010

ARKANSAS STATE HIGHWAY COMMISSION

PROPOSAL DOCUMENTS

FOR THE CONSTRUCTION OF

STATE JOB NO. **110812**

FEDERAL AID PROJECT NHPP-PRTT-HIPBIP-0054(31)

HWY. 49 MISSISSIPPI RIVER BRIDGE REHAB. (S)

STATE HIGHWAY **49** SECTION **11**

IN **PHILLIPS** COUNTY

Bound herein are the Supplemental Specifications, Special Provisions, Proposal Documents and Schedule of Items applicable to this proposed construction contract.

Applicable to this proposed construction contract, but not bound herein, are the Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 2014, and the Construction Plans.

ADDENDUM NO. 3 – JOB 110812

ARKANSAS DEPARTMENT OF TRANSPORTATION

PROGRAM MANAGEMENT DIVISION

LITTLE ROCK, ARKANSAS

October 27, 2026

TO: Eligible Bidders – Job 110812

SUBJECT: Letting Date Change; Plan and Proposal Document Changes

You are hereby advised that the letting date for Job 110812, Hwy. 49 Mississippi River Bridge Rehab (S), has been changed from November 4, 2026 to January 20, 2027. This change has been made to allow contractors ample time to prepare their bids. This project is not being withdrawn from advertisement, so contractors that are currently on the proposal holders list will remain there. Also, Special Provisions "Wrecker Service" and "Motorist Assistance Patrol" have been revised. Additionally, details for cross beam haunch dimensions and Pier 10 joint stationing annotations have been revised, and a payment note for deck drains has been added.

Plan Sheets 25, 52, 54, 61, 78, Proposal Document Page 2, and the EBS file have been revised to reflect these changes. You should substitute the revised sheets into your plan set and proposal documents and consider these revisions when submitting your bid.

ACKNOWLEDGEMENT OF THIS ADDENDUM SHALL BE MADE BY SIGNING BELOW AND SUBMITTING THIS SIGNED FORM TO THE PROGRAM MANAGEMENT DIVISION BY EMAIL AT pmd@ardot.gov OR BY FAX AT (501)569-2623.

Sincerely,

FOR Daniel Siskowski
Division Engineer
Program Management

_____
Name

_____
Company

EMAILED ADDENDUM

ADDENDUM NO. 2 – JOB 110812

ARKANSAS DEPARTMENT OF TRANSPORTATION

PROGRAM MANAGEMENT DIVISION

LITTLE ROCK, ARKANSAS

October 23, 2026

TO: Eligible Bidders – Job 110812

SUBJECT: Plan and Proposal Documents Changes

Transmitted herewith find the following listed revisions for Job 110812:

1. Added Standard Drawing PU-1: Sheet 2
2. Revised details for backfill of west approach backwall per U.S. Army Corp of Engineers: Sheets 2, 3, 11, 23, 25, 44, and 45
3. Revised item number for Epoxy Coated Reinforcing Steel (Grade 60): Sheet 24
4. Revised Keyed Notes 1-4 to match pay items in the Summary of Quantities: Sheet 34
5. Removed note for sign ML 49-W-AR-WB at Log Mile 0.512. The sign is to be removed by the Contractor, but will be replaced by state forces: Sheet 28
6. Galvanizing standard references were corrected: Sheet 61 and 93
7. Revised details for new stiffener in Repair Type C: Floor Beam Web and Repair Type D: Floor Beam Stiffener: Sheets 74 and 75

Additionally, various pay items, special provisions, and supplemental specifications have been added, removed, or revised as listed on Page 2 of this addendum. Plan Sheets 2, 3, 11, 23-25, 28, 31, 34, 44-45, 61, 74-75, 93, the Supplemental Specifications and Special Provisions Listing, the Proposal Schedule of Items Pages 1-6, and the EBS file have been revised to reflect these changes. You should substitute the revised sheets into your plan set and proposal documents and consider these revisions when submitting your bid.

ACKNOWLEDGEMENT OF THIS ADDENDUM SHALL BE MADE BY SIGNING BELOW AND SUBMITTING THIS SIGNED FORM TO THE PROGRAM MANAGEMENT DIVISION BY EMAIL AT pmd@ardot.gov OR BY FAX AT (501)569-2623.

Sincerely,



FOR Daniel Siskowski
Division Engineer
Program Management

_____
Name

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Company

EMAILED ADDENDUM

Line No.	Item Description	Previous Quantity	Revised Quantity	Unit
0008	Unclassified Excavation	0	25	Cu. Yd.
0009	Compacted Embankment	0	16	Cu. Yd
0040	Furnish and Install Variable Message Sign	1	4	Each
0062	E-Net Cable (Exterior CAT 6)	0	1,340	L.F.
---	Stone Backfill	50	0	Tons
---	Geotextile Fabric (Type 9)	33	0	Sq. Yd.
---	E-Net Cable (Exterior CAT 5E)	1,340	0	L.F.

Added Special Provisions

- Compacted Embankment

Removed Special Provisions

- Stone Backfill
- Longitudinal Tining
- Class C Fly Ash in Portland Cement Concrete Pavement and Class S(AE) Concrete
- Concrete for Structures

Revised Special Provisions

- ITS Equipment Cabinets
- Road Weather Information System (RWIS)
- Networking Equipment
- Radio Interconnect System
- Lightweight Aggregate Concrete (AE)
- Maintenance of Traffic
- Portable Camera Trailers
- Shoring
- Requirements of U.S. Coast Guard Permit
- Prosecution and Progress with Bid Schedule
- Prime Contractor Performance Evaluation

Revised Supplemental Specifications

- SS 802-5: Concrete for Structures

ADDENDUM NO. 1 – JOB 110812

ARKANSAS DEPARTMENT OF TRANSPORTATION

PROGRAM MANAGEMENT DIVISION

LITTLE ROCK, ARKANSAS

October 7, 2026

TO: Eligible Bidders – Job 110812

SUBJECT: Letting Time Change

You are hereby advised that the letting time for Job 110812, Hwy. 49 Mississippi River Bridge Rehab. (S) on Highway 49 in Phillips County, has been changed from November 4, 2026 at 10:00 AM to November 4, 2026 at 1:30 PM. The Proposal Page 2 and the EBS file have been revised to reflect this change.

ACKNOWLEDGEMENT OF THIS ADDENDUM SHALL BE MADE BY SIGNING BELOW AND SUBMITTING THIS SIGNED FORM TO THE PROGRAM MANAGEMENT DIVISION BY EMAIL AT pmd@ardot.gov OR BY FAX AT (501)569-2623.

Sincerely,

Daniel Siskowski

Daniel Siskowski
Division Engineer
Program Management

_____
Name

_____
Company

EMAILED ADDENDUM

12/11/14
Rev. 03/18/15
Rev. 11/17/17
Rev. 04/07/22

CAUTION TO BIDDERS

Please review Section 102 of the Standard Specifictions, 2014 Edition for Bidding Requirements and Conditions. Mistakes or omissions can be costly. Important items for you to check are included in, but not limited to, those listed below. This checklist is furnished only to assist you in submitting a proper bid. Check as you read.

☐ Have you contacted ARDOT (pmd@ardot.gov or 501-569-2261) to become an eligible bidder? This is required to submit a bid in the letting and must occur by 4:30pm the day prior to the letting.

☐ Have you acknowledged all Addenda by email or fax?

☐ Is the unit price entered appropriate for the item?

☐ Have you entered a unit price for each bid item except in the case of authorized alternate pay items? (A zero bid ($0.00) is a valid price and will be considered.)

☐ Have you checked the Schedule of Items for various pay items that may have a minimum or maximum unit bid price? (Refer to the Standard Specifications for further information concerning these items)

- ✓ Asphalt Binder
- ✓ Relocating Precast Concrete Barrier
- ✓ Water
- ✓ Mobilization

☐ Have you limited your bid for Mobilization to five percent (5%) of the subtotal?

☐ For Federal-aid projects, did you complete the Certification for Federal aid Contracts?

☐ Prior to submitting your bid, did you check for error messages, and are all the folders “green”?

☐ If submitting a paper copy of the Proposal Guaranty (Bid Bond) is it signed by an officer of your company **AND** the Surety Agent?

☐ Did you ensure your Proposal Guaranty (if you are submitting a paper bond) will arrive prior to the time and date stated on Page 2 of the Proposal Documents?

1-17-08
Revised: 6-1-09
Revised: 2-15-12
Revised: 1-15-15
Revised: 5-26-16
Revised: 11-17-17
Revised: 7-5-23
Revised: 8-4-25
Revised: 12-18-25

ARKANSAS DEPARTMENT OF TRANSPORTATION

NOTICE OF NONDISCRIMINATION

The Arkansas Department of Transportation (ARDOT) complies with all civil rights provisions of federal statutes and related authorities that prohibit discrimination in programs and activities receiving federal financial assistance. Therefore, ARDOT does not discriminate on the basis of race, sex, color, age, national origin, religion (not applicable as a protected group under the FMCSA Title VI Program), or disability in the admission, access to and treatment in ARDOT's programs and activities, as well as ARDOT's hiring or employment practices. Complaints of alleged discrimination and inquiries regarding ARDOT's nondiscrimination policies may be directed to the Civil Rights Division, P. O. Box 2261, Little Rock, AR 72203, (501) 569-2298, (Voice/TTY 711), or the following email address: Civil.Rights@ardot.gov

Free language assistance may be available upon request.

This notice is available from the ADA/504/Title VI Coordinator in large print, on audiotape, and in Braille.

TITLE VI CONTRACT PROVISIONS
APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

(1) Compliance with Regulations: The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

(2) Nondiscrimination: The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

(3) Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Nondiscrimination on the grounds of race, color, or national origin.

(4) Information and Reports: The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the Federal Highway Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

(5) Sanctions for Noncompliance: In the event of a contractor's noncompliance with the Nondiscrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

(a) Withholding of payments to the contractor under the contract until the contractor complies, and/or

(b) Cancelling, terminating or suspending a contract, in whole or in part.

(6) Incorporation of Provisions: The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

TITLE VI CONTRACT PROVISIONS
APPENDIX E

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non- discrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.

- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);

- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);

- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;

- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);

- Airport and Airway Improvement Act of 1982, (49 USC§ 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);

- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);

- Titles II and Ill of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;

- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;

- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);

- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681et seq).

Arkansas Department of Transportation
Supplemental Specifications and Special Provisions Listing
State Job Number 110812

The following supplemental specifications and special provisions for this project supplement the standard specifications, edition of 2014. In case of conflict, the supplemental specifications and special provisions shall govern.

ERRATA	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA-1273	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
FHWA-1273	SUPPLEMENT - WAGE RATE DETERMINATION
FHWA-1273	SUPPLEMENT - TRAINING PROGRAM - JOB 110812
JOB SP	CARGO PREFERENCE ACT REQUIREMENTS
JOB SP	PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT
JOB SP	BUY AMERICA - CONSTRUCTION MATERIALS
JOB SP	VENDOR REGISTRATION REQUIREMENT
JOB SP	DOCUMENTATION OF PAYMENTS MADE – PROMPT PAYMENT (SIGNET)
JOB SP	BIDDING REQUIREMENTS AND CONDITIONS
JOB SP	MANDATORY ELECTRONIC CONTRACT
JOB SP	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB SP	ASSESSMENT OF WORKING DAYS - MAINTENANCE OF TRAFFIC
JOB SP	FLEXIBLE BEGINNING OF WORK - CALENDAR DAY CONTRACT
JOB SP	LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS
JOB SP	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
JOB SP	NESTING SITES OF MIGRATORY BIRDS
JOB SP	COMPACTED EMBANKMENT
JOB SP	TRENCHING AND SHOULDER PREPARATION FOR TEMPORARY WIDENING
JOB SP	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
JOB SP	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB SP	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB SP	PRICE ADJUSTMENT FOR FUEL
JOB SP	ASPHALT MIXTURES WITH PG 76-22 BINDER
JOB SP	WARM MIX ASPHALT
JOB SP	COLD MILLING - MILL & INLAY
JOB SP	BROADBAND INTERNET SERVICE & FLOOD PLAIN REQUIREMENTS FOR FIELD OFFICE
JOB SP	MAINTENANCE OF TRAFFIC
JOB SP	MOTORIST ASSISTANCE PATROL
JOB SP	TRAFFIC CONTROL SUPERVISOR

Arkansas Department of Transportation
Supplemental Specifications and Special Provisions Listing
State Job Number 110812

The following supplemental specifications and special provisions for this project supplement the standard specifications, edition of 2014. In case of conflict, the supplemental specifications and special provisions shall govern.

JOB SP	WRECKER SERVICE
JOB SP	CONSTRUCTION PROJECT INFORMATION SIGN
JOB SP	PORTABLE CAMERA TRAILERS
JOB SP	VARIABLE MESSAGE SIGN SYSTEM
JOB SP	BARRIER WALL DELINEATOR
JOB SP	PRECAST CONCRETE BARRIER (TYPE SPECIAL)
JOB SP	ITS ELECTRICAL JUNCTION BOX, METALLIC
JOB SP	ITS EQUIPMENT CABINETS
JOB SP	ROAD WEATHER INFORMATION SYSTEM (RWIS)
JOB SP	PORTABLE TRAFFIC SIGNAL SYSTEM WITH TRAFFIC TIMER UNITS - COUNTDOWN
JOB SP	NETWORKING EQUIPMENT
JOB SP	RADIO INTERCONNECT SYSTEM
JOB SP	PAN-TILT-ZOOM CAMERA SYSTEM
JOB SP	ELECTRICAL CONDUCTORS-IN-CONDUIT
JOB SP	BRIDGE MOUNTED GALVANIZED STEEL CONDUIT SYSTEM
JOB SP	BRIDGE POST MOUNTED SIGN SUPPORT
JOB SP	LOCAL WORK ZONE LAW ENFORCEMENT
JOB SP	BRIDGE JACKING AND TEMPORARY FALSEWORK FOR BEARING REPLACEMENTS
JOB SP	LIGHTWEIGHT AGGREGATE CONCRETE (AE)
JOB SP	CONCRETE BRIDGE DECK CURING AND SURFACE TREATMENT RESTRICTIONS
JOB SP	CLEANING AND PAINTING EXISTING STRUCTURAL STEEL
JOB SP	DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB SP	LOW-CARBON CHROMIUM REINFORCING STEEL
JOB SP	BRIDGE STRUCTURAL STEEL REPAIRS
JOB SP	STEEL PLATE CONNECTION PREPARATION
JOB SP	CRACK ARREST HOLES FOR BRIDGE STRUCTURAL STEEL
JOB SP	NAVIGATION LIGHTING SYSTEM
JOB SP	AIRWAY OBSTRUCTION LIGHTING SYSTEM
JOB SP	PREFORMED SILICONE JOINT SEAL
JOB SP	CONTRACTOR CERTIFICATION
JOB SP	CONTAINMENT SYSTEM
JOB SP	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES
JOB SP	POLYMER OVERLAY
JOB SP	BRIDGE DECK REPAIR FOR POLYMER OVERLAYS
JOB SP	SHORING
JOB SP	STRUCTURAL STEEL SHORING
JOB SP	REQUIREMENTS OF U.S. COAST GUARD PERMIT

Arkansas Department of Transportation
Supplemental Specifications and Special Provisions Listing
State Job Number 110812

The following supplemental specifications and special provisions for this project supplement the standard specifications, edition of 2014. In case of conflict, the supplemental specifications and special provisions shall govern.

JOB SP	COORDINATION OF WORK
JOB SP	PROSECUTION AND PROGRESS WITH BID SCHEDULE
JOB SP	WATER POLLUTION CONTROL
JOB SP	PRIME CONTRACTOR PERFORMANCE EVALUATION
JOB SP	SEQUENCE OF CONSTRUCTION - ALTERNATE CONCEPTUAL PROPOSAL (ACP)
JOB SP	INSPECTOR'S PERSONAL PROTECTION CLOTHING
JOB SP	SITE USE (A+C METHOD) - CALENDAR DAY CONTRACT
JOB SP	PARTNERING REQUIREMENTS
JOB SP	VALUE ENGINEERING
JOB SP	UTILITY ADJUSTMENTS
SP 108-1	LIQUIDATED DAMAGES
SS 100-3	CONTRACTOR'S LICENSE
SS 100-4	DEPARTMENT NAME CHANGE
SS 102-2	ISSUANCE OF PROPOSALS
SS 102-3	PREQUALIFICATION OF BIDDERS
SS 103-2	CONTACT INFORMATION FOR MOTORIST DAMAGE CLAIMS
SS 105-4	MAINTENANCE DURING CONSTRUCTION
SS 107-2	RESTRAINING CONDITIONS
SS 303-1	AGGREGATE BASE COURSE
SS 306-1	QUALITY CONTROL AND ACCEPTANCE
SS 307-2	CEMENT TREATED BASE COURSE
SS 308-2	CEMENT STABILIZED CRUSHED STONE BASE COURSE
SS 400-1	TACK COATS
SS 400-4	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
SS 400-5	PERCENT AIR VOIDS FOR ACHM MIX DESIGNS
SS 400-6	LIQUID ANTI-STRIP ADDITIVE
SS 400-7	TRACKLESS TACK
SS 404-3	DESIGN OF ASPHALT MIXTURES
SS 409-2	ASPHALT LABORATORY FACILITY
SS 410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
SS 410-2	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
SS 410-4	EVALUATION OF ACHM SUBLOT REPLACEMENT MATERIAL
SS 416-1	RECYCLED ASPHALT PAVEMENT
SS 501-3	PORTLAND CEMENT CONCRETE PAVEMENT
SS 502-1	WELDED WIRE REINFORCEMENT
SS 600-2	INCIDENTAL CONSTRUCTION

Arkansas Department of Transportation
Supplemental Specifications and Special Provisions Listing
State Job Number 110812

The following supplemental specifications and special provisions for this project supplement the standard specifications, edition of 2014. In case of conflict, the supplemental specifications and special provisions shall govern.

SS 603-1	LANE CLOSURE NOTIFICATION
SS 604-1	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
SS 604-3	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)
SS 617-1	GUARDRAIL TERMINAL (TYPE 2)
SS 617-2	GUARDRAIL DELINEATORS
SS 620-1	MULCH COVER
SS 621-1	FILTER SOCKS
SS 700-2	TRAFFIC CONTROL FACILITIES
SS 723-1	GENERAL REQUIREMENTS FOR SIGNS
SS 729-1	CHANNEL POST SIGN SUPPORT
SS 730-1	BREAKAWAY SIGN SUPPORT
SS 800-1	STRUCTURES
SS 802-3	CONCRETE FOR STRUCTURES
SS 802-5	CONCRETE FOR STRUCTURES
SS 804-2	REINFORCING STEEL FOR STRUCTURES
SS 807-2	STEEL STRUCTURES
SS 808-1	INSTALLATION OF ELASTOMERIC BEARINGS
SS 808-2	ELASTOMERIC BEARINGS

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS

Errors noted in the printed book of Standard Specifications for Highway Construction, Edition of 2014, are listed below and this publication is hereby revised as follows:

Page 124: The third sentence of the first paragraph of Subsection 110.03(c) should read: The Engineer will make a decision within 10 business days concerning the necessity or practicability of the request.

Page 195: The sixth paragraph of subsection 303.02 should read: For Classes 1 through 8 materials, the fraction passing the #200 (0.075 mm) sieve shall not be greater than three-fourths of the fraction passing the #40 (0.0425 mm) sieve. For Classes 3 through 8, the fraction passing the #40 (0.425 mm) sieve shall have a liquid limit not greater than 25.

Page 363: In the second paragraph of Subsection 502.02, the reference to ASTM 775 should be replaced by “ASTM A 775”.

Page 636: In the second paragraph of Subsection 730.02, the references to AASHTO M 183 should be replaced with ASTM A36.

Page 637: The last sentence of the second paragraph of Subsection 730.03 should read: All bolts, nuts, and washers shall be galvanized according to AASHTO M 232 or ASTM B 695, Class 40 or 50.

Page 767: In the fourth paragraph of Subsection 807.06(a), the reference to ASTM B595 should be replaced by “ASTM B695”.

Page 841: Subsection 817.04(a) should read: The treatment of lumber and timber shall meet the applicable requirements of the current edition of the AWPA, Standards U1, Commodity Specification E, Use Category UC4C.

CONTRACT PROVISIONS FOR FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Davis-Bacon and Related Act Provisions
IV. Contract Work Hours and Safety Standards Act Provisions
V. Subletting or Assigning the Contract
VI. Safety: Accident Prevention
VII. False Statements Concerning Highway Projects
VIII. Implementation of Clean Air Act and Federal Water Pollution Control Act
IX. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
X. Certification Regarding Use of Contract Funds for Lobbying
XI. Use of United States-Flag Vessels

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only).

I. GENERAL

1. Historically, contracting agencies using Federal-aid highway funds were required to ensure Form FHWA-1273 was physically incorporated into all contracts and subcontracts. Effective June 10, 2026, this requirement was eliminated [91 FR 25492]. Future use of Form FHWA-1273 is now optional on the part of the contracting agency using Federal-aid highway funds. FHWA continues to make Form FHWA-1273 available as a convenience to contracting agencies. Contracting agencies must continue to ensure compliance with the provisions cited in Form FHWA-1273 in accordance with the provisions regardless of the use of Form FHWA-1273. Accordingly, the contracting agency retains the authority to determine whether the contractor must use Form FHWA-1273 to physically incorporate required contract provisions in each subcontract and in lower tier contracts. Where permitted by the contracting agency, the contractor may choose other ways to include required contract provisions in each subcontract, besides incorporating Form FHWA-1273. Contract provisions in Form FHWA-1273 are not required to be physically included in subcontracts for design services on Federal-aid design-build contracts, or in purchase orders, rental agreements and other agreements for supplies or services.

The applicable provisions 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 or design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents.

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. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION

The contractor and all subcontractors must comply with the following policies: 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27, including any amendments thereto.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27, including any amendments thereto.

The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract.

1. Assurances Required:

a. The requirements of 49 CFR Part 26, including any amendments thereto, and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26, including any amendments thereto, in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

(1) Withholding monthly progress payments;
(2) Assessing sanctions;
(3) Liquidated damages; and/or
(4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E, including any amendments thereto, are incorporated by reference. 49 CFR Part 21.

III. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

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

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

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

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

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

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

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

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

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the

classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to *DBAconformance@dol.gov*. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

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

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

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

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph 2.a. of this section or Section IV, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number

of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

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

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

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

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with 29 CFR part 30, including any amendments thereto.

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

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section III. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs (1) through (11) of this section, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the

contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

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

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

IV. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

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

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* $33 as of January 15, 2025 (See 90 FR 1859) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section III paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

V. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

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

a. The term “perform work with its own organization” in paragraph 1. of this section refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph 1. of this section is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however,

contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VI. SAFETY: ACCIDENT PREVENTION

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

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

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

VII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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

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

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

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

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

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

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

VIII. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of $150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

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

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

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

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

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/). 2 CFR 180.300, 180.320, and 180.325.

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

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

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

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

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

* * * * *

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

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

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

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

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

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

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

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

* * * * *

X. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

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

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

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

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

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

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

XI. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (40 U.S.C. sections 14501(d) and 14701 and the Appalachian Regional Commission Code as authorized under 40 U.S.C. section 14302)
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 40 U.S.C. 14501 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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS

Elsewhere in this contract are three Supplemental Specifications on Equal Employment Opportunity designated as PR-1273 Supplements. They are (1)Specific Equal Employment Opportunity Responsibilities (23 U.S.C. 140), (2) Equal Employment Opportunity – Goals and Timetables, and (3) Equal Employment Opportunity - Federal Standards. This notice is to clarify the responsibilities for review of compliance and enforcement for these separate supplemental specification requirements.

The first of the Supplemental Specifications cited above covers the requirements for the equal employment opportunity program under Title 23 for which the Arkansas Department of Transportation (ARDOT) is responsible. The ARDOT performs the necessary compliance review and enforcement of this Supplemental Specification which is applicable to all contractors holding Federal-aid highway contracts.

The latter two Supplemental Specifications are for the specific equal opportunity requirements for Executive Order 11246 which is the sole responsibility of the Office of Federal Contract Compliance Programs (OFCCP), Department of Labor. Review and enforcement under these Supplemental Specifications is performed by OFCCP.

OFCCP has, under Paragraph 8 of the EEO Federal Standards Supplemental Specification, recognized the Arkansas AGC Heavy Highway Affirmative Action Plan as meeting the provisions of that Supplemental Specification and Supplemental Specification (2)cited above. With this recognition, those contractors signatory to the AGC Plan have been waived from individual review by OFCCP. However, OFCCP retains the right to review any such contractors whenever circumstances warrant. Also, contractors non-signatory to the AGC Plan are subject to OFCCP review under EO 11246.

ARDOT and OFCCP have agreed to work towards eliminating duplicative reviews on individual contractors; however, each agency may make reviews at any time notwithstanding the cited agreement.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES
(23 U.S.C. 140)

1. General.

a. Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Order 11246 and Executive Order 11375 are set forth in Required Contract Provisions (Form FHWA-1273 and Supplements) and these Special Provisions which are imposed pursuant to Section 140 of Title 23, U.S.C., as established by Section 22 of the Federal-Aid Highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract Provisions. The initial measure of the contractor's good faith efforts to comply with these Special Provisions shall be its efforts to meet the goals set forth in the "Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)" for minority and female participation expressed in percentage terms for the contractor's work force in each trade on this project.

b. The contractor will work with the Department and the Federal Government in carrying out equal employment opportunity obligations and in their review of his/her activities under the contract.

c. The contractor and all his/her subcontractors holding subcontracts not including material suppliers, of $10,000 or more, will comply with the following minimum specific requirement activities of equal employment opportunity: (The equal employment opportunity requirements of Executive Order 11246, as set forth in Volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors.) The contractor will include these requirements in every subcontract of $10,000 or more with such modification of language as is necessary to make them binding on the subcontractor.

2. Equal Employment Opportunity Policy.

The contractor will accept as his operating policy the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex, age, disability, or national origin, and to promote the full realization of equal employment opportunity through a positive continuing program:

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, color, religion, sex. age, disability, or national origin. 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, preapprenticeship, and/or on-the-job training.

3. Equal Employment Opportunity Officer.

The contractor will designate and make known to the Department contracting officers an equal employment opportunity officer (hereinafter referred to as the EEO Officer) who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

4. Dissemination of Policy.

a. 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 equal employment opportunity policy and contractual responsibilities to provide equal employment opportunity 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:

(1) 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 equal employment opportunity policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

(2) All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official covering all major aspects of the contractor's equal employment opportunity obligations within thirty days following their reporting for duty with the contractor.

(3) All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer or appropriate company official in the contractor's procedures for locating and hiring minority and female employees.

b. In order to make the contractor's equal employment opportunity policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the contractor will take the following actions:

(1) Notices and posters setting forth the contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment, and potential employees.

(2) The contractor's equal employment opportunity 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.

5. Recruitment.

a. When advertising for employees, the contractor will include in all advertisements for employees the notation: •An Equal Opportunity Employer." All such advertisements will be published in newspapers or other publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

b. 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 minority and female applicants, including, but not limited to, State employment agencies, schools, colleges, and minority group organizations. To meet this requirement, the contractor will, through his EEO Officer, identify sources of potential minority and female employees, and establish with such identified sources procedures whereby minority and female applicants may be referred to the contractor for employment consideration.

In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with equal employment opportunity contract provisions. (The U.S. Department of Labor has held that where implementation of such agreements has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority and female applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures with regard to referring minority and female applicants will be discussed with employees.

6. 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, age, disability, or national origin. 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 his 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 discrimina- tion 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 his avenues of appeal.

7. Training and Promotion.

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees and applicants for employment.

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. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event the Optional Training Special Provision is provided under this contract, this subparagraph will be superseded by that Special Provision.

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 minority group and women employees and will encourage eligible employees to apply for such training and promotion.

8. Unions.

If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. 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 best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an equal employment opportunity 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, age, disability, or national origin.

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 State Highway Department 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 minority and women 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, age, disability, or national origin, making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The U.S. Department of Labor has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) 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 Department.

9. Subcontracting.

a. The contractor's attention is called to the Special Provision on Disadvantaged Business Enterprises in Federal-Aid Highway Construction.

b. The contractor will use his best efforts to ensure subcontractor compliance with their equal employment opportunity obligations.

10. Records and Reports.

a. The contractor will keep such records as are necessary to determine compliance with the contractor's equal employment opportunity obligations. The records kept by the contractor will be designed to indicate:

(1) the number 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 to increase employment opportunities for minorities and women (applicable only to contractors who rely in whole or in part on unions as a source of their work force),

(3) the progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees, and

(4) the progress and efforts being made in securing the services of Disadvantaged Business Enterprises or subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. All such records must be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the Department and the Federal Highway Administration.

c. The contractors will submit an annual report to the State Highway 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 PR 1391.

11. Corrective Action Plans.

The contractor understands that a designated representative of the Department will periodically review compliance by the contractor with all contractual provisions incorporated pursuant to Executive Order 11246, as amended, and Federal Highway Administration Equal Employment Opportunity Special Provisions implementing the Federal-Aid Highway Act of 1968, where applicable.

In the event that the designated representative of the Department finds that the contractor has failed to comply with any of the aforementioned contractual provisions, he will notify the contractor of this finding in writing. A declaration of default will result in the suspension of all future payments. No declaration of default will be made if the Department and the contractor formally agree to enter into a corrective action plan setting out the specified steps and timetables the contractor will be contractually obligated to perform in order to re-establish his compliance. This corrective action plan, in order to be accepted by the Department, shall include the following mandatory enforcement language:

"If, at any time in the future, the Office of Federal Contract Compliance Programs or the Federal Highway Administration or the Arkansas State Highway Commission or their successor(s) believe that (name of contractor) has violated any portion of this agreement, (name of contractor) shall be promptly notified of the fact in writing. This notification shall include a statement of the facts and circumstances relied upon in forming that belief. In addition, the notification shall provide (name of contractor) with 15 days to respond in writing to the notification except where the Office of Federal Contract Compliance Programs, the Federal Highway Administration or the Arkansas State Highway Commission alleges that such delay would result in irreparable injury. It is understood that enforcement proceedings for violation of this agreement may be initiated at any time after the 15-day period has elapsed (or sooner if irreparable injury is alleged) without issuance of a show cause notice."

"It is recognized that where the Office of Federal Contract Compliance Programs and/or the Federal Highway Administration and/or the Arkansas State Highway Commission believes that (name of contractor) has breached this agreement, evidence regarding the entire scope of (name of contractor) alleged noncompliance from which this agreement resulted, in addition to evidence regarding (name of contractor) alleged violation of this agreement, may be introduced at the enforcement proceeding."

"Violation of this agreement may subject (name of contractor) to sanctions pursuant to the Arkansas State Highway Commission contract administration procedures. It is further recognized that liability for violation of this agreement may also subject (name of contractor) to sanctions set forth in Section 209 of Executive Order 11246, as amended, and/or appropriate relief."

The contractor will submit quarterly reports to the Department as a result of any deficiencies cited during an equal employment opportunity compliance review. The reports will indicate the affirmative action steps taken to correct the deficiencies. Instructions for submission of the reports will be furnished by the Equal Employment Opportunity Section.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

MINORITIES

COUNTY

Arkansas	16.4%	Lee	26.5%
Ashley	16.4%	Lincoln	16.4%
Baxter	3.3%	Little River	19.7%
Benton	3.3%	Logan	6.6%
Boone	3.3%	Lonoke	16.4%
Bradley	16.4%	Madison	3.3%
Calhoun	16.4%	Marion	3.3%
Carroll	3.3%	Miller	19.7%
Chicot	16.4%	Mississippi	26.5%
Clark	16.4%	Monroe	16.4%
Clay	26.5%	Montgomery	16.4%
Cleburne	16.4%	Nevada	20.2%
Cleveland	16.4%	Newton	3.3%
Columbia	20.2%	Ouachita	16.4%
Conway	16.4%	Perry	16.4%
Craighead	26.5%	Phillips	26.5%
Crawford	5.6%	Pike	20.2%
Crittenden	32.3%	Poinsett	26.5%
Cross	26.5%	Polk	6.6%
Dallas	16.4%	Pope	16.4%
Desha	16.4%	Prairie	16.4%
Drew	16.4%	Pulaski	15.7%
Faulkner	16.4%	Randolph	26.5%
Franklin	6.6%	Saline	15.7%
Fulton	16.4%	Scott	6.6%
Garland	16.4%	Searcy	3.3%
Grant	16.4%	Sebastian	5.6%
Greene	26.5%	Sevier	20.2%
Hempstead	20.2%	Sharp	16.4%
Hot Spring	16.4%	Stone	16.4%
Howard	20.2%	St. Francis	26.5%
Independence	16.4%	Union	16.4%
Izard	16.4%	Van Buren	16.4%
Jackson	16.4%	Washington	3.3%
Jefferson	31.2%	White	16.4%
Johnson	16.4%	Woodruff	16.4%
Lafayette	20.2%	Yell	16.4%
Lawrence	26.5%		

FEMALES

Statewide - 6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the “covered area” is as described in the Proposal Form for this report.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:

a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

d. "Minority" includes:

i. Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

ii. Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

iii. Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

1v. American Indian or Alaskan Native (all persons having origins in any of the original peoples of North American and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CPR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The

Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees before the start of work and then not less often than once every six months; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foreman, etc., prior to the initiation of construction work at any job site and then not less often than once every six months. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above describing the openings, screening procedures, and test to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between sexes.

o. Document and maintain a record of all solicitations of offers for subcontractors for disadvantaged business

enterprise construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's non-compliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, national origin, age or disability.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Employment Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41CFR60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

16. In addition to the reporting requirements set forth elsewhere in this contract, the contractor and the subcontractors holding subcontracts not including material suppliers, of $10,000 or more, shall submit for every month of July during which work is performed employment data as contained under Form PR-1391 (Appendix C to 23 CFR, Part 230), and in accordance with the instructions included thereon.

FHWA-1273 SUPPLEMENTAL SPECIFICATION

POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS

	POSTER OR DOCUMENT REQUIRED	REQUIRED BY	WHERE TO OBTAIN
1.	Equal Employment Opportunity – Know Your Rights	U.S. Department of Labor (OFCCP)	ARDOT Resident Engineer
2.	Company EEO Policy (prepared by the Contractor on the Company's letterhead)	U. S. Department of Labor (OFCCP) *Union Contractors Only	Contractor to Prepare: a. EEO policy statement. b. Notice encouraging employees to refer minority and female applicants for employment. c. Notice informing employees of an available training program and the entrance requirements. d. Complaint procedures. e. Notice identifying company EEO officer by name, including address and telephone number where EEO officer can be located. f. Work environment statement. g. Certification of nonsegregated facilities. *h. Notice to unions disseminating EEO commitments and responsibilities and requesting their cooperation.
3.	Current Wage Rates (PR-1273 Supplement) or SS Revisions of PR-1273 for Off-System Projects	U. S. Department of Labor	Contained in contract. Extra copies may be obtained from Program Management - ARDOT

FHWA-1273 SUPPLEMENTAL SPECIFICATION

POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS

	POSTER OR DOCUMENT REQUIRED	REQUIRED BY	WHERE TO OBTAIN
4.	"Employee Rights Under the Davis-Bacon Act" (WH 1321)	U. S. Department of Labor	ARDOT Resident Engineer
5.	"Employee Rights Under the Davis-Bacon Act" (WH 1321 SPA)	U. S. Department of Labor	ARDOT Resident Engineer
6.	Minimum Wage Rate (WH 1088)	U. S. Department of Labor	ARDOT Resident Engineer
7.	"NOTICE" Federal Aid Projects (PR-1022)	U. S. Department of Transportation (FHWA)	ARDOT Resident Engineer
8.	Job Safety and Health Protection OSHA 3165	U. S. Department of Labor (OSHA)	ARDOT Resident Engineer
9.	Job Safety and Health Protection OSHA 3167 SPA	U. S. Department of Labor (OSHA)	ARDOT Resident Engineer
10.	Emergency Phone Numbers of Doctors, Hospital and Ambulance near Job Site for referring injured employees.	U. S. Department of Labor (OSHA)	ARDOT Resident Engineer
11.	WCC Form AR-P Workers Compensation Notice and Instructions to Employers and Employees	State of Arkansas	Insurance Carrier
	Self-Insurer	State of Arkansas	Administrator - Self-Insured Group

FHWA-1273 SUPPLEMENTAL SPECIFICATION

POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS

	POSTER OR DOCUMENT REQUIRED	REQUIRED BY	WHERE TO OBTAIN
12.	Log and Summary of Occupational Injuries and Illnesses (OSHA Form 300) The Summary portion must be posted from February 1 to April 30, of the year following the year covered by the form.	U. S. Department of Labor (OSHA) Public Law 91-596	ARDOT Resident Engineer
13.	Family and Medical Leave Act of 1993 (WH-1420) Employers who employ 50 or more employees for at least 20 workweeks in the current or preceding calendar year.	U. S. Department of Labor	ARDOT Resident Engineer
14.	Employee Polygraph Protection Act (WH-1462)	U. S. Department of Labor	ARDOT Resident Engineer
15.	Your Rights Under USERRA (The Uniformed Services Employment and Reemployment Rights Act)	U. S. Department of Labor	ARDOT Resident Engineer
16.	Arkansas Department of Labor Notice to Employer & Employee	Arkansas Department of Labor	ARDOT Resident Engineer
17.	Pay Transparency Nondiscrimination Provision	U. S. Department of Labor (OFCCP)	ARDOT Resident Engineer

"General Decision Number: AR20260045 05/18/2026

State: Arkansas

Construction Types: Heavy

Counties: Arkansas Counties of
Arkansas, Ashley, Bradley, Chicot,
Desha, Drew and Phillips

Modification Number	Publication Date
0	01/02/2026
1	05/18/2026

SUAR2015-042 01/09/2017

	Rates	Fringes
TRUCK DRIVER: DUMP TRUCK	$ 12.85	0.00
OPERATOR: BULLDOZER	$ 20.10	0.00
OPERATOR: BACKHOE/EXCAVATOR/TRACKHOE	$ 16.13	0.00
LABORER: PIPELAYER	$ 11.97	0.00
LABORER: COMMON OR GENERAL	$ 10.24	0.00
CARPENTER, INCLUDES FORM WORK	$ 16.41	3.15

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts

regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least $13.65 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract from May 11, 2026, through December 31, 2026. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under Executive Order 13658 is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than
SU, UAVG, SA, or SC denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The SU identifier indicates that either a single non-union

rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

�SU� wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The �SA� identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the �SA� identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested

party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB 110812

TRAINING PROGRAM

This Special Provision supersedes subparagraph 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities" and implements 23 USC 140(a).

The contractors shall provide on-the-job training aimed at developing full journeymen in the type of trade or job classification involved.

The number of training slots to be trained under the special provision will be **3**. A training slot will consist of 520 to 1040 hours.

As part of the contractor's equal employment opportunity/affirmative action program, training shall be provided as follows:

Training and upgrading of minorities, females and disadvantaged individuals toward journey level status is the primary objective of this Special Provision. A “disadvantaged individual” is an individual that meets the criteria established by the Department of Health and Human Services Poverty Guidelines. Training in classifications such as clerk-typist, secretary, bookkeeper, fire fighter, office engineer, estimator, timekeeper, laborer, or flag person **shall not** be approved for participation under this Special Provision.

The goals for minority and female participation established in accordance with 41 CFR 60-4 and listed elsewhere in this contract in the FHWA-1273 Supplement titled "Equal Employment Opportunity Goals and Timetables" subtitled "Notice of Requirement for Affirmative Action to Ensure Equal Opportunity (Executive Order 11246)" apply to all training performed by the contractor in the covered area.

In the event that the contractor subcontracts a portion of the contract work, the contractor may not further assign a portion of the training requirements established herein without the consent of the subcontractor(s). Any assignment of these training requirements by the contractor shall be submitted in writing to the Department and an appropriately amended commitment form shall be made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The contractor shall submit to the Department’s Resident Engineer at the preconstruction conference a completed Training Commitment Form (TCF). Refer to Page four of four. The TCF should specify the training program, number of trainees, training classification, estimated starting date and training hours required per training classification to be used to fulfill the training requirement of this Special Provision. The Department must approve this form within 20 working days after the preconstruction conference. The contractor may enroll additional individuals in the training program based on approval of the Resident Engineer and there is sufficient time on the project or subsequent projects to complete the training.

ARKANSAS DEPARTMENT OF TRANSPORTATION

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JOB 110812

TRAINING PROGRAM

If the contractor fails to submit the TCF at the preconstruction conference, work will not be allowed to start on the project until the TCF is submitted to the Resident Engineer.

Only training programs approved by the Department with FHWA concurrence, the Department of Labor, its agencies, or by a State Apprenticeship Agency or Council recognized by the U.S. Department of Labor may be used to fulfill training requirements under this Special Provision.

The contractor, upon the start of training under the contract, shall provide the Resident Engineer the following information for each trainee:

Name
Address
Telephone Number
Social Security Number
Race/Ethnic Origin
Gender
Training Classification
Training Starting Date
Classification(s) previously trained and date training was completed (if applicable)

The contractor shall furnish to the Resident Engineer the number of training hours the trainee has accumulated each month. A Trainee Termination Form shall be completed when a trainee terminates from the training program. The Resident Engineer shall receive a copy.

The contractor, prior to the start of training, shall provide written notice to each individual to be trained under this Special Provision of that individual's designation as a trainee, the training program and classification under which training will be provided, the length of the training program, and the hourly wage rate to be paid to the trainee. Each month, while enrolled in the training program, the contractor shall inform the trainee of the number of hours accumulated in the training program. Upon graduation, each trainee shall be issued a permanent certification designating the bearer as a graduate journey person of the appropriate training program.

No employee shall be employed as a trainee in any classification in which the employee has successfully completed a training course leading to journey level status or in which the employee has been employed at the journey level. Individuals may be trained a maximum of three times as long as the training is for the purpose of upgrading that individual. If the trainee is enrolled more than once on this project, the trainee will only count as one in satisfying the number that is required to be enrolled in this contract. The contractor shall satisfy this requirement by including appropriate questions in the employee application or by other suitable means. The contractor's findings in each case shall be documented.

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JOB 110812

TRAINING PROGRAM

Except as otherwise noted below, the contractor will be paid $2.00 per hour of training provided to minorities, women and disadvantaged individuals on this contract under an approved training program. As approved by the Department, payment will be made to the contractor for training persons in excess of the number of hours specified herein. This payment may be made even though the contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other payment. Payment for off-site training may be made only if the approved training program being used by the contractor includes provisions for off-site training, the trainees are concurrently employed on a Federal-aid project, and the contractor contributes to the cost of the training, provides the instruction to the trainee, or pays the trainee's wage during the off-site training.

No payment will be made due to failure to provide the training required as stated in the approved training program and a good faith effort has not been made to retain the trainee upon completion of the training program, if work continues to be available in that classification. It is normally expected that a trainee will begin training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in the work classification or until the trainee has completed the training program. It is desired that all trainees be on board for the entire length of the contract. Responsibilities will have been fulfilled under this Special Provision if acceptable training has been provided on the basis of the total number enrolled on the contract for a significant period or the contractor has made a good faith effort to fulfill its obligations.

Trainees will be paid at least 60 percent of the appropriate minimum journey level rate specified in the contract or no less than the common laborer rate for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Special Provision.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB 110812

TRAINING PROGRAM

TRAINING COMMITMENT FORM

In accordance with this Training Special Provision, the undersigned bidder will provide training in the following crafts and in the amount of hours indicated below.

Training Program _____

Number of Trainees	Training Classification	Estimated Starting Date	Minimum Number of Training Hours Required Per Trainee

_____
Company Representative

_____
Title

_____
Date

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

CARGO PREFERENCE ACT REQUIREMENTS

The requirements of the Cargo Preference Act (CPA) and implementing regulations (46 CFR 381.7(a)-(b)) are applicable to this contract. For additional information, see the FHWA's web page:

https://www.fhwa.dot.gov/construction/cqit/cargo.cfm

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

PROHIBITION OF CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT

In accordance with the requirements of 2 CFR 200.216, equipment utilized on this project for telecommunications and video surveillance services or equipment shall not be produced by:

1) Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

2) Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

BUY AMERICA - CONSTRUCTION MATERIALS

Description: **Section 106, Control of Material**, of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added as **Subsection 106.01(c) Construction Materials**

Buy America – Construction Materials. (1) General. The Bipartisan Infrastructure Law (BIL) was enacted on November 15, 2021 (BIL Build America, Buy America Act Publication L. No. 117-58). This provision expands the Buy America requirements beyond what was only required for steel and iron products. The steel and iron provisions have not changed with the new law. Buy America requirements are in effect only on Federal-Aid contracts and all construction materials shall be produced/manufactured in the United States. Items specifically excluded from this requirement are cement and cementitious materials; aggregates such as stone, sand, or gravel; aggregate binding agents or additives (including asphalt binders). All other materials permanently incorporated into the project will be subject to Buy America requirements.
(2) Definitions. A construction material includes an article, material, or supply that is or consists primarily of:

- non-ferrous metals;
- plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cable);
- glass (including optic glass);
- lumber; or
- drywall.

All construction materials shall be produced in the United States. This means all manufacturing processes to produce the construction materials shall occur in the United States. All manufacturing processes for construction materials shall mean the final manufacturing process and the immediately preceding manufacturing stage for the construction material.
All manufactured products permanently incorporated into the project must be manufactured in the United States or assembled from components that are mined, produced, or manufactured in the United States. The combined value of the domestic components of a manufactured product must be greater than 55 percent of the total cost of all components of the manufactured product.
(3) Compliance. All prospective bidders should obtain quotes from suppliers that can furnish the required domestic manufactured materials and the cost of such should be included in the contract unit prices bid for the various individual pay items. Waivers will only be considered when there is no domestic manufacturer of the specific item meeting the requirements in the appropriate section of the Standard Specifications. Questions relating to domestic product availability should be made pre-bid and responses, including possible waivers, will be posted on the Department's website.

The Contractor shall ensure that all manufacturing processes for each covered product comply with this Buy America Provision. Non-conforming products shall be replaced at no expense to the Department. It is the contractor's responsibility to assure all submittals required

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

BUY AMERICA - CONSTRUCTION MATERIALS

for Buy America are submitted to the Engineer prior to the products and or materials being incorporated into the project.

Buy America requirements do not apply to temporary elements not permanently incorporated into a project. This includes falsework, temporary sheet piling, detour bridges, temporary elements left in place at the contractor's convenience, unless the contract plans and specifications require steel or iron components or imply that the item be left in place, or items that are simply moved from one place to another within the same project. Buy America only applies to construction materials that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, removed at or before completion of the project.

(4) Certification. The contractor shall provide a certification from the supplier for each construction material, stating that it meets the provisions of this specification or the Build America/Buy America act, prior to incorporating any construction material into the project. The supplier certifying may be the original manufacturer, fabricator, or vendor provided the supplier has sufficient control and knowledge of the manufacturing process to accept responsibility and certify full and complete conformance with the certification. In lieu of the manufacturer's certification, the Contractor or supplier may provide the Domestic Materials Self-Certification Form for the specific product from AASHTO's Product Evaluation & Audit Solution's datamine (www.transportation.org/product-evaluation-and-audit-solutions) or from the NEMA Make it American BABA Registry (https://www.makeitelectric.org/nema-programs/make-it-american/nema-make-it-american/).

(5) Examples of Pay Items Affected. The following are items from the Standard Specifications and common special provisions that must meet the requirements of this specification. This list is provided for bidders' information and is not to be considered as all-inclusive as other items covered by the standard specifications, supplemental specifications, and special provisions may also fall under these requirements:

Non-Ferrous Metals	
Item	**Specification Section**
Aluminum Pipe Culverts	606
Aluminum Chain Link Fence	619
Aluminum Gates	619
Mailboxes	637
Electrical Conductors	700, 708
Controller Cabinet (cabinet assembly)	701, 702,703
Ground Rods	701, 712, 714, 715
System Local Controller/Actuated Controller components (surge protector, conflict monitor, switches, flashers, relays, wiring harness, clocks, etc.)	701. Job SP
Pre-Timed Controller (cabinet and internal equipment)	702
Flashing Beacon Controller (cabinet and all internal equipment)	703

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BUY AMERICA - CONSTRUCTION MATERIALS

Loop Wiring	704
Vehicle Detectors (including all electrical components and mounting racks)	704
Feeder Wire	704
Preformed Detector Loops	704
Loop Wiring in Duct	705
Traffic Signal Heads (all types)	706, Job SP
Pedestrian Signal Heads	707
Traffic Signal Cable	708
Sign Supports - all types (including clips and fasteners)	724, 730
Sign Panels (including clips and fasteners)	723, 725, 726, 727, 728
Video Detectors (detector, processor, and other equipment)	733
Video Cable	733
Metal Bridge Railing	806
Bronze or Copper Alloy Bearing and Expansions Plates	807
Bridge Name Plates	812
Accessible Pedestrian Signals (APS)	Job SP
Electrical Conductors for Luminaires	Job SP
Electrical Conductors-in-Conduit	Job SP
LED Roadway Illumination Poles	Job SP
Luminaires	Job SP
Pedestal Type Service Point Assembly	Job SP
Retroreflective Backplates	Job SP
Wrong Way Detection System Controller Cabinet	Job SP
Copper plumbing lines and fittings	Job SP

Plastic/Polymer Based Products	
Item	**Specification Section**
Joint Sealers (Types 3 and 4)	501,503, 504,507,509
Epoxy Coating for Dowel Bars and Reinforcing Steel	501, 502, 507, 804
Epoxy Resin Anchoring Systems (Dowel Bars, Hand Rails, Metal Bridge Railing, Anchor Bolts)	507, 633, 806, 807
Polyethylene Pipe Culverts	606
PVC Pipe Culverts	606
RC Pipe Culvert Gaskets	606
Drop Inlet Steps	609, 610, 640
ABS or Polyethylene Pipe for Underdrains	611
PVC Pipe for Underdrain Laterals	611

ARKANSAS DEPARTMENT OF TRANSPORTATION

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BUY AMERICA - CONSTRUCTION MATERIALS

Filter Fabrics	611, 625, 629, 816
Geotextile Fabrics	625
Tactile Panels for Wheelchair Ramps	641, Job SP
System Local Controller/Actuated Controller components (surge protector, conflict monitor, switches, flashers, relays, wiring harness, clocks, etc.)	701, Job SP
Pre-Timed Controller (internal equipment)	702
Flashing Beacon Controller (all internal equipment)	703
Vehicle Detectors (all electrical components)	704
Traffic Signal Heads (all types)	706, Job SP
Pedestrian Signal Heads	707
Non-Metallic Conduit (PE & PVC)	710
Paint for Reflectorized Paint Pavement Markings	718
Thermoplastic Pavement Markings (all)	719
Permanent Pavement Marking Tape	720
Raised Pavement Markers (markers and epoxy adhesive)	721
Sand Barrels/Lids for Impact Attenuation Barriers	731
Video Detectors (detector, processor, and other equipment)	733
Paint Systems for Structural Steel	807, 820
Preformed Joint Seals	809
Silicone Joint Sealants	809
Accessible Pedestrian Signal (APS) components	Job SP
Cellular Modem	Job SP
Enhanced Thermoplastic Pavement Markings	Job SP
Ethernet Switch (all types)	Job SP
Geogrids (all types)	Job SP
Hybrid Video/Radar Detection System components	Job SP
Latex Modifier in Latex Modified Concrete Overlays	Job SP
Lightweight Panels for Sound Reflecting Noise Barriers	Job SP
Overhead Digital Message Sign Assembly	Job SP
Polymer Resin in Polymer Overlays	Job SP
Polypropylene Pipe Culverts	Job SP
PTZ Camera System	Job SP
Radar Detection System	Job SP
Wrong Way Detection System FLIR Thermal Sensor	Job SP
Wrong Way Detection System Solar Panel	Job SP
PVC piping and fittings for building projects	Job SP

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BUY AMERICA - CONSTRUCTION MATERIALS

Glass	
Item	**Specification Section**
Glass Beads (drop on application)	718, 719
Fiber Optic Cable	Job SP
Solar Panels (Wrong Way Detection Systems and other ITS systems)	Job SP
Windows in Building Construction	Job SP

Lumber	
Item	**Specification Section**
Wood Guard Rail Posts	617, 639
Wood Block Outs for Guardrail	617,639
Wood Posts for Guard Cable	618
Fence Posts and Braces (Type A, B, C and D)	619
Mailbox Supports	637
Treated Wood Poles	716
Treated Lumber	817
Treated Bridge Timbers	817
Timber Piling	818
Framing Lumber, Plywood, Trim Lumber in Building Construction	Job SP

Drywall	
Item	**Specification Section**
Drywall in Building Construction	Job SP

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JOB NO. 110812

VENDOR REGISTRATION REQUIREMENT

To ensure proper information is on file for all Contractors on ARDOT construction projects, Prime Contractors and Subcontractors shall submit vendor registration information using the ARDOT Vendor Registration Form.

The ARDOT Vendor Registration Form is a Microsoft Form developed to allow the Department to collect vendor information electronically and transmit that information into the Department's construction management system (CMS).

The form may be used both for initial registration and for submission of updated vendor information when changes are needed, such as updated contact information.

Contractors may complete the ARDOT Vendor Registration Form at any time to be included in the construction management system as a Vendor. The form allows contractors to indicate if they wish to be considered for Prequalification or for DBE Certification. The form will not complete the Prequalification or DBE Certification process but will instead initiate the process with the proper Divisions in ARDOT. All bidders must submit this form prior to bidding on any Proposal to ensure ARDOT data is correct and complete. Any Contractors who will be added as Subcontractors on the contract shall complete the ARDOT Vendor Registration Form prior to submitting the actual subcontract.

Vendors shall ensure that all information submitted through the ARDOT Vendor Registration Form is complete and accurate. The Department may require correction or resubmission of incomplete or inaccurate information before the registration is considered acceptable.

No direct payment will be made for furnishing and submitting vendor registration information. All costs associated with complying with this Special Provision shall be considered incidental to the contract.

The ARDOT Vendor Registration Form is available at the following link:
https://forms.office.com/Pages/ResponsePage.aspx?id=k42YmO7x6EGK6v9zsAW4fbNdDoviCDRLsOknaQRB5A9UME5XOVc0T1pKMU84VFQwMUY5Nk5NQTY0MCQlQCN0PWcu

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

DOCUMENTATION OF PAYMENTS MADE – PROMPT PAYMENT (SIGNET)

In accordance with Section 108.01 of the Standard Specifications, the Contractor shall pay all subcontractors their respective subcontract amount within 10 calendar days after the Contractor receives payment from the Department. Payment is defined as issuing an Electronic Funds Transfer (EFT) or mailing a check to a subcontractor. The 10-day requirement is met on the date that payment is issued to the subcontractor.

First-tier subcontractors have the same obligation to any second-tier subcontractors. Subcontractors must pay their second-tier subcontractors within 10 days of receipt of payment from the Prime Contractor.

ARDOT monitors payments made by prime contractors to both DBE and non-DBE subcontractors to ensure compliance with prompt payment requirements. Prime contractors are required to report payments made to all subcontractors, and subcontractors must report payments made to any lower-tier subcontractors. Subcontractors are required to confirm receipt of payment.

The tracking of subcontractor prompt payment is conducted using the Signet™ application. Signet™ is a third-party service, supported by the software vendor, which is used by both Prime and Subcontractors. Signet™ is a reporting tool only and does not process financial transactions. ARDOT does not provide direct technical support for Signet™. Information about Signet™ may be found at https://signet-help.zendesk.com and by clicking the Signet™ tab.

Signet™ shall be required for use on this construction contract.

Upon completion of the first payment estimate on the contract Signet™ will automatically notify the Contractor via email prompting registration in Signet™ for that contract. The Prime Contractor will be required to pay a one-time, fixed fee of $1,100 for this contract. Payment will be made to the Signet™ vendor. This will activate use of Signet™ for the Prime and all Subcontractors for the duration of that contract, regardless of contract value, number of subcontractors, contract duration, or number of payments reported. Subcontractors will not be charged any fee to register for contracts.

After each estimate, the Prime Contractor will report remitted payment to subcontractors in Signet™. This will trigger notification to each subcontractor via email requesting verification of the reported payment. The subcontractor will be given the opportunity to register with Signet™ at that time (for no cost).

The Prime or Subcontractor reporting payment must report the following information in Signet™:

- The name of the subcontractor or second-tier subcontractor receiving payment.
- The dollar amount of the payment made to the subcontractor or second-tier subcontractor.
- The date the payment was made to the subcontractor or second-tier subcontractor.
- Any retainage, which is only permitted if it was included in the individual subcontract when it was submitted to the Department for acknowledgement.
- The DBE Function performed for this payment (if the subcontractor/second-tier subcontractor is a DBE).
- Other information required by Signet™.

The contractor must report the return of retainage or other withholdings in separate, standalone payment entries (separate from routine, planned progress payment estimates).

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DOCUMENTATION OF PAYMENTS MADE – PROMPT PAYMENT (SIGNET)

In the event that no subcontract work is included in a payment estimate, such that no payment is due to any subcontractors, the Prime Contractor shall mark the payment complete within Signet™, and no other payments are required to be reported for that estimate.

Subcontractors must verify in the Signet™ application each payment reported by a payer within 10 days of the payment being reported by the payer. This verification includes whether the payment was received and, if so, whether it was as expected.

Basis of Payment. The cost of registration for the Signet™ application will be reimbursed by the Department using a line item in the contract. The reimbursement will be set to match the current cost of the registration fee for Signet™ and will not be bid by the contractor. All costs for usage, time, labor, or other costs for reporting payments to subcontractors through the Signet™ application will be considered incidental and no direct payment will be made for these.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

BIDDING REQUIREMENTS AND CONDITIONS

Section 102 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The fourth sentence of the second paragraph of **Subsection 102.01** is hereby deleted, and the following substituted therefore:

> Prospective bidders may file a questionnaire at any time; however, prospective bidders will not be given authorization to submit a proposal unless a rating has been extended based on an acceptable questionnaire.

The following paragraph has been added to **Subsection 102.01**.

> A contractor with common officers/owners/partners of any firm, partnerships, joint ventures, or corporations that is seeking prequalification, has been prequalified, or has entered into a previous or current contract with the Commission may have the prequalification denied, limited, or revoked for the reasons listed in Subsection 102.04(a)-(m).

The last paragraph of **Subsection 102.01** is hereby deleted.

The second sentence of **Subsection 102.02** is hereby deleted, and the following substituted therefore:

> The Notice to Contractors will contain a description of the proposed work, and information regarding access to proposal documents, plans, specifications, and the amount and nature of the proposal guaranty.

Subsection 102.03 is hereby deleted, renamed **Contents of Proposal Documents**, and the following substituted therefore:

> The proposal documents will state the location and description of the contemplated construction and will show the estimate of the various quantities and kinds of work to be performed or materials to be furnished, and will have a schedule of items. The proposal documents will state the time in which the work must be completed, the amount of the proposal guaranty, and the date and time of the letting of work. The documents will also include any special provisions or requirements that vary from or are not contained in the standard specifications.
>
> All forms included in the proposal documents are considered a part thereof. The plans, specifications, and other documents designated in the proposal documents will be considered a part of the proposal whether included or not.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

BIDDING REQUIREMENTS AND CONDITIONS

The first through fourth paragraphs of **Subsection 102.04** are hereby deleted, and the following substituted therefore:

> To become an eligible bidder, prospective bidders must be registered to bid in Arkansas with Bid Express. Prospective bidders must also contact the Program Management Division at (501) 569-2261 during regular business hours between the date the project is advertised and 4:30 p.m. on the day prior to the scheduled bid opening to request to become eligible to bid specific projects. Only prequalified contractors or their authorized representative may request to become an eligible bidder.
>
> If the prospective bidder's prequalification rating is not "unlimited", the bidder shall file a certification with the Department citing all contracts in force and the unfinished value of such work. A prospective bidder will not be allowed to submit a proposal until a certification for the current bidding period is on file and the amount of work the contractor may be allowed to undertake is determined. The contractor's prequalification rating, less the unfinished value of all contracts in force, will determine the amount of additional work that the contractor may be allowed to undertake. A contractor will not be allowed to submit a proposal on an individual project for which the estimated cost is more than the amount that the contractor may be allowed to undertake, but the contractor will be allowed to submit a proposal on more than one project, providing that the estimated cost of each project is not more than the amount that the contractor may be allowed to undertake. In the event a contractor submits a low bid on more than one project and the aggregate amount is greater than the amount the contractor may be allowed to undertake, the Commission will exercise its discretion in the award of a particular project or projects.
>
> A charge will be assessed for authorization to submit a proposal, paper copies of the proposal documents, and plans issued. These services are provided during regular business hours until 4:30 p.m. on the day prior to the scheduled bid opening at the Arkansas Department of Transportation, 10324 Interstate 30, Little Rock, Arkansas 72209, (501) 569-2261. Payment shall be made at the time services are provided or upon receipt of statement therefore. No refund will be allowed for bids not submitted or for plans or proposal documents returned.

The second sentence of the first paragraph of **Subsection 102.06** is hereby deleted, and the following substituted therefore:

> The bidder is expected to examine carefully the site of the proposed work, the proposal documents, plans, specifications, supplemental specifications, and special provisions before submitting a proposal.

The first paragraph of **Subsection 102.07** is hereby deleted, and the following substituted therefore:

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

BIDDING REQUIREMENTS AND CONDITIONS

> The proposal shall only be submitted through the internet bidding service, Bid Express. The bidder shall specify a unit price in figures for each pay item for which a quantity is given. A unit price of "zero" ($0.00) is a valid price and will be considered. A blank unit price is not considered valid. The unit bid price should not be carried beyond 1 cent ($0.01). Any figures on the unit bid price beyond 1 cent will be dropped.

The second and third paragraphs of **Subsection 102.07** are hereby deleted.

The fifth paragraph of **Subsection 102.07** is hereby deleted, and the following substituted therefore:

> The bidder's proposal must be submitted with a digital signature containing the name of the individual, one or more members of the partnership, one or more members or officers of each firm representing a joint venture, or one or more officers of a corporation, or by an agent of the Contractor legally qualified and acceptable to the Department.

The sixth paragraph of **Subsection 102.07** is hereby deleted, and the following substituted therefore:

> If the proposal is submitted with a digital signature of any person who is not listed in the bidder's Prequalification Questionnaire (Questionnaire Form) as the individual, as a partner of a partnership, or as an officer of a corporation, authorization for such submittal should be on file with the Department prior to the download of bids. This authorization shall be made before the downloading of bids and be in the form of a Power of Attorney duly executed and signed by an official with power to constitute such authority.

The last sentence of the seventh paragraph of **Subsection 102.07** is hereby deleted, and the following substituted therefore:

> Those items of Asphalt Binder that are subject to a minimum bid price will bear the note "(Minimum bid price is $120.00 per ton)" within the Schedule of Items of the proposal documents.

The first sentence of the ninth paragraph of **Subsection 102.07** is hereby deleted, and the following substituted therefore:

> The proposal documents for all federal aid projects will contain a bidders list.

The last sentence of the ninth paragraph of **Subsection 102.07** is hereby deleted, and the following substituted therefore:

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

BIDDING REQUIREMENTS AND CONDITIONS

The information provided will not be used for contract awarding purposes but must be provided before the Contractor will be given authorization to submit proposals for future lettings.

Subsection 102.08 Irregular Proposals is hereby deleted, and the following substituted therefore:

(a) Proposals will be considered irregular and will be rejected for the following reasons:

(1) If the proposal does not contain a unit price for each pay item listed except in the case of authorized alternate pay items.

(2) If the proposal is not digitally signed by an authorized representative of the firm.

(3) If the proposal is not accompanied by the proper proposal guaranty.

(4) If a proposal is received from an individual, firm, partnership, or corporation with an interest, as principal, in another proposal for the same project.

(5) If the proposal is not accompanied by the Certification to Submit DBE Participation.

(b) Proposals will be considered irregular and may be rejected for the following reasons:

(1) If the proposal is not accompanied by a bid schedule and bid schedule narrative as required in the proposal documents.

(2) Unbalanced proposals in which the prices for some items are out of proportion to the reasonable costs representative of those items.

(3) If there are irregularities of any kind that may tend to make the proposal incomplete, indefinite, or ambiguous as to its meaning.

The first sentence of **Subsection 102.09** is hereby deleted and the following substituted therefore:

No proposal will be considered by the Commission unless a guaranty in the form of a bank draft, certified check, or cashier's check drawn on a solvent bank or trust company, or a bidder's paper bond executed by an approved surety company has been received by the Program Management Division prior to the download of bids.

The following paragraph is hereby added after the first paragraph of **Subsection 102.09**:

Electronic bid bonds are allowed. The prospective bidder should verify their bid bond in their proposal prior to submission.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

BIDDING REQUIREMENTS AND CONDITIONS

Subsection 102.10 is hereby deleted and the following substituted therefore:

The proposal shall only be submitted through the internet bidding service, Bid Express.

Subsection 102.11 is hereby deleted, and the following substituted therefore:

A bidder may withdraw or modify a proposal after it has been submitted to Bid Express, up to the time set for the deadline for proposals to be received. A proposal may also be withdrawn if the Commission fails to make an award within 40 calendar days after the date of downloading.

Subsection 102.12 is hereby deleted, renamed **Downloading of Proposals**, and the following substituted therefore:

Proposals will be downloaded and then posted on the Department's website at the time and place indicated in the Notice to Contractors.

The last sentence of **Subsection 102.15** is hereby deleted, and the following substituted therefore:

In any case, the prospective bidders will be contacted prior to the download of bids.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

MANDATORY ELECTRONIC CONTRACT

Paper Contract Documents and Forms will not be accepted.

The Department will only accept and execute an electronic contract for this project through Doc Express, a paperless contracting system. Prospective bidders will need to contact Doc Express to set up an account prior to the bid opening date. The toll-free phone number for Doc Express is 1-888-352-2439 and their website address is www.docexpress.com.

Section 103 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows.

The first sentence of **Subsection 103.06(a)** is hereby deleted, and the following substituted therefore:

The Contract shall be electronically signed by the successful bidder and electronically submitted to the Program Management Division, Construction Contract Procurement Section, together with the required bonds and proof of liability insurance, within 10 business days after the notice of award has been issued.

Subsection 103.08(d)(3)d. is hereby deleted, and the following substituted therefore:

Documentation of the bidder's commitment to use a DBE subcontractor whose participation it submits to meet a contract goal; and

Subsection 103.08(d)(3)e. is hereby deleted, and the following substituted therefore:

Document confirmation from the DBE that it is participating in the contract as provided in the Contractor's commitment.

Subsection 103.08(d)(5) is hereby deleted, and the following substituted therefore:

The preceding information shall be submitted directly to the Arkansas Department of Transportation, Program Management Division, via Doc Express.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

MANDATORY ELECTRONIC DOCUMENT SUBMITTAL

Paper Document Submittals will not be accepted.

The Department will only accept electronically-submitted documents for consideration on this project. All correspondence and submittals to the Department shall be submitted through Doc Express, a paperless contracting system. When signed originals are required, the original shall be the document uploaded to Doc Express and the signature shall be the electronic signature applied through Doc Express. The Contractor shall use the same organizational account for project documentation as used to fulfill the requirements of the Mandatory Electronic Contract Special Provision. The toll-free phone number for Doc Express is 1-888-352-2439 and their website address is www.docexpress.com.

Any reference in the Standard Specifications to document submittal in writing or by U.S. Mail, facsimile, or in person is hereby amended to require that such documents be submitted using Doc Express with the following exceptions:

- Material delivery tickets which are used for payment or for field verification shall be submitted on paper as required by the Standard Specifications for Highway Construction, Edition of 2014.
- Any document with specific submittal requirements in state and/or federal law or federal regulations that conflict with the requirements of this Special Provision shall be submitted in accordance with such state and/or federal law or federal regulations.

A user guide is available on the Department's web page to assist Contractors with the use of Doc Express. The "Contractor Guide to Using Doc Express" is available on the Department's web page at https://ardot.gov/divisions/construction/doc-express/.

The Contractor may provide access for subcontractors to view and submit items in Doc Express by following the instructions provided in the "Contractor Guide to Using Doc Express". Once an organizational account is activated and the Contractor provides access to the contract, a subcontractor may submit documents to the Contractor in Doc Express by uploading the electronic documents as directed in the User Guide. Any documents uploaded by the subcontractor must be then retrieved and published by the Contractor within Doc Express for further action by the Engineer. The Engineer will not review or take any actions on any documents submitted by the subcontractor until the document has been appropriately submitted by the Contractor.

Any submittals, documents, subcontracts, proposals, working drawings, or any other items submitted by the Contractor within Doc Express are not considered approved by the Engineer until written notification of the approval is published by the Engineer in the "CON-Correspondence–From Department to Contractor" drawer in Doc Express. Any action taken by the Contractor prior to this notification is taken at the Contractor's own risk.

The Department's System Administration team has no authority to take action on any documents submitted to the system. Access for this team is for management of the application only. Knowledge of any document submitted is not imputed to the Department by the knowledge of Systems Administration.

The requirements of this Special Provision shall supersede the requirements of all other Special Provisions unless such Special Provision includes a stated exception to this Special Provision.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

ASSESSMENT OF WORKING DAYS – MAINTENANCE OF TRAFFIC

DESCRIPTION: To accommodate the off-peak lane closure time limits shown in the contract "Maintenance of Traffic" Special Provision, the assessment of Calendar Days or Working Days will be based upon the same conditions as a normal Working Day.

For Calendar Day or Working Day projects, the Contractor shall be permitted to begin work on Sunday evening when the allowable lane closure period begins. Sunday evening shall be the allowable off-peak lane closure time defined in the contract "Maintenance of Traffic" Special Provision but not prior to 6:00 p.m. On Working Day projects, time will not be assessed for Sunday. No other work will be allowed on Sunday unless an emergency is declared by the Department.

If the Contractor elects to work Friday and complete work on Saturday in accordance with the contract "Maintenance of Traffic" Special Provision, time will be assessed as appropriate for Saturday.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

FLEXIBLE BEGINNING OF WORK – CALENDAR DAY CONTRACT

DESCRIPTION: Section 108, Prosecution and Progress, of the Standard Specifications for Highway Construction, 2014 Edition, is hereby amended as follows to allow a 180-day allowance before time charges begin. The 180-calendar day allowance is to allow the Contractor to start field measurement verification of needed repairs and develop shop drawings as allowed in the "Work Allowed Prior to Issuance of the Work Order" SP.

Subsection 108.02 (b) Work Order:

(1) The first paragraph is hereby deleted.

(2) The second paragraph is hereby deleted and replaced with the "Work Allowed Prior to Issuance of the Work Order" SP in addition to the following requirements:

The Contractor may elect to erect advance warning signs prior to the issuance of the Work Order to perform preliminary work as permitted in the "Work Allowed Prior to Issuance of Work Order" SP provided that:

a. The signs are covered and kept properly covered until the work begins. Failure to cover the signs after initial installation will constitute the Contractor's intent to begin work and time charges will be assessed by the Engineer starting on that date. The sign covering shall cover the face completely and prevent the message from being read during both day and night conditions and shall not damage the sheeting face.

b. The Engineer shall be the authority for the establishment of the official begin and ending dates for the 180-calendar day allowance.

c. The Contractor may temporarily uncover the installed signs if needed to verify structural steel measurement and other preliminary work that is required before construction begins. Any temporary lane closure required for this work shall be coordinated with the Engineer with a minimum of five business days' notice. Time charges will not be assessed for this preliminary work provided contract work, other than work permitted by the "Work Allowed Prior to Issuance of Work Order" SP, is not being performed.

d. The Contractor shall be responsible to provide for delivery to ARDOT for execution of the contract, the required contract bonds properly executed on behalf of the Contractor and surety, which shall constitute the Contractor's authority to begin the contract work after the effective date of the Work Order.

e. The Contractor shall provide a minimum 72-hour advance notice of intent to begin work date to the Engineer before the signs are installed.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

FLEXIBLE BEGINNING OF WORK – CALENDAR DAY CONTRACT

f. In the event of cancellation of the project award, the Contractor shall at the Contractor's expense shall do such work as necessary:
   i. To leave the site in a neat condition to the satisfaction of the Engineer and
   ii. With the understanding that any work performed before the Work Order has been issued will be at the Contractor's own expense if the contract is cancelled.

g. All work listed in the "Work Allowed Prior to the Work Order" Special Provision will be considered authorized work and will be paid as provided in the contract. Payment for field verified measurements will be included in the Contractor's bid for the pay item Section 821 – "Modification of Existing Bridge Structure (Bridge No. 02899)".

h. The Contractor shall not be entitled to any additional compensation or an extension of time for any delay, hinderance, or interference that limits the Contractor's ability to work within the 180-calendar day allowance after the official beginning date is established by the Engineer.

(3) a**. Fixed Completion Date and b. Working Day Contract** is hereby deleted and the following is substituted therefore:

a. **Calendar Day Contract:** Unless the Contractor is otherwise advised in writing, the Work Order for a calendar day contract shall become effective on the fifteenth (15^{th}) calendar day following the execution of the Contract by ARDOT. Should the effective date fall on Sunday, a legal holiday designated in Subsection 101.01 (c), Monday following a holiday on Sunday, or Friday preceding a holiday on Saturday, the effective date shall be the next workday. The written Work Order from the Engineer will follow with the effective date being as specified.

b. The assessment of contract time will commence when the Contractor begins contract work other that that allowed by the "Work Allowed Prior to Issuance of the Work Order" SP or no later than 180 calendar days after the issuance of the Work Order. The Contractor will submit written notification to the Engineer five days prior to commencing work.

c. A "Calendar Day" is defined as any day on the calendar from 12:00 am to 11:59 pm. Weekends and holidays are counted as calendar days. Weather days are counted as calendar days unless the event is defined in the "Prosecution and Progress with Bid Schedule" Special Provision with provision for additional time requests by the Contractor to be approved by the Engineer.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

FLEXIBLE BEGINNING OF WORK – CALENDAR DAY CONTRACT

(4) c. Subsection 108.02(d) is hereby deleted, and the following is substituted therefore:

> **(d) Allocation of Department Resources:** ARDOT allocates its resources to a contract based on the total time allowed in the Contract. However, should the Contractor propose an accelerated work schedule, ARDOT will provide the necessary resources to meet the demands of the accelerated work schedule. Utility and/or Right of Way (ROW) related delays are exempt from impact claims for the first one hundred and eighty (180) days after the Contractor begins work as determined by the Engineer. No additional compensation or extension of time will be allowed if the Contractor is unable to meet the accelerated schedule due to the unavailability of ARDOT's resources or for other reasons beyond ARDOT's control.

Subsection 108.02(c) is hereby deleted.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

LIQUIDATED DAMAGES PROCEDURE FOR BID LETTINGS

Department Standard Specification **Section 102.04 and Supplemental Specification 102-2** state that the Department reserves the right to refuse to issue, accept, or consider a proposal:

> "If the prospective bidder is the Contractor on a current Contract with the Commission on which Liquidated Damages are being assessed, and there are no pending time extensions warranted to remove the project from Liquidated Damages."

If the prospective bidder goes into liquidated damages on a current Contract with the Commission during the advertisement period for a letting, the Contractor will be notified seven business days prior to the letting that they will not be allowed to bid in the upcoming letting. This notification will be officially transmitted through Doc Express for the project in liquidated damages and via email.

Upon notification that they will not be allowed to bid in the upcoming letting, the Contractor will be provided an opportunity to request a reconsideration of this decision. This request must be transmitted in the form of a letter through Doc Express and via email to the Department for review within two (2) business days of receipt. The Department will review the reconsideration request and render a decision no later than the Friday prior to the letting.

Please note, a bid may be withdrawn at any time prior to the time specified for the bid letting. If a Contractor has been notified that they will not be allowed to bid, and they do not withdraw their bid, the bid will be considered invalid and rejected.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB 110812

WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER

DESCRIPTION: This Special Provision will replace SS-108-2 and hereby amend **Section 108** of the Standard Specifications for Highway Construction, 2014 Edition as follows:

GENERAL: Subsection 108.02(b)(2) is hereby deleted, and the following is substituted therefore:

The delivery to the Department for execution of the Contract and bonds properly executed on behalf of the Contractor and surety and the minimum 72 hours advance notice as required above shall constitute the Contractor's authority to begin the following items of work:

- Mobilization
- To start required field verified measurements of existing steel components on Bridge No. 02899 that will be repaired or replaced in preparation of shop drawings and other required submissions, which will be paid as part of the price bid for “Modification of Existing Bridge Structure (Bridge No. 02899)” after the Work Order is issued with the approval of the Engineer. Pressure washing to remove debris will be allowed to clean areas to improve field measurement.
- Erection of advance warning signs.
- Installation of netting to prevent nesting of migratory birds in accordance with applicable Special Provisions (if included in the Contract) or with written permission from the Engineer in accordance with the requirements of the “Nesting of Migratory Birds” Special Provision.
- Off-site area approval process per Section 107.10(c). The Contractor can gather information on the availability and delivery of lightweight aggregate material, Low Carbon Chromium Steel Bars, electrical and camera products as examples. The Contractor shall not order any materials or products until the Work Order has been issued by ARDOT.

Such advance work shall be subject to the Contractor's assumption of the risk of cancellation of the award and the following:

- The Contractor shall, on commencing such operations, take all precautions required for public safety and shall observe all the provisions in the Contract.
- In the event of cancellation of the award, the Contractor shall at Contractor expense do such work as necessary to leave the site in a neat condition to the satisfaction of the Engineer.
- In the event of cancellation of the award, all work performed shall be deemed to be at the Contractor's expense; and
- All work done under this subsection in accordance with the Contract before its execution by the Commission will, when the Contract is executed, be considered authorized work and will be paid for as provided in the Contract.

Unless otherwise notified in writing, calendar day contract time will not be assessed for work performed prior to the Work Order. Refer to the “Flexible Beginning of Work – Calendar Day Contract” Special Provision for details of the 180-calendar-day allowance before contract time begins.

No payments will be made prior to the date established by the Engineer under Subsection 109.07, which date will be after the effective date of a Work Order.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB 110812

WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER

The Contractor shall not be entitled to any additional compensation or an extension of time for any delay, hindrance, or interference caused by or attributable to commencement of work before the effective date of a Work Order or for the 180-calendar-day allowance before contract time will begin.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB 110812

NESTING SITES OF MIGRATORY BIRDS

DESCRIPTION: All structures on this project, including new, temporary, and existing bridges and/or culverts, may be the nesting sites of migratory birds. These birds include, but are not limited to, swallows and phoebes. The birds and their habitat are protected under the Migratory Bird Treaty Act. Demolition of or construction activities on bridge and culvert structures that might disrupt egg incubation or feeding and sheltering of young migratory birds shall not occur without written permission from the Engineer.
If construction is planned on bridges or culverts when migratory birds are actively building nests, the Contractor shall utilize Option 1 and/or 2 below to deter birds from nesting to allow construction activities to proceed.
CONSTRUCTION METHODS: Restrictions to the Contractor's activities shall include, but are not limited to, the following:

1) Demolition of or construction activities on structures (i.e. sand blasting, painting, etc.) will not be permitted when migratory bird nests are considered active without written permission from the Engineer. This normally occurs in Arkansas from March 1 to August 31 but may occur outside of those dates during unusual weather events. The Contractor shall submit to the Engineer details for all work proposed to be performed on the structure from March 1 to August 31, or while nests are active with eggs or young. A determination will be made by the Engineer within 10 business days concerning the possible impacts of the work and will then accept or reject the Contractor's proposal.
2) OPTION 1 - The Contractor shall prevent birds from nesting by erecting netting at any time outside of the active nesting season (generally after August 31 to March 1). The Contractor may be allowed to erect netting during the active nesting season if no active nest is present on the bridge or structure. Net openings shall be ½ inch or smaller after installation. Birds that nest despite prevention efforts shall not be removed or disturbed. Netting shall be installed securely and maintained in such a manner that it will not pose a safety hazard.
3) OPTION 2 – The Contractor may remove inactive nests (those with no eggs or young) via hydro-cleaning or scraping at any time outside of the nesting season (generally after August 31 to March 1). The Contractor will be allowed to scrape or hydro-clean daily to remove any mud or debris placed on the structure by birds attempting to nest, as long as there are no eggs or young in the nests or partial nests. Adult birds cannot be harmed, injured, or harassed in any way except by removal of the unoccupied nests. Exclusionary netting does not have to be used if the Contractor agrees to be diligent and make sure no birds are allowed to nest on the structure.
4) No other methods of deterrence will be permitted without written approval of the Engineer.
5) Migratory birds can build nests very quickly, specifically, in less than two days. If the Contractor allows even one nest on the structure to become active (containing eggs or young birds), they shall be required to stop construction/demolition until the young have voluntarily left the nest (up to six weeks), or get approval through the Engineer from the ARDOT Environmental Division to work around the birds in a manner that does not disrupt incubation, feeding, and/or sheltering of the birds.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB 110812

NESTING SITES OF MIGRATORY BIRDS

6) If no birds are nesting on or in the bridge or culvert structures between March 1 and August 31, a request may be made to the Engineer to allow demolition or construction to proceed. The Engineer will make the final determination concerning the presence or absence of nesting migratory birds within ten business days and will accept or reject the Contractor's proposal concerning the demolition or construction.

CONTRACTOR NEGLIGENCE: The Contractor will be assessed the amount of any and all fines and penalties assessed against and costs incurred by the Department which are the result of the Contractor's failure to comply with this Special Provision. The Department will not be responsible for any delays or costs due to the Contractor's failure to comply with this special provision. The Contractor will not be granted additional compensation or contract time due to noncompliance.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT: All costs incurred in complying with this Special Provision will not be measured or paid for separately but will be considered included in the contract unit prices bid for other items of the contract.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

COMPACTED EMBANKMENT

DESCRIPTION: Section 210, Excavation and Embankment, Subsection 210.02 (b) Acceptance Testing, paragraph 2 of the Standard Specificationf for Highway Construction, 2014 Edition is deleted and replaced with the following:

Before the any material is placed, the Contractor shall split a sample with the Engineer for verification that the proposed material meets the requirements specified within this special provision. The minimum frequency of acceptance testing by the Contractor shall be one test for density, moisture, PI, and LL per **100 cubic yards** of embankment placed. One test for density and moisture shall be performed on each lift of material placed. The location will be randomly selected by the Engineer using AHTD 465. The results of all tests shall be at or above the minimum required density and the moisture content should be near the optimum.

Subsection 210.11, Compacted Embankment is amended to add the following material requirements:

Compacted Embankment materials shall be either a soil classified CH or CL in accordance with current version of ASTM D2487. All embankment material to backfill the west abutment wall of Bridge No. 02899 shall be from one source and of the same soil classification.

Soil classified as CL shall be a soil that is an inorganic clay with low to medium plasticity meeting the following requirements:

$$PI > 10$$
$$LL < 50$$

Soil classified as CH shall be a soil that is an inorganic clay with high plasticity meeting the following requirements:

$$PI > 25$$
$$LL > 50$$

Subsection 210.13 Basis of Payment (c) is hereby amended to include the following:

The requirements of this special provision shall be included the contract unit price bid per cubid yard for Compacted Embankment and will be full compensation for all costs involved in fulfilling the above amended requirements.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

TRENCHING AND SHOULDER PREPARATION FOR TEMPORARY WIDENING

Section 215 Trenching and Shoulder Preparation of the Standard Specifications, Edition of 2014, is hereby deleted and the following is substituted therefor:

215.01 DESCRIPTION: This item shall consist of trenching, scarifying, blading, compacting, and otherwise preparing the existing shoulder for asphalt pavement or Portland Cement Concrete pavement widening within the limits shown on the plans and according to these specifications.

215.02 CONSTRUCTION REQUIREMENTS: The existing aggregate base course and bituminous surfacing shall be scarified and trenched to the width and depth shown on the plans or as directed by the Engineer. Any damage to the shoulder or pavement that is to remain shall be repaired as directed by the Engineer at no cost to the Department.

After the trench has been excavated to grade, the bottom of the trench shall be loosened to a minimum depth of 6” (150 mm) below the finished elevation, the entire area within the limits of the trench processed, the material brought within the range of optimum moisture content, compacted, and stabilized to meet the requirements of Subsection 210.10. The Contractor shall perform quality control and acceptance testing in accordance with Subsection 212.02, except that the minimum frequency of acceptance testing for density and moisture shall be one test per each ½ mile (0.8 km) of trench length, regardless of trench width. For trench sections less than ½ mile (0.8 km) in length, a minimum of one test will be taken per continuous trench unless waived by the Engineer after stability is achieved. The material will be considered stable when it will not rut and/or pump under construction operations.

Excavated or excess materials resulting from the operations of trenching and shoulder preparation shall be disposed of as approved by the Engineer. Suitable excess material from the trenching operation may be used as embankment material or placed on the slopes with the approval of the Engineer.

215.03 METHOD OF MEASUREMENT: Trenching and Shoulder Preparation will be measured by the 100-foot (100 m) survey station measured along the centerline of each set of lanes. This measurement will be made to the nearest foot (meter). Separate measurements will be made for the inside and outside shoulders if this work is required on both sides of the lane.

215.04 BASIS OF PAYMENT: Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per station (metric station) for Trenching and Shoulder Preparation, which price shall be full compensation for trenching, scarifying, and spreading the material over the slopes; for disposing of the excess material; for recompacting; for performing quality control and acceptance sampling and testing; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Trenching and Shoulder Preparation	Station (Metric Station)

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES

Division 400 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The eighth and tenth bullet within the first paragraph of **Subsection 404.01, Design of Asphalt Mixtures. (a) General** is hereby deleted and the following added:

- A one-gallon sample of performance grade asphalt binder to be used in all Section 405 Asphalt Concrete Hot Mix Base Course and Section 406 Asphalt Concrete Hot Mix Binder Course mix designs.
- Five blended aggregate samples for all Section 405 Asphalt Concrete Hot Mix Base Course and Section 406 Asphalt Concrete Hot Mix Binder Course mix designs.
- A two-gallon sample of performance grade asphalt binder to be used in all Section 407 Asphalt Concrete Hot Mix Surface Course mix designs.
- Ten blended aggregate samples for all Section 407 Asphalt Concrete Hot Mix Surface Course mix designs.

The last sentence of the last paragraph of **Subsection 404.01 Design of Asphalt Mixtures. (a) General** is hereby deleted and the following substituted therefor:

At least fifteen (15) business days shall be allowed for the review of the mix design.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS

Division 106 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is hereby added to **Subsection 106.04, Acceptance of Materials:**
All ACHM Contractor Acceptance Tests shall be signed by the technician and submitted electronically through Doc Express in pdf format, and a signed paper copy be given to the ARDOT plant inspector after the completion of each sublot.
The ACHM Microsoft Excel Spreadsheet for Contractors/Suppliers is the required form for documentation and can be downloaded from the following website:
https://ardot.gov/divisions/construction/construction-information/for-use-on-feb-2024-letting-and-later-achm-spreadsheet/
To download this file, follow the instructions on the page linked above. Use of this file requires Microsoft Excel.
Any questions or issues arising from the use of this file should be referred to the Resident Engineer.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

PRICE ADJUSTMENT FOR ASPHALT BINDER

A price adjustment clause is included in this Contract to provide additional compensation to the Contractor or a credit to the Department for fluctuations in asphalt binder prices. This price adjustment is dependent upon a change in the average price of asphalt binder which results in an increase or decrease in the price of products utilized on this project.

PAYMENT: Payment will be made to the Contractor for monthly fluctuation in the price of asphalt binder used in performing the applicable items of Asphalt Concrete Hot Mix and Ultrathin Bonded Wearing Course work as listed in the table below when the asphalt binder price fluctuates from the base price defined below. Payment may be positive, negative, or nonexistent depending on the circumstances. Payments or deductions for the asphalt binder price adjustment will be included in the Contractors current estimates, and the payment or deduction authorized for each estimate will be based upon the quantities for applicable items of work.

The Asphalt Binder Price Adjustment will be a dollar amount paid as compensation to the Contractor, or as a credit to the Department as reflected on the Current (or Final) Estimate Summary Report as Payment Adjustments.

ASPHALT BINDER PRICE ADJUSTMENT (ABPA): The Asphalt Binder Price Adjustment (ABPA) for the current estimate will be computed according to the following formula:

$$ABPA = Q \times D \times (IQP / 100)$$

Where

ABPA = Asphalt binder price adjustment, in dollars;
Q = Quantities paid for the applicable items on the current estimate; tons of mix for ACHM items or square yards for Ultrathin Bonded Wearing Course
D = Allowable price differential, in dollars;
IQP = Item Quantity Percent, Quantity of Indexed Material per unit of the applicable item on the current estimate.

The above formula will be applied to each individual payment of the applicable item. When the Current (or Final) estimate is generated, the sum of these individual adjustments will be included as a Payment Adjustment.

Applicable Items of Work		
ITEM OF WORK	SPECIFICATION NUMBER	ITEM QUANTITY PERCENT
Asphalt Binder in ACHM Base Course	405	100
Asphalt Binder in ACHM Binder Course	406	100
Asphalt Binder in ACHM Surface Course	407	100
Ultrathin Bonded Wearing Course (Type B)	SP	5.5
Ultrathin Bonded Wearing Course (Type C)	SP	5.4

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

PRICE ADJUSTMENT FOR ASPHALT BINDER

The terms of this Special Provision will apply only to the items listed in this Special Provision table above. No other items on the contract will be subject to the terms of this Special Provision.

The allowable price differential, "D", for the current estimate will be computed according to the following formula, using the appropriate binder grades:

$$D = P - P_{(b)}$$

P, the asphalt binder current price in dollars per ton, is the Monthly Asphalt Binder Price Index for the month in which the payment entry is entered.

$P_{(b)}$, the asphalt binder base price in dollars per ton, is the Monthly Asphalt Binder Price Index for the month in which the bids for the work were received.

ASPHALT BINDER INDEX DETERMINATION:

PG64-22 Binders. The Monthly Asphalt Binder Price Index for PG64-22 binders will be determined by calculating the average for performance-graded binder using the Selling Price of PG 64-22 paving grade. The monthly asphalt binder price will be an average of five asphalt binder prices. The prices will be furnished by the four largest asphalt binder suppliers in the State of Arkansas as determined by the previous calendar year. For an asphalt supplier to be included in the asphalt binder price index they must supply at least ten percent of the asphalt binder in Arkansas. The final component in the asphalt binder price index will be the Asphalt Weekly Monitor® furnished by Poten & Partners, Inc. The issue of the Asphalt Weekly Monitor® used will be for the last full week in the previous month received by the Department prior to the first day of the index month. The four largest suppliers included in the asphalt binder price index shall furnish the Department with their average price on the Thursday before the Friday of the last full week of the month. If any supplier fails to submit a price by this deadline, that supplier's price will not be included in the asphalt binder price index for that month.

PG70-22 and PG76-22 Binders (including Asphalt Binder in Ultrathin Bonded Wearing Course). The monthly Asphalt Binder Price Index for PG70-22 and PG76-22 binders (including asphalt binder in Ultrathin Bonded Wearing Course) will be determined by the same method above, except that the price from the Asphalt Weekly Monitor® will not be used in the calculation of the monthly average binder price. The monthly asphalt binder price for PG70-22 and PG76-22 binders will be calculated using the average of the prices supplied by the four largest binder suppliers in the State for those grades.

SUPPLEMENTAL ITEMS SUBJECT TO ADJUSTMENT: Items included in the contract that are listed in the table above are subject to adjustment in accordance with this provision, regardless of any amount of overrun to the plan quantity. Any new items of work added to the Contract by supplemental agreement that are listed in the table above will be subject to the asphalt binder price adjustments in accordance with this provision. The base asphalt binder

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PRICE ADJUSTMENT FOR ASPHALT BINDER

price, $P_{(b)}$, for any newly added eligible items will be the same $P_{(b)}$ as the eligible items in the Contract, and the new unit price established by supplemental agreement will be determined accordingly.

VIEWING ASPHALT BINDER PRICE INDEX: Historical asphalt binder price index values will be available in the "Asphalt Binder Index Report" document located on the ARDOT website at

https://ardot.gov/divisions/construction/construction-information/ under Asphalt Binder Information.

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JOB NO. 110812

PRICE ADJUSTMENT FOR FUEL

A price adjustment clause is included in this Contract to provide additional compensation to the Contractor or a credit to the Department for fluctuations in diesel fuel prices. This price adjustment is dependent upon a change in the average price of fuel which results in an increase or decrease in the price of products utilized on this project. For the purposes of this specification, it is assumed that all fuel used is diesel fuel and that the fuel use factors shown in the table below cover all fuel used in delivery to the plant, production, hauling to the job site, placement, and finishing of the items of work shown.

PAYMENT: Payment will be made to the Contractor for monthly fluctuation in the price of diesel fuel used in performing the applicable items as listed in the table below when the diesel fuel price fluctuates from the base price defined below. Payments may be positive, negative, or nonexistent depending on the circumstances. Payments or deductions for the fuel price adjustment will be included in the Contractor's current estimates, and the payment or deduction authorized for each estimate will be based upon the quantities for applicable items of work. Subcontracts should include the payment or deduction of fuel price adjustments on pay items listed in the table below when those items are included in a subcontract.

The Fuel Price Adjustment will be a dollar amount paid as compensation to the Contractor, or as a credit to the Department as reflected on the Current (or Final) Estimate Summary Report as Payment Adjustments.

FUEL PRICE ADJUSTMENT (FPA): The Fuel Price Adjustment (FPA) for the current estimate will be computed according to the following formula:

$$FPA = Q \times F \times D$$

Where

FPA = Fuel price adjustment, in dollars;
Q = Quantities paid for the applicable items on the current estimate,
F = The Fuel Use Factor for the applicable items of work subject to this price adjustment, as listed in the table below,
D = Allowable price differential, in dollars.

The above formula will be applied to each individual payment of the applicable item. When the Current (or Final) estimate is generated, the sum of these individual adjustments will be included as a Payment Adjustment.

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JOB NO. 110812

PRICE ADJUSTMENT FOR FUEL

Fuel Use Factors		
Item of Work	Specification Numbers	Fuel Use Factor Per Unit
Earthwork: (Unclassified Excavation, Compacted Embankment, Selected Material)	210,302	0.34 gal./C.Y.
Soil Stabilization	Special Provision	2.28 gal./ton
Shaping: (Shaping Roadway Section, Subgrade Preparation, Trenching and Shoulder Preparation, Scarifying and Recompacting Shoulders)	213,214,215,216	2.52 gal./Station
Base Course and Stone: (Stone Backfill, Aggregate Base Course, Soil Aggregate in Cement Treated Base Course, Aggregate in Cement Stabilized Crushed Stone Base Course, Mineral Aggregate in Asphalt Surface Treatment	207,303,307,308,309,310,402	0.54 gal./ton
ACHM Paving: (ACHM Base Course, ACHM Binder Course, ACHM Surface Course, Open Graded Asphalt Base Course)	405,406,407,417	2.36 gal./ton
Ultra Thin Bonded Wearing Course (All Types)	Special Provision	2.18 gal./ton
Milling: (Cold Milling Asphalt Pavement, Grinding Portland Cement Concrete Pavement)	412, 510	0.18 gal./S.Y.
PCC Paving: (Portland Cement Concrete Base, Open Graded Portland Cement Concrete Base, Portland Cement Concrete Pavement, High Early Strength Concrete Pavement, Continuously Reinforced Concrete Pavement, Portland Cement Concrete Driveway)	309, 310,501,503,505	0.44 gal./S.Y.
Structural Concrete (Approach Slabs, Approach Gutters, Class B Concrete-Bridge, Class S Concrete-Bridge, Class S(AE) Concrete-Bridge, Seal Concrete-Bridge, Class A Concrete-Roadway, Class S Concrete-Roadway	504, 802	1.75 gal./C.Y.
Flatwork: (Concrete Ditch Paving, Concrete Islands, Concrete Walks, Wheelchair Ramps)	605,632,633,641	0.30 gal./S.Y.

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PRICE ADJUSTMENT FOR FUEL

When the units of measure in this contract for the items of work listed in the table do not correspond with the units shown in the table (i.e. Asphalt Concrete paid by the square yard, etc.), those items will not be subject to the terms of this special provision or any fuel price adjustment.

The allowable price differential, "D", for the current estimate will be computed according to the following formula:

$$D = P - P_{(b)}$$

P, the current fuel price in dollars per gallon, is the Monthly Fuel Price Index for the month in which the payment entry is entered.

$P_{(b)}$, the fuel base price in dollars per gallon, is the Monthly Fuel Price Index for the month in which the bids for the work were received.

FUEL PRICE INDEX DETERMINATION: The Monthly Fuel Price Index will be determined by using the On-Highway retail price for No. 2 Diesel Fuel – ULS (Ultra Low Sulfur), as listed for the US Gulf Coast region on the U.S. Energy Information Administration's website. The value used will be that for either the closest Monday prior to the first calendar day of the index month or the first calendar day of the index month, if that is a Monday.
https://www.eia.gov/opendata/qb.php?sdid=PET.EMD_EPD2DXL0_PTE_R30_DPG.W

SUPPLEMENTAL ITEMS SUBJECT TO ADJUSTMENT: Items included in the contract that are listed in the table above are subject to adjustment in accordance with this provision, regardless of any amount of overrun to the plan quantity. Any new items of work added to the Contract by supplemental agreement that are listed in the table above will be subject to the fuel price adjustments in accordance with this provision. The base fuel price, $P_{(b)}$, for any newly added eligible items will be the same $P_{(b)}$ as the eligible items in the Contract, and the new unit price established by supplemental agreement will be determined accordingly.

VIEWING FUEL PRICE INDEX: Historical fuel price index values will be available in the "Asphalt Binder Index Report" document located on the ARDOT website under Fuel Price Information at https://ardot.gov/divisions/construction/construction-information/.

OPT OUT OPTION: The Contractor, at its own discretion, can choose to opt out of the adjustments for fuel prices determined by this special provision. If the Contractor wishes to utilize this option, an authorized representative of the firm must sign the form on Page 4 of this special provision and submit it to the Department at PMD@ardot.gov prior to the time and date of the bid letting for this project. This representative must currently be listed with the Department as an officer approved to sign contracts in the firm's name.

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PRICE ADJUSTMENT FOR FUEL

OPT OUT OF PRICE ADJUSTMENTS TO FUEL

As an authorized representative of this company, I hereby choose the option to opt out of the price adjustments for fuel for all pay items allowable by this special provision for this contract. By signature of this form, my firm waives all payment adjustments for fuel indexing for the duration of this project and waives any subsequent appeals for additional compensation for fuel price fluctuations.

This action only applies to the construction contract for the job number listed in the header of this document.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

Company Name: _____

NOTE: To opt out, this completed form must be submitted to the Department at PMD@ardot.gov prior to the time and date of the bid letting for this project.

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JOB NO. 110812

ASPHALT MIXTURES WITH PG 76-22 BINDER

Division 400 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added after the last bullet following the first paragraph of **Subsection 404.01(b), Design Requirements:**

- A maximum of 15% Recycled Asphalt Pavement (RAP) material will be permitted in any mix using PG 76-22 asphalt binder provided that the design has a CT_{Index} (ASTM D8225) of ≥ 75.
- RAP will not be allowed in Ultrathin Bonded Wearing Course.

The first sentence of the first paragraph of **Subsection 416.03, Materials and Composition,** is hereby deleted, and the following is substituted therefor:

> If the Contractor elects to use RAP in the job mixture, the mixture may contain no more than 30% RAP for all binder grades except for PG 76-22 which can contain no more than 15%.

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WARM MIX ASPHALT

DESCRIPTION: The Department will allow the use of Warm Mix Asphalt (WMA). All provisions for the production and placement of conventional HMA mixtures as stipulated in Section 410 Construction Requirements and Acceptance of Asphalt Concrete Plant Mix Courses of the Standard Specifications for Highway Construction, Edition 2014, are applicable except as noted below.

Section 410 Construction Requirements and Acceptance of Asphalt Concrete Plant Mix Courses of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Section 410.03: Replace the third sentence with “WMA production temperatures at the plant shall be according to the Contractor’s approved mix design but may be adjusted based on recommendations of the WMA additive/process manufacturer.”

Add the following paragraph: “Implementation of best management practices in the control of aggregate moisture content prior to introduction to the drying or mixing drum is highly recommended in order to achieve the maximum benefit of WMA technology.”

Section 410.07: Replace the last sentence of the first paragraph with “Spreading and finishing temperatures shall be according to the Contractor’s approved mix design, but in no case shall the WMA be placed at a temperature less than 220° F.”

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COLD MILLING MILL & INLAY

Section 412 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added following the last paragraph of **Subsection 412.03 Construction Requirements:**

Unless otherwise designated, the Contractor will receive up to 85% of the millings generated from this project, provided the Contractor utilizes an ACHM mix design which includes RAP on this project.

At least ten business days prior to beginning the cold milling operations, the Contractor shall submit a written request to retain a portion of the reclaimed pavement along with the proposed location of the stockpile"

Measurement of the millings will be by volume. The Engineer may designate a specific area of the roadway where the RAP material can be retained by the Contractor. Unless otherwise noted, this area shall be approximately 85% of the total plan quantity. The Engineer shall consider the designated location in relation to the Contractor's stockpile location and shall make every effort to minimize haul distances. The Contractor may request consideration of specific locations to be retained; however, the final location will be determined by the Engineer. The quantities of millings may be increased or decreased appropriately as the result of a plan quantity that has been revised by an approved change order. Any pavement material removed as part of corrective work by the Contractor shall remain the property of the Contractor.

The contractor shall stockpile a portion of the millings generated on the project for the county in which the project is located or an adjoining county. The amount of material to be stockpiled for the county will be an equivalent amount to that which would be generated by tapered milling or butt joints. The locations and quantity that will be stockpiled for the county will be designated on the plans or provided by the Engineer. The material designated for the county shall be transported and stockpiled at the location(s) shown in the plans.

Unless otherwise shown on the plans, the remaining material generated from the cold milling operations shall be the property of the Department and shall be transported and stockpiled at the location shown on the plans.

The millings shall be stockpiled in a trapezoidal shape, or as directed by the Engineer. No direct payment will be made for loading, hauling, and stockpiling of the milled material. Full payment will be considered included in the unit price bid for Cold Milling Asphalt Pavement.

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JOB NO. 110812

BROADBAND INTERNET SERVICE & FLOOD PLAIN REQUIREMENTS FOR FIELD OFFICE

BROADBAND INTERNET SERVICE REQUIREMENTS:

Section 602 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added after the first paragraph of **Subsection 602.02(b)**:

Broadband Internet Service shall be provided to the field office where available.

The Broadband Internet Service shall be provided with an Internet Protocol (IP) address which is reachable on the global Internet (public) and which is permanently assigned (static). The Contractor is not required to provide this service if an IP address which is both static and public is not available.

If this service is not available at the beginning of a project but becomes available during the life of the project, the Contractor shall provide the service immediately from the date of availability.

The data transfer rate shall be 3 megabits per second (Mbps) download and 500 kilobits per second (kbps) upload, or higher, with latency not to exceed 150 milliseconds. If the broadband Internet service meets all of the requirements of this specification except for the data transfer rate and/or latency, then the best performing available connection shall be provided.

Prior to the selection of the broadband Internet service provider, the Contractor shall submit to the Resident Engineer, in writing, the proposed method for providing broadband Internet service. The Resident Engineer shall review this submittal and respond in writing regarding the acceptability of the proposed method.

The Broadband Internet Service shall be provided with equipment providing one Ethernet port.

FLOOD PLAIN REQUIREMENT: The Field Office shall be installed outside the flood plain locations for both Arkansas and Mississippi.

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JOB NO. 110812

MAINTENANCE OF TRAFFIC

Section 603 Maintenance of Traffic and Temporary Structures of the Standard Specifications, Edition of 2014, is hereby expanded as follows:

The Contractor shall provide additional traffic control through the project as defined below, to always provide a safe and convenient traffic flow, day and night 7 days a week, throughout the limits of the work zone and the approaches thereto.

The Contractor shall assume full responsibility for the safe and efficient movement of traffic through the construction area for the duration of the project. Prior approval by the Engineer shall be required for any alterations of traffic patterns shown on the plans.

All traffic control devices shall be in accordance with the details shown in the plans or on Standard Drawings TC-1, TC-1A, TC-2, TC-3, TC-4, TC-5, and TC-6. The Contractor will be responsible for furnishing, placing, maintaining, relocating, and subsequent removal of all traffic control devices within the limits of the project.

Except where shown on the plans or approved by the Engineer, work on the Hwy. 49 main lanes and bridge shall be accomplished in partial widths to maintain traffic.

The Contractor shall notify the Engineer a minimum of 5 full business days prior to closing a lane. If the Contractor fails to give the proper notification, the lane closure will not be allowed until 5 full business days after the notification was given.

When closing a lane, a Portable Changeable Message Sign shall be placed in advance of the construction signs advising motorists of the lane closure. Portable Changeable Message Signs shall be placed prior to placement of lane closure signing and at locations as directed by the Engineer.

The Contractor shall modify his schedule so that no work will be performed for the time period of the day before the Holiday through the day after the Holiday for the following Legal Holidays:

- New Year’s Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day & the Following Day
- Christmas Eve & Christmas Day

If the Legal Holiday is immediately prior to a weekend or immediately following a weekend, the weekend will be considered a part of the Holiday. The bridge maintenance of traffic 11’-0” lane

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MAINTENANCE OF TRAFFIC

will remain open during holidays with the Portable Traffic Signal System with Countdown-timers left in place and operational. The Contractor shall be responsible for maintaining the operation of the signal system and traffic timer units - countdown during holidays for safe traffic passage in the construction zone.

The Contractor will be permitted, with the approval of the Engineer and with appropriate maintenance of traffic controls in place for safety, to periodically close both lanes of the bridge for 15-minute intervals. The Contractor shall schedule and perform the work, including the placement and removal of traffic control devices, to ensure that a Highway 49 traffic lane is always open, with the aforementioned exceptions, or an accident, or event beyond the Contractor's control.

Special events or occurrences could cause traffic to become congested. When this occurs, the Contractor shall immediately modify the work schedule, working methods, or procedures to lessen the impact of the work on traffic or as directed by the Engineer with the understanding that the Contractor is to maintain one open traffic lane across the bridge and is NOT required to remove in-place maintenance of traffic items.

The Contractor will regulate the access of work vehicles and equipment to the work area while ensuring safety to the traveling public and minimum damage to highway facilities. Any damage to the highway facility or vegetation caused by the Contractor shall be repaired at no cost to the Department. Unless operating within the area closed to traffic, the Contractor's work vehicles shall travel in the direction of the normal traffic flow. Only those vehicles necessary for the work shall be allowed on the bridge in the work zone. All other vehicles, including employee vehicles, shall be parked at a safe location outside the work zone, as approved by the Engineer. The Contractor will be responsible for safely transporting employees to the respective work locations, since the bridge and approaches are approximately a mile in length.

General equipment storage areas or operations centers will be allowed within the limits of the right of way only where permitted by the Engineer. At the end of the workday, equipment shall be either shielded from traffic by an approved positive barrier or placed so it is not within 30 feet of any lane carrying traffic. Storage and placement of equipment and materials under the bridge during the day and at the end of the day shall comply with the "Coordination of Work" Special Provision.

The Contractor shall conduct his operations so that no equipment or personnel shall occupy any portion of the roadway that remains designated for the passage of traffic without the approval of the Engineer and appropriate maintenance of traffic controls in place.

The Contractor is <u>not</u> to use the levee road. The levee road is owned by the Helena Levee District and is not a public facility.

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MAINTENANCE OF TRAFFIC

The Contractor shall refer to all contract special provisions that affect Maintenance of Traffic, such as but not intended to be an all-inclusive list: the “Portable Traffic Signals with Traffic Timer Units – Countdown”, “Motorist Assistance Patrol”, “Wrecker Service”, “Traffic Control Devices in Construction Zones”, and “Portable Camera Trailers”.

CONTRACTOR CONTACT INFORMATION: The Contractor shall provide the Engineer contact telephone numbers and names of the employees that are entrusted to make decisions and implement any required corrective actions concerning traffic or work zone issues. The Traffic Control Supervisor shall be responsible for updating the contact information and providing current telephone numbers for contacts during working hours and for continuously available after-hours on-call contacts.

Refer to the “Traffic Control Supervisor” and “Motorist Assistance Patrol” Special Provisions for additional contact information requirements and responsibilities.

CONTRACTOR SAFETY TRAFFIC PLAN: The Contractor shall be required to create, as an addition to the Construction Personnel Safety Plan, a site-specific Traffic Safety Plan for multiple response scenarios. The Traffic Safety Plan goals will be to have trained personnel prepared to take immediate action to report an issue to the Engineer and “911” in the event of a medical emergency or accident. Flaggers will need to be available to prevent additional bridge blockage with traffic moving on to the bridge.

The proposed Traffic Safety Plan shall include steps to ensure that local Law Enforcement can access the situation in a time sensitive manner. Basic traffic scenarios will need to cooperate with Law Enforcement to assist with congestion and lane blockage. Only Law Enforcement by law can direct traffic.

BASIS OF PAYMENT: There shall be no direct payment for fulfilling the requirements of the Special Provision, but compensation shall be considered included in the price bid for Maintenance of Traffic. Traffic control devices, shown on the plans for payment, will be paid for at the contract unit price for each item involved. All additional traffic control devices beyond the contract amount shall be provided, maintained, and replaced, if necessary, at no cost to the Department.

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JOB NO. 110812

MOTORIST ASSISTANCE PATROL

DESCRIPTION: This item shall consist of providing basic assistance, as described below, to stalled motorists in the Maintenance of Traffic open lane on Hwy. 49 for Job 110812 and assume the Maintenance of Traffic responsibilities described. Motorist Assistance Patrol (MAP) services shall be available when a lane closure is in place until the completion of the project.

SERVICES PROVIDED: The Contractor shall assign, at a minimum, two employees and two Motorist Assistant Patrol vehicles to provide the services in this special provision from both ends of the bridge during any lane closure. The assigned Motorist Assistance Patrol (MAP) employees will ensure that the open 11'-0" maintenance of traffic lane is free of obstructions, provide the vehicle services listed, and report to the Engineer and Traffic Control Supervisor any observed safety issues or needed timing improvements, and be trained flagmen to be utilized as directed by the Traffic Control Supervisor.

The Contractor will provide three general categories of vehicle MAP service:

A. Locating the disabled vehicle and providing the assistance listed below if such assistance will make the vehicle operational.
B. At the motorist's election with the disabled vehicle, move the vehicle to a safe location if immediate assistance, such as adding air to a tire, providing fuel, or charging a battery, will not make the vehicle operational. The motorist assistance vehicle shall be equipped with a tow bar but should not be relied on as the primary means of towing. Wrecker Service is provided in this contract at both ends of the bridge. If the vehicle cannot be easily moved, the Wrecker Service is to be utilized. If at the relocated location, the vehicle cannot be rendered operational with the services listed below, the owner of the vehicle shall be responsible for obtaining the services of a private wrecker service for removal of the vehicle from the site.
C. Assisting motorists and local public agencies or law enforcement authorities as requested concerning an accident or other emergency blocking the designated open maintenance of traffic lane. Such assistance includes protecting the scene of an accident, cleaning up minor debris caused by an accident, and calling and assisting local law enforcement in the event of an accident. If a wrecker service is utilized, the wrecker service will be responsible for removing all debris from the maintenance of traffic open lane per the "Wrecker Service" Special Provision.

As a minimum the following types of assistance will be provided to motorists:

- Provide a maximum of two gallons of gasoline or diesel fuel per occurrence.
- Providing air or change or assist in changing flat tires/inflate low tires
- Fill radiators with water
- Tape hose
- Provide cellular phone for motorists to call for additional assistance if needed
- Jump start stalled vehicles

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MOTORIST ASSISTANCE PATROL

- Move stalled vehicles from travel lanes to a safe location

REQUIRED EQUIPMENT: The Motorist Assistant Patrol **v**ehicles performing this work shall be clearly marked with "Motorist Assistance Patrol" markings and the name and telephone number of the Contractor on the doors of the vehicle. Markings indicating "Motorist Assistance Patrol" shall also be placed in a readable position at the front and rear of the vehicle. The vehicles shall be equipped with a padded push bumper and a tow bar to move vehicles, a loudspeaker with microphone and external speaker, and an amber or green strobe light. The following minimum equipment will be carried on board the vehicles:

- Air Compressor or air tank
- 2 ton (minimum) floor jack
- 8 ton (minimum) bottle jack
- Wheel Chocks
- Cellular telephone and local telephone directory
- Flashlights
- 4 way lug wrenches (standard & metric)
- Booster Cables (25' long)
- Fire Extinguisher
- Electrical and Duct Tape
- Two 5-gallon UL Approved ANSI/ASTM fuel cans (Diesel Fuel and Unleaded Gasoline)
- Water Can (5 gallon)
- Misc. Hand Tools (as required).
- 36" (or longer) pry bar
- First Aid Kit
- Traffic Cones (6 minimum)
- Personal Safety Equipment
- Brooms, shovels, oil absorbent materials
- Tow straps or tow cable
- Safety Flares

PATROL ROUTE: The Motorist Assistance Patrol vehicles shall be continuously available on-site during the closure or partial closure of a travel lane for Job 110812. The Motorist Assistance Patrol vehicles shall not leave the designated project area except:

- For mechanical problems with the patrol vehicle
- To replenish gas, diesel, water cans or other expendable supplies
- If and where directed by the Engineer

One MAP vehicle shall be stationed on the Arkansas side of the project with the other MAP vehicle stationed on the Mississippi side of the project at all times.

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DISABLED VEHICLES: Disabled vehicles shall be cleared from the lane/s with the least delay practical, either under their own power, or by pushing or towing with the Motorist Assistance Patrol vehicle or the project wrecker service. Other than the initial motorist assistance of adding air to a tire or fuel or water or charging the battery to the vehicle to make it operational, no additional repairs shall be attempted until the vehicle is removed from the open Maintenance of Traffic travel lane. The MAP driver will provide a cellular phone for the motorist to use if the vehicle requires towing or additional mechanical services to be removed from the relocated site.

Should a motorist refuse to allow a disabled vehicle to be cleared from the traffic lane, the MAP driver shall contact the Arkansas State Police for assistance and remain on the scene directing traffic if space is available for traffic diversion.

The motorist will be advised that this service is provided free of charge as a courtesy. The MAP drivers shall maintain a log of services provided and provide the log to the Engineer at the end of each shift. The log shall contain at minimum the date, time, vehicle description, and details of services rendered. If no service was required for the shift, the log shall state such.

ABANDONED VEHICLES: If an abandoned vehicle is encountered, the MAP driver shall contact “911” and ask for Arkansas or Mississippi State Highway Police assistance. The MAP driver shall provide the following information to “911” and the State Highway Police if contacted: the vehicle location, description, license plate number, and whether the vehicle is impeding traffic.

ACCIDENTS: Upon arrival at an accident, the MAP driver shall call “911” for Highway Police, fire, and ambulance assistance as necessary. When calling “911” specify if the accident is in Arkansas or Mississippi as they have separate jurisdictions of authority. Where no apparent personal injury is evident, the MAP driver shall request the motorists to either drive or consent to be moved out of the travel lane to open the obstructed lane to traffic. MAP drivers shall take no action without the driver’s consent except under law enforcement’s direction. When apparent personal injury is evident or when driver intoxication is evident or suspected, the MAP drivers shall not move the vehicles involved in the accident until directed by law enforcement.

DEBRIS IN THE MAINTENANCE OF TRAFFIC LANE: Others are assigned the responsibility of removing debris from accidents in this contract, but the MAP drivers are ultimately responsible for clearing any remaining debris. MAP drivers will be responsible for the removal of any litter, waste, rubble, or loose debris that has fallen, been dropped, or thrown on to the open maintenance of traffic lane that could affect the safe passage of vehicles through the construction zone. Any debris removal from the construction zone shall be disposed of in a responsible manner if and where directed by the Engineer. Debris cannot be disposed of or buried in the construction zone or Mississippi River Flood Plain.

EMERGENCY RESPONSE AND TRANSPORT: MAP drivers shall be required to assist with emergency response requests from the Traffic Control Supervisor or Engineer. The MAP drivers shall serve as flaggers, as needed, to assist the police working the accident and to prevent traffic from entering the bridge open maintenance of traffic lane.

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MOTORIST ASSISTANCE PATROL

CHARACTER OF WORKERS: MAP drivers performing this work shall be well groomed and wear a name tag that clearly shows the employee's full name and the Contractor's name. Gratuities or tips, whether in the form of cash, goods, etc. shall not be accepted. If the MAP driver is offered such items, he/she should explain that the service is paid for under the highway construction project and politely decline the offer.

MAP drivers shall not refer motorists to a specific garage, private tow service, service station, or mechanic. If a motorist needs towing or additional mechanical services, the MAP driver shall provide the cellular telephone and telephone directory for the motorists to use to arrange for their own service.

METHOD OF MEASUREMENT: Motorist Assistance Patrol will be measured by the Lump Sum.
BASIS OF PAYMENT: Work completed and accepted and measured as provided above will be paid for at the contract unit price bid Lump Sum for Motorist Assistance Patrol, which price shall be full compensation for monitoring the maintenance of traffic lane and signals, and providing basic mechanical assistance to motorists, furnishing all labor, vehicles, equipment, tools, uniforms, cellular telephone service, and incidentals to render the services as described above.

Payment will be made under:

Pay Item	**Pay Unit**
Motorist Assistance Patrol	Lump Sum

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JOB NO. 110812

TRAFFIC CONTROL SUPERVISOR

Section 603 Maintenance of Traffic and Temporary Structures of the Standard Specifications for Highway Construction, 2014 Edition, is hereby expanded to include the following:

It is the intent of this Special Provision to require the Contractor to provide a Traffic Control Supervisor in accordance with the Standard Specification for Highway Construction, 2014 Edition. The Traffic Control Supervisor shall be available 24 hours per day, 7 days per week until construction has been completed and Hwy. 49 traffic is returned to its normal condition in both lanes.

The Traffic Control Supervisor shall be responsible for maintaining and making necessary changes to the messages on the Portable Changeable Message Signs and the timing of the Portable Traffic Signal System and shall provide credible and accurate information to the Engineer throughout the project. All messages and signal timing must have approval of the Engineer prior to use. The Engineer will have the authority to direct changes to the messages or signal timing as conditions dictate.

The Traffic Control Supervisor shall also be responsible for serving as the Contractor's Emergency Response contact for this project. The Helena-West Helena Emergency police, fire, and ambulance responders will need access across the bridge as quickly as is safely possible. The Traffic Control Supervisor shall be responsible for any necessary actions to safely clear traffic from the bridge to allow emergency services to cross as needed.

BASIS OF PAYMENT: Work completed, accepted, and measured as provided above will be paid for at the Lump Sum unit price bid for the contract item Traffic Control Supervisor, which price shall be full compensation for fulfilling the requirements of all of the services as described above.

Pay Item	Pay Unit
Traffic Control Supervisor	Lump Sum

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WRECKER SERVICE

DESCRIPTION: This item shall provide (24 hours/7 days a week) on-call wrecker service to remove stalled, disabled, wrecked or otherwise incapacitated vehicles from the travel way to the staging area determined by the Engineer. **The "wrecker service" response time from the end of the initial phone contact to both bridge ends must be 15 minutes or less for passenger vehicles and 45 minutes or less for heavy commercial and agricultural vehicles to cooperate with law enforcement, the Engineer, or the Traffic Control Supervisor to clear and open the maintenance of traffic travel lane.**

"Wrecker Service" shall have the capacity to service both ends of the bridge within the above time limits and provide two responding tow trucks if required because: 1) there may be two vehicles to be removed in a timely manner and 2) traffic will be travelling in both directions across the bridge in a single lane. The responding wreckers shall have the required credentials to operate in the state of the vehicle event-- Arkansas or Mississippi--with the capacity to tow the disabled or otherwise incapacitated vehicle. ("Vehicle" in this special provision is defined as any motorized transport of people and/or freight.)

CONTRACTOR CONTACT INFORMATION: The Contractor shall provide the Engineer contact telephone numbers and names of the employees that are entrusted to make decisions and implement any required corrective actions to assist the wrecker service. The Traffic Control Supervisor shall be responsible for updating the contact information and providing current contact telephone numbers during Contractor working hours and for continuously available after-hours on-call contacts.

METHODS: The Contractor will be required to provide for a wrecker and operator or commercial towing service to clear the blocked travel lane. The wrecker operator and towing service shall provide evidence of, and maintain all licenses, fees and bonds as applicable. If the Contractor utilizes a commercial towing service, the wrecker company must have two wreckers, one for each state jurisdiction, dedicated to being available to provide response within the time limits specified above for use on this project. In the event both disabled vehicles must be removed in the same direction, additional response time for the second wrecker may be permitted by the Engineer.

The wrecker operators must have a minimum of one year's experience in the operation of the wrecker being used. They must have a criminal background check before they are allowed to perform these duties indicating they have had (1) no suspensions or revocations of driver's license during the preceding five (5) years; (2) no convictions for driving under the influence of alcohol or drugs during the preceding five (5) years; (3) no convictions of a felony. A copy of the background check or proof that the operator meets the above requirements shall be provided to the Engineer prior to working on the project. The wrecker operators must have a valid Class A Commercial Driver's License and shall speak and read the English language.

If required, the wreckers provided must be capable of towing vehicles more than seventeen thousand pounds (large trucks, road tractor/trailers and similar vehicles and shall meet the following minimum requirements:

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WRECKER SERVICE

- Truck chassis shall have a minimum gross vehicle weight rating (GVWR) of not less than forty-six thousand (46,000) pounds
- Trucks shall have minimum of tandem axles with two (2) live drive axles
- Equipped with single or double boom with a capacity of not less than fifty thousand (50,000) pounds as rated by the manufacturer
- Equipped with a single winch with a capacity of fifty thousand (50,000) pounds as rated by the manufacturer or an individual power winch of not less than twenty-five (25,000) pounds as rated by the manufacturer and a total rating with both winches of fifty (50,000) pounds.
- Equipped with a manufactured wheel-lift with retracting lifting capacity of not less than twelve thousand (12,000) pounds as rated by the manufacturer, with safety chains
- Equipped with a minimum of one hundred fifty (150) feet of five-eighths (5/8) inch cable, plus fifty feet of five-eighths (5/8) inch drop cable
- Equipped with airbrakes constructed so as to lock wheels automatically upon failure
- Equipped with light and air brake-hookups
- Come-A-Longs, chains, or other similar devices shall not be used as substitutes for winch and cable.

Light duty wrecker(s) may be used for towing vehicles weighing seven thousand (7,000) pounds or less (passenger cars, pickup trucks, motorcycles, small trailers, and similar vehicles). Wreckers used for only that purpose shall meet the following requirements:

Conventional wrecker:

- Minimum gross vehicle rating (GVWR) of not less than ten thousand (10,000) pounds
- Equipped with individual boom capacity of not less than eight thousand (8,000) pounds as rated by the manufacturer
- Equipped with individual PTO or hydraulic power winch capacity of not less than eight thousand (8,000) pounds as rated by the manufacturer with at least one hundred (100) feet of three-eighths (3/8) inch cable drum
- Equipped with a manufactured wheel-lift with a retracting lifting capacity of not less than three thousand five hundred (3,500) pounds as rated by the manufacturer, with safety chains
- Come-A-Longs, chains, or other similar devices shall not be used as substitutes for winch and cable
- Equipped with dual rear wheels

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Rollback wrecker:

- Minimum gross vehicle rating (GVWR) of not less than eleven thousand (11,000) pounds
- Equipped with a minimum eight thousand (8,000) pound winch as rated by the manufacturer with at least fifty (50) feet of three-eighths (3/8) inch cable or larger
- Come-A-Longs, chains, or other similar devices shall not be used as substitutes for winch and cable

A means for direct communication between the wrecker operator, law enforcement, the Traffic Control Supervisor, and the Engineer must be provided by the Contractor (two-way radio, cellular telephone, etc.). Upon arrival at the bridge, the Wrecker Service shall not block the bridge end/s if vehicles are being directed off the bridge by the police.

The vehicle (vehicles) blocking the travel lane will be removed to the nearest safe location such that the travel lanes will be clear. The owner of the stalled or wrecked vehicle will be responsible for obtaining a private wrecker service for the removal of the vehicle from its relocated position. If the Contractor chooses to utilize a private wrecker service for this contract item, they shall be responsible for ensuring that the private wrecker service does not use their position to gain advantage over other wrecker services in the area to make the second move of the vehicle from the safe location off the bridge that was determined by the Engineer. If the blockage is caused by an accident, the wrecker shall not remove any vehicles except as directed by law enforcement authorities.

All debris, oil, broken glass, etc. and other such objects foreign to the roadway surface shall be cleaned up by the wrecker service to the satisfaction of the Engineer before the roadway can be reopened to traffic.

METHOD OF MEASUREMENT: Wrecker Service will be measured by the Lump Sum.
BASIS OF PAYMENT: Work completed and accepted and measured as provided above will be paid for at the contract unit price bid Lump Sum for Wrecker Service at both ends the bridge, which price shall be full compensation for removal of the blocking vehicle from the travel way to the staging area; for cleaning up any debris and for all labor, vehicles, fuel, tools, equipment and incidentals necessary to complete the work as described above.

Payment will be made under:

Pay Item	**Pay Unit**
Wrecker Service	Lump Sum

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CONSTRUCTION PROJECT INFORMATION SIGN

DESCRIPTION: This project includes Construction Project Information Signs to inform the public of pertinent job information. Included in this information is the job number, start date, and estimated completion date. Additional information to be included on this sign can be viewed on the special detail in the plans. Location and quantity of signs for this project is located in the Maintenance of Traffic Details.

MATERIALS: All materials incorporated into the project for this sign shall conform to the specifications pertaining to Signs in Section 604 in the Standard Specifications for Highway Construction and appropriate supplemental specifications. The numerals and letters for both date fields may be placed on separate sign blank material that can then be attached to the larger sign blank or be furnished as sections of reflective sheeting that can be used to overlay a revised date. The dimensions of the letters and numbers shall match the sizes shown in the project's special detail. The sign blank material and reflective sheeting used for the date fields shall be the same types used for the overall sign.

CONSTRUCTION REQUIREMENTS: The start date shown on the sign shall be either Early, Mid, or Late followed by the year for the date the Contractor plans to begin work on a new project. (Early includes January through March, Mid includes April through July, Late includes August through December). The initial estimated completion date to be placed on the sign will be either the completion date shown in the project's CPM schedule or a date based on information provided by the Contractor and agreed to by the Engineer. The estimated completion date will be shown as Early, Mid, or Late followed by the year. The Contractor will be required to update the sign's estimated completion date information, timeframe (Early, Mid, or Late) and/or Year, if and where directed by the Engineer throughout the duration of the project.

The Construction Project Information Sign shall be installed at the same time when all other advanced warning signs are installed on the project. The Contractor will have five (5) business days from the time the Engineer informs the Contractor to update the Estimated Completion Date on the Construction Project Information Sign. Failure to change the date on the sign after five (5) days may lead to the holding of pay estimates until the dates are updated.

METHOD OF MEASUREMENT: Construction Project Information Sign will be measured by the square foot of sign area and will be paid under the contract item "Signs". Construction Project Information Sign Update will be measured by the each, which shall consist of updating the timeframe (Early, Mid, or Late) and/or Year. Updates that require a change in both the timeframe and year will not be treated separately and shall be paid as a quantity of one (1) each.

PAYMENT: Construction Project Information Sign. The contract unit price bid per square foot for Signs shall be full compensation for all materials, labor, equipment, tools, and incidentals necessary for installing, and for maintenance, repair, and removal of the Construction Project Information Signs.

CONSTRUCTION PROJECT INFORMATION SIGN UPDATE. The contract unit price bid for this item shall be full compensation for furnishing and installing the overlay or sign blank insert for

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updating the Estimated Completion Date, for all materials, labor, equipment, tools, and incidentals necessary for installing and maintaining the date field on the sign. This item will be paid each time the Resident Engineer requests an updated date be installed on the Construction Project Information Sign.

Payment will be made under:

Pay Item	**Pay Unit**
Construction Project Information Sign Update	Each

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PORTABLE CAMERA TRAILERS

Description.

This item shall consist of furnishing, installing, maintaining and moving from one location to another Portable Camera Trailers in accordance with the plans and these specifications. The Portable Camera Trailers will be located both in and near the limits of the project.

Trailers to be Furnished.

(a) Contractor Responsibility. The Contractor shall provide the quantity and type of Portable Camera Trailers as specified below. All equipment offered under this specification shall be new. The Contractor will install the Portable Camera Trailers at locations as determined by the Engineer. For approximate locations of Portable Camera Trailers see table below:

Portable Camera Trailers	
General Description	**Quantity**
West End of Bridge 02899 (Arkansas Side)	1
East End of Bridge 02899 (Mississippi Side)	1
Total	**2**

Note — stations/locations are approximate for bidding purposes.

Minor grade adjustments and temporary drainage appurtenances to be constructed by the Contractor to establish level placement. The Contractor shall install the Portable Camera Trailers no later than seven (7) days after the effective date of the Work Order.

Contractor will make all on-site access to Portable Camera Trailers, including camera root access, available to appropriate ARDOT staff to enable proper configuration and operation for the traveler information site IDriveArkansas. Contractor will always provide and maintain access to the portable camera trailers to appropriate ARDOT staff.

(b) ARDOT Responsibility. The ARDOT Public Information Office is responsible for obtaining and paying for a cellular data plan required for transmitting live images. ARDOT is responsible for providing a web-based interface for viewing and controlling live camera images.

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(c) Relocations. The Contractor will coordinate at least two weeks in advance with ARDOT if/when a Portable Camera Trailer must be relocated to accommodate work in the work zone. If relocation is necessary, such relocation will be performed by the Contractor, including establishment of a new level placement site.

(d) Upon Completion. The Contractor will demobilize and relocate camera trailers to the nearest ARDOT facility in coordination with the Engineer. The Contractor will convey ownership of all Portable Camera Trailers to ARDOT once the contract is complete and cameras have been relocated to the nearest ARDOT facility as directed by the Engineer.

Materials.

(a) Trailer. The trailer shall be a 3,500-pound single axle trailer made of steel frame construction and powder coated, orange for visibility, to withstand humidity, rain, sleet, snow, ice, rust and salt. There shall be a 30-foot galvanized mast that rotates 360 degrees. Raising and lowering of the mast should be mechanical and easy to operate. There shall be four corner leveling jacks. There shall be a detachable hitch, to prevent trailer theft, sized for a two-inch ball.

(b) Control Box. The control box will house all electronics involved with control and power of the camera, including solar controller, DC midspan, wireless modem, and power bus/distribution bar. Control box to meet NEMA 3R requirements for outdoor protection. Powder coated, orange for visibility, steel, stainless steel or aluminum. Built-in, vandal-proof access lock with key. Conduit shall be run between the control box and camera mount with proper waterproofing.

(c) Communications. The communications requirements shall be as follows: Sierra Wireless Airlink MP70, no WiFi, LTE Advanced Pro with Band 14 and a FirstNet Ready — SKU 1104071. Sierra Wireless Airlink Antenna: 3-in-1 Dome — SKU 6001136.

(d) Battery Box and Batteries. Batteries are to be enclosed in an isolated box that is NEMA 3R compliant with conduit to the Control Box with proper weatherproofing. The Battery Box is to be powder coated, orange for visibility, steel, stainless steel, aluminum or plastic. Painted steel is not acceptable. The Battery Box is to include built-in, vandal-proof access lock with key. Batteries should be sealed, 6VDC, 115 min @ 75 amps — 225 AH @ 20 hours, arranged in series-parallel to produce 12VDC power. Typical operations have required 12–16 batteries.

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(e) Solar Panels and Controller. There shall be four (4) 140W solar panels with mounts installed on the trailer for easy tilt and rotation for best positioning toward the sun. There shall be a 30 Amp, 12/25 VDC, PWM solar charge controller with low voltage disconnects. The Contractor is to provide typical controller model used by ARDOT of ProStar PS-30M. The controller must have 100% solid-state electronics with temperature compensated charging and an LED indicator to report battery status. The controller must be capable of handling charged sealed, gel or flooded batteries. The controller must include reverse polarity protection and surge/lightning protection.

(f) Video Camera. Each trailer will be equipped with two (2) cameras meeting the following specifications:

- Camera Model: AXIS P5655-E PTZ Network Camera
- Camera Mount: AXIS T91L61 Wall-and-Pole Mount
- Camera Power Supply: Microsemi PD-5501G L2-24VDC Midspan

Method of Measurement. Portable Camera Trailers furnished as provided above will be measured by the unit.

Basis of Payment. Portable Camera Trailers furnished and installed and measured as provided above will be paid for at the contract unit price bid per each for Portable Camera Trailer, which shall be full price for furnishing, installing, maintaining and moving from one location to another the Portable Camera Trailers; all materials, labor, equipment, tools, and incidentals necessary to perform minor grade adjustments and installation of temporary drainage; and removal and disposal of placement site materials.

Payment will be made under this item at the rate of 75% of the contract unit price bid at the time the Portable Camera Trailers are completely in place and accepted by the Engineer. The remaining 25% of the contract unit price bid will be paid upon relocation to the nearest ARDOT facility upon completion of all work under the Contract.

Payment will be made under:

Pay Item	**Pay Unit**
Portable Camera Trailer	Each

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VARIABLE MESSAGE SIGN SYSTEM

This item shall consist of furnishing, installing, operating, maintaining, and moving from one location to another a Variable Message Sign System (VMSS) in accordance with the plans and these specifications. The VMSS will be located both in and near the limits of the project.

The system shall consist of all hardware, software, and other equipment necessary to remotely update messages as needed. All of these items shall be considered part of the VMSS.

The various messages displayed on each variable message sign (VMS) will be the responsibility of the Contractor and approved by the Engineer.

SYSTEM REQUIREMENTS.

VMSS: The Variable Message Sign System shall be fully operational, as defined in the Operational Test requirements of this special provision, before payment/s will be made for any of the VMSS components. Main lane closures will not be permitted until the VMSS is fully operational. After approval of the Operational Test report by the Engineer, the Contractor shall maintain the VMSS as fully operational 24 hours a day, 7 days a week, 365 days per year until the project is substantially complete. Additional equipment deemed necessary by the Engineer to accomplish this shall be measured and paid for under the applicable portions of this Special Provision. All equipment will be required to communicate with the central server and software. All equipment will be portable. The central server and software shall be maintained offsite in a secure environment.

(1) Layout. The Contractor shall submit a Final VMSS Layout Plan for approval that will include the location of each VMS. The project plans shall be used as a guide in developing the Final VMSS Layout Plan. This plan will consider the placement of VMSