: Payment will be considered full compensation for all labor, equipment, and material to complete the described work. Payment for the following bid items will be made as follows:

Item No.	Description	Type
X8950305	REMOVE EXISTING SIGNAL HEAD	EACH
X8950307	REMOVE EXISTING PEDESTRIAN SIGNAL HEAD	EACH

POWDER COATING TRAFFIC SIGNAL EQUIPMENT

Description. All new traffic signal posts, poles, and push button extension brackets shall be galvanized steel and powder coated black to match other existing signal equipment at each project intersection. The Contractor shall provide paint specifications and samples for approval to the City of Edwardsville and Village of Glen Carbon prior to ordering equipment.

The color shall be Ebony Black. The powder coating process shall conform to the following criteria:

Material Requirements. The powder coat finish shall consist of a Urethane, Triglycidyl Isocyanurate (TGIC) Polyester Powder.

Surface Preparation: Prior to being incorporated into an assembled product, steel plates 0.75” or more in thickness shall be blast cleaned when required to remove rolled-in mill scale, impurities and non-metallic foreign materials. After assembly, all weld flux shall be mechanically removed. The exterior steel surface shall be blast cleaned to Steel Structures Painting Council Surface Preparation Specification No. 6 (SSPC-SP6) requirements utilizing cast steel abrasives conforming to the Society of Automotive Engineers (SAE) Recommended Practice J827. The blast method used shall be a recirculating, closed cycle centrifugal wheel system with abrasive conforming to SAE Shot Number S280.

Interior Coating: Interior surfaces (pole shafts only) at the base end for a length of approximately 2.0’ shall be mechanically cleaned and coated with a zinc rich epoxy powder. The coating shall be electrostatically applied and cured in a gas fired convection oven by heating the steel substrate to a minimum of 350 degrees Fahrenheit and a maximum of 400 degrees Fahrenheit.

Exterior Coating: All exterior surfaces shall be coated with a Urethane or a Triglycidyl Isocyanurate (TGIC) Polyester Powder to a minimum film thickness of 2.0 mils (0.002”). The coating shall be electrostatically applied and cured in a gas fired convection oven by heating the steel substrate to a minimum of 350 degrees Fahrenheit and a maximum of 400 degrees Fahrenheit. The thermosetting powder resin shall provide both intercoat as well as substrate fusion adhesion that meets 5A or 5B classifications of ASTM D3359.

Packaging: Prior to shipment, the equipment shall be packaged appropriately to protect the product from being damaged during transit.

Basis of Payment. The powder coating of proposed equipment and all associated costs shall be included in the unit cost of the new traffic signal posts, poles, and push button extension brackets. No additional payment will be made.

Payment for this work shall be included within the contract unit price per each for the following respective pay items:

Item No.	Description	Type
87502250	TRAFFIC SIGNAL POST, PAINTED STEEL 10FT.	EACH
87601100	PEDESTRIAN PUSH-BUTTON POST, GALVANIZED STEEL, TYPE I	EACH
87601200	PEDESTRIAN PUSH-BUTTON POST, GALVANIZED STEEL, TYPE II	EACH
X8760200	ACCESSIBLE PEDESTRIAN SIGNALS	EACH

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:

City of Edwardsville, IL

Village of Glen Carbon, IL

The entities listed above and their officers, employees, and agents shall be indemnified and held harmless in accordance with Article 107.26.

ACCESSIBLE PEDESTRIAN SIGNALS (APS) (BDE)

Effective: April 1, 2003
Revised: January 1, 2022

Description. This work shall consist of furnishing and installing accessible pedestrian signals (APS). Each APS shall consist of an interactive vibrotactile pedestrian pushbutton with speaker, an informational sign, a light emitting diode (LED) indicator light, a solid-state electronic control board, a power supply, wiring, and mounting hardware. The APS shall meet the requirements of the MUTCD and Sections 801 and 888 of the Standard Specifications, except as modified herein.

Electrical Requirements. The APS shall operate with systems providing 95 to 130 VAC, 60 Hz and throughout an ambient air temperature range of -29 to +160 °F (-34 to +70 °C).

The APS shall contain a power protection circuit consisting of both fuse and transient protection.

Audible Indications. A pushbutton locator tone shall sound at each pushbutton and shall be deactivated during the associated walk indication and when associated traffic signals are in flashing mode. Pushbutton locator tones shall have a duration of 0.15 seconds or less and shall repeat at 1-second intervals. Each actuation of the pushbutton shall be accompanied by the speech message "Wait".

If two accessible pedestrian pushbuttons are placed less than 10 ft (3 m) apart or placed on the same pole, the audible walk indication shall be a speech walk message. This message shall sound throughout the WALK interval only. The verbal message shall be modeled after: "'Street Name.' Walk Sign is on to cross "Street Name'." For signalized intersections utilizing exclusive pedestrian phasing, the verbal message shall be "Walk sign is on for all crossings". In addition, a speech pushbutton information message shall be provided by actuating the APS pushbutton when the WALK interval is not timing. This verbal message shall be modeled after: "Wait. Wait to cross 'Street Name' at 'Street Name'".

Where two accessible pedestrian pushbuttons are separated by at least 10 ft (3 m), the walk indication shall be an audible percussive tone. It shall repeat at 8 to 10 ticks per second with a dominant frequency of 880 Hz.

Automatic volume adjustments in response to ambient traffic sound level shall be provided up to a maximum volume of 100 dBA. Locator tone and verbal messages shall be no more than 5 dB louder than ambient sound.

At locations with railroad interconnection, an additional speech message stating "Walk time shortened when train approaches" shall be used after the speech walk message. At locations with emergency vehicle preemption, an additional speech message "Walk time shortened when emergency vehicle approaches" shall be used after the speech walk message.

Pedestrian Pushbutton. Pedestrian pushbuttons shall be at least 2 in. (50 mm) in diameter or width. The force required to activate the pushbutton shall be no greater than 3.5 lb (15.5 N).

A red LED shall be located on or near the pushbutton which, when activated, acknowledges the pedestrians request to cross the street.

Signage. A sign shall be located immediately above the pedestrian pushbutton and parallel to the crosswalk controlled by the pushbutton. The sign shall conform to one of the following standard MUTCD designs: R10-3, R10-3a, R10-3e, R10-3i, R10-4, and R10-4a.

Tactile Arrow. A tactile arrow, pointing in the direction of travel controlled by a pushbutton, shall be provided on the pushbutton.

Vibrotactile Feature. The pushbutton shall pulse when depressed and shall vibrate continuously throughout the WALK interval.

Method of Measurement. This work will be measured for payment as each, per pushbutton.

Basis of Payment. This work will be paid for at the contract unit price per each for ACCESSIBLE PEDESTRIAN SIGNALS.

80099

BLENDED FINELY DIVIDED MINERALS (BDE)

Effective: April 1, 2021

Revise the second paragraph of Article 1010.01 of the Standard Specifications to read:

"Different sources or types of finely divided minerals shall not be mixed or used alternately in the same item of construction, except as a blended finely divided mineral product according to Article 1010.06."

Add the following article to Section 1010 of the Standard Specifications:

"**1010.06 Blended Finely Divided Minerals.** Blended finely divided minerals shall be the product resulting from the blending or intergrinding of two or three finely divided minerals. Blended finely divided minerals shall be according to ASTM C 1697, except as follows.

(a) Blending shall be accomplished by mechanically or pneumatically intermixing the constituent finely divided minerals into a uniform mixture that is then discharged into a silo for storage or tanker for transportation.

(b) The blended finely divided mineral product will be classified according to its predominant constituent or the manufacturer's designation and shall meet the chemical requirements of its classification. The other finely divided mineral constituent(s) will not be required to conform to their individual standards."

80436

COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017
Revised: April 1, 2019

Revise Article 107.40(b) of the Standard Specifications to read:

"(b) Compensation. Compensation will not be allowed for delays, inconveniences, or damages sustained by the Contractor from conflicts with facilities not meeting the above definition; or if a conflict with a utility in an unanticipated location does not cause a shutdown of the work or a documentable reduction in the rate of progress exceeding the limits set herein. The provisions of Article 104.03 notwithstanding, compensation for delays caused by a utility in an unanticipated location will be paid according to the provisions of this Article governing minor and major delays or reduced rate of production which are defined as follows.

(1) Minor Delay. A minor delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two hours, but not to exceed two weeks.

(2) Major Delay. A major delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two weeks.

(3) Reduced Rate of Production Delay. A reduced rate of production delay occurs when the rate of production on the work in conflict with the utility in an unanticipated location decreases by more than 25 percent and lasts longer than seven calendar days."

Revise Article 107.40(c) of the Standard Specifications to read:

"(c) Payment. Payment for Minor, Major, and Reduced Rate of Production Delays will be made as follows.

(1) Minor Delay. Labor idled which cannot be used on other work will be paid for according to Article 109.04(b)(1) and (2) for the time between start of the delay and the minimum remaining hours in the work shift required by the prevailing practice in the area.

Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.04(b)(4).

(2) Major Delay. Labor will be the same as for a minor delay.

Equipment will be the same as for a minor delay, except Contractor-owned equipment will be limited to two weeks plus the cost of move-out to either the

Contractor's yard or another job and the cost to re-mobilize, whichever is less. Rental equipment may be paid for longer than two weeks provided the Contractor presents adequate support to the Department (including lease agreement) to show retaining equipment on the job is the most economical course to follow and in the public interest.

(3) Reduced Rate of Production Delay. The Contractor will be compensated for the reduced productivity for labor and equipment time in excess of the 25 percent threshold for that portion of the delay in excess of seven calendar days. Determination of compensation will be in accordance with Article 104.02, except labor and material additives will not be permitted.

Payment for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be determined according to Article 109.13."

Revise Article 108.04(b) of the Standard Specifications to read:

"(b) No working day will be charged under the following conditions.

(1) When adverse weather prevents work on the controlling item.

(2) When job conditions due to recent weather prevent work on the controlling item.

(3) When conduct or lack of conduct by the Department or its consultants, representatives, officers, agents, or employees; delay by the Department in making the site available; or delay in furnishing any items required to be furnished to the Contractor by the Department prevents work on the controlling item.

(4) When delays caused by utility or railroad adjustments prevent work on the controlling item.

(5) When strikes, lock-outs, extraordinary delays in transportation, or inability to procure critical materials prevent work on the controlling item, as long as these delays are not due to any fault of the Contractor.

(6) When any condition over which the Contractor has no control prevents work on the controlling item."

Revise Article 109.09(f) of the Standard Specifications to read:

"(f) Basis of Payment. After resolution of a claim in favor of the Contractor, any adjustment in time required for the work will be made according to Section 108. Any adjustment in the costs to be paid will be made for direct labor, direct materials, direct equipment, direct jobsite overhead, direct offsite overhead, and other direct costs allowed by the resolution. Adjustments in costs will not be made for interest charges, loss of anticipated profit, undocumented loss of efficiency, home office overhead and unabsorbed overhead

other than as allowed by Article 109.13, lost opportunity, preparation of claim expenses and other consequential indirect costs regardless of method of calculation.

The above Basis of Payment is an essential element of the contract and the claim cost recovery of the Contractor shall be so limited."

Add the following to Section 109 of the Standard Specifications.

"**109.13 Payment for Contract Delay.** Compensation for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be allowed when such costs result from a delay meeting the criteria in the following table.

Contract Type	Cause of Delay	Length of Delay
Working Days	Article 108.04(b)(3) or Article 108.04(b)(4)	No working days have been charged for two consecutive weeks.
Completion Date	Article 108.08(b)(1) or Article 108.08(b)(7)	The Contractor has been granted a minimum two week extension of contract time, according to Article 108.08.

Payment for each of the various costs will be according to the following.

(a) Escalated Material and/or Labor Costs. When the delay causes work, which would have otherwise been completed, to be done after material and/or labor costs have increased, such increases will be paid. Payment for escalated material costs will be limited to the increased costs substantiated by documentation furnished by the Contractor. Payment for escalated labor costs will be limited to those items in Article 109.04(b)(1) and (2), except the 35 percent and 10 percent additives will not be permitted.

(b) Extended Project Overhead. For the duration of the delay, payment for extended project overhead will be paid as follows.

(1) Direct Jobsite and Offsite Overhead. Payment for documented direct jobsite overhead and documented direct offsite overhead, including onsite supervisory and administrative personnel, will be allowed according to the following table.

Original Contract Amount	Supervisory and Administrative Personnel
Up to $5,000,000	One Project Superintendent
Over $ 5,000,000 - up to $25,000,000	One Project Manager, One Project Superintendent or Engineer, and One Clerk
Over $25,000,000 - up to $50,000,000	One Project Manager, One Project Superintendent, One Engineer, and

	One Clerk
Over $50,000,000	One Project Manager, Two Project Superintendents, One Engineer, and One Clerk

(2) Home Office and Unabsorbed Overhead. Payment for home office and unabsorbed overhead will be calculated as 8 percent of the total delay cost.

(c) Extended Traffic Control. Traffic control required for an extended period of time due to the delay will be paid for according to Article 109.04.

When an extended traffic control adjustment is paid under this provision, an adjusted unit price as provided for in Article 701.20(a) for increase or decrease in the value of work by more than ten percent will not be paid.

Upon payment for a contract delay under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this provision."

80384

CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)

Effective: June 1, 2010
Revised: November 1, 2014

The reduction of emissions of particulate matter (PM) for off-road equipment shall be accomplished by installing retrofit emission control devices. The term "equipment" refers to diesel fuel powered devices rated at 50 hp and above, to be used on the jobsite in excess of seven calendar days over the course of the construction period on the jobsite (including rental equipment).

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted using the phased in approach shown below. Equipment that is of a model year older than the year given for that equipment's respective horsepower range shall be retrofitted:

Effective Dates	Horsepower Range	Model Year
June 1, 2010 1/	600-749	2002
	750 and up	2006
June 1, 2011 2/	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006
June 1, 2012 2/	50-99	2004
	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006

1/ Effective dates apply to Contractor diesel powered off-road equipment assigned to the contract.

2/ Effective dates apply to Contractor and subcontractor diesel powered off-road equipment assigned to the contract.

The retrofit emission control devices shall achieve a minimum PM emission reduction of 50 percent and shall be:

a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (http://www.epa.gov/cleandiesel/verification/verif-list.htm), or verified by the California Air Resources Board (CARB) (http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm); or

b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit

device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

Note: Large cranes (Crawler mounted cranes) which are responsible for critical lift operations are exempt from installing retrofit emission control devices if such devices adversely affect equipment operation.

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

Construction shall not proceed until the Contractor submits a certified list of the diesel powered off-road equipment that will be used, and as necessary, retrofitted with emission control devices. The list(s) shall include (1) the equipment number, type, make, Contractor/rental company name; and (2) the emission control devices make, model, USEPA or CARB verification number, or performance certification from the retrofit device manufacturer. Equipment reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation, prior to being used on the jobsite.

The Contractor shall submit an updated list of retrofitted off-road construction equipment as retrofitted equipment changes or comes on to the jobsite. The addition or deletion of any diesel powered equipment shall be included on the updated list.

If any diesel powered off-road equipment is found to be in non-compliance with any portion of this special provision, the Engineer will issue the Contractor a diesel retrofit deficiency deduction.

Any costs associated with retrofitting any diesel powered off-road equipment with emission control devices shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

Diesel Retrofit Deficiency Deduction

When the Engineer determines that a diesel retrofit deficiency exists, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency continues to exist. The calendar day(s) will begin when the time period for correction is exceeded and end with the Engineer's written acceptance of the correction. The daily monetary deduction will be $1,000.00 for each deficiency identified.

The deficiency will be based on lack of diesel retrofit emissions control.

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected.

Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

80261

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000
Revised: March 2, 2019

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract the Contractor signs with a subcontractor.

> The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
>
> (a) Withholding progress payments;
>
> (b) Assessing sanctions;
>
> (c) Liquidated damages; and/or
>
> (d) Disqualifying the Contractor from future bidding as non-responsible.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a

good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform 18.00 % of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

(a) The bidder documents enough DBE participation has been obtained to meet the goal or,

(b) The bidder documents a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217) 785-4611, or by visiting the Department's website at:
http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index.

BIDDING PROCEDURES. Compliance with this Special Provision is a material bidding requirement and failure of the bidder to comply will render the bid not responsive.

The bidder shall submit a DBE Utilization Plan (form SBE 2026), and a DBE Participation Statement (form SBE 2025) for each DBE company proposed for the performance of work to achieve the contract goal, with the bid. If the Utilization Plan indicates the contract goal will not be met, documentation of good faith efforts shall also be submitted. The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract. The required forms and documentation must be submitted as a single .pdf file using the "Integrated Contractor Exchange (iCX)" application within the Department's "EBids System".

The Department will not accept a Utilization Plan if it does not meet the bidding procedures set forth herein and the bid will be declared not responsive. In the event the bid is declared not responsive, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty and may deny authorization to bid the project if re-advertised for bids.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan is approved. All information submitted by the bidder must be complete, accurate and adequately document enough DBE participation has been obtained or document the good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. This means the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts the bidder has made. Mere *pro forma* efforts, in other words efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

(a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases and will be considered by the Department.

(1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.

(2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform these work items with its own forces.

(3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.

(5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.

(6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.

(7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.

(8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.

(b) If the Department determines the bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided it is otherwise eligible for award. If the Department determines the

bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification will also include a statement of reasons for the adverse determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period to cure the deficiency.

(c) The bidder may request administrative reconsideration of an adverse determination by emailing the Department at "DOT.DBE.UP@illinois.gov" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

(a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.

(b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.

(c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.

(d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:

(1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.

(2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission is receives as a result of the lease arrangement.

(e) DBE as a material supplier:

(1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.

(2) 100 percent goal credit for the cost of materials of supplies obtained from a DBE manufacturer.

(3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a DBE regular dealer or DBE manufacturer.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the DBE Participation Commitment Statement.

(a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be emailed to the Department at DOT.DBE.UP@illinois.gov.

(b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, a new Request for Approval of Subcontractor will not be required. However, the Contractor must document efforts to assure the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.

(c) SUBCONTRACT. The Contractor must provide copies of DBE subcontracts to the Department upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.

(d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:

(1) The replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or

(2) The DBE is aware its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or

(3) The DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

(e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

(1) The listed DBE subcontractor fails or refuses to execute a written contract;

(2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;

(3) The listed DBE subcontractor fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements;

(4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;

(5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.

(6) The Contractor has determined the listed DBE subcontractor is not a responsible contractor;

(7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor of its withdrawal;

(8) The listed DBE is ineligible to receive DBE credit for the type of work required;

(9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;

(10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated or fails to complete its work on the Contract for any reason, the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

(f) FINAL PAYMENT. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.

(g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be

made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

(h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

80029

PORTLAND CEMENT CONCRETE – HAUL TIME (BDE)

Effective: July 1, 2020

Revise Article 1020.11(a)(7) of the Standard Specifications to read:

"(7) Haul Time. Haul time shall begin when the delivery ticket is stamped. The delivery ticket shall be stamped no later than five minutes after the addition of the mixing water to the cement, or after the addition of the cement to the aggregate when the combined aggregates contain free moisture in excess of two percent by weight (mass). If more than one batch is required for charging a truck using a stationary mixer, the time of haul shall start with mixing of the first batch. Haul time shall end when the truck is emptied for incorporation of the concrete into the work. The maximum haul time shall be as follows.

Concrete Temperature at Point of Discharge, °F (°C)	Maximum Haul Time 1/ (minutes)	
	Truck Mixer or Truck Agitator	Nonagitator Truck
50 - 64 (10 - 17.5)	90	45
> 64 (> 17.5) - without retarder	60	30
> 64 (> 17.5) - with retarder	90	45

1/ To encourage start-up testing for mix adjustments at the plant, the first two trucks will be allowed an additional 15 minutes haul time whenever such testing is performed.

For a mixture which is not mixed on the jobsite, a delivery ticket shall be required for each load. The following information shall be recorded on each delivery ticket: (1) ticket number; (2) name of producer and plant location; (3) contract number; (4) name of Contractor; (5) stamped date and time batched; (6) truck number; (7) quantity batched; (8) amount of admixture(s) in the batch; (9) amount of water in the batch; and (10) Department mix design number.

For concrete mixed in jobsite stationary mixers, the above delivery ticket may be waived, but a method of verifying the haul time shall be established to the satisfaction of the Engineer."

80430

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

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012
Revised: November 1, 2021

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Engineer on Department form "SBE 723" within ten business days following the reporting period. The reporting period shall be 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

Add the following to Article 701.03 of the Standard Specifications:

"(q) Temporary Sign Supports .....1106.02"

Revise the third paragraph of Article 701.14 of the Standard Specifications to read:

"For temporary sign supports, the Contractor shall provide a FHWA eligibility letter for each device used on the contract. The letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device. The signs shall be supported within 20 degrees of vertical. Weights used to stabilize signs shall be attached to the sign support per the manufacturer's specifications."

Revise the first paragraph of Article 701.15 of the Standard Specifications to read:

"**701.15 Traffic Control Devices.** For devices that must meet crashworthiness standards, the Contractor shall provide a manufacturer's self-certification or a FHWA eligibility letter for each Category 1 device and a FHWA eligibility letter for each Category 2 and Category 3 device used on the contract. The self-certification or letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device."

Revise the first six paragraphs of Article 1106.02 of the Standard Specifications to read:

"**1106.02 Devices.** Work zone traffic control devices and combinations of devices shall meet crashworthiness standards for their respective categories. The categories are as follows.

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, plastic drums, and delineators, with no attachments (e.g. lights). Category 1 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 1 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include vertical panels with lights, barricades, temporary sign supports, and Category 1 devices with attachments (e.g. drums with lights). Category 2 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 2 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions (impact

attenuators), truck mounted attenuators, and other devices not meeting the definitions of Category 1 or 2. Category 3 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 3 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2029. Category 3 devices shall be crash tested for Test Level 3 or the test level specified.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals, and area lighting supports. It is preferable for Category 4 devices manufactured after December 31, 2019 to be MASH-16 compliant; however, there are currently no crash tested devices in this category, so it remains exempt from the NCHRP 350 or MASH compliance requirement.

For each type of device, when no more than one MASH-16 compliant is available, an NCHRP 350 or MASH-2009 compliant device may be used, even if manufactured after December 31, 2019."

Revise Articles 1106.02(g), 1106.02(k), and 1106.02(l) to read:

"(g) Truck Mounted/Trailer Mounted Attenuators. The attenuator shall be approved for use at Test Level 3. Test Level 2 may be used for normal posted speeds less than or equal to 45 mph.

(k) Temporary Water Filled Barrier. The water filled barrier shall be a lightweight plastic shell designed to accept water ballast and be on the Department's qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings.

(l) Movable Traffic Barrier. The movable traffic barrier shall be on the Department's qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings. The barrier shall be capable of being moved on and off the roadway on a daily basis."

80427

WORKING DAYS (BDE)

Effective: January 1, 2002

The Contractor shall complete the work within **115** working days.

80071

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection

for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each

classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of

Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

Contract Provision - Cargo Preference Requirements

In accordance with Title 46 CFR § 381.7 (b), the contractor agrees—

"(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract."

Provisions (1) and (2) apply to materials or equipment that are acquired solely for the project. The two provisions do not apply to goods or materials that come into inventories independent of the project, such as shipments of Portland cement, asphalt cement, or aggregates, when industry suppliers and contractors use these materials to replenish existing inventories.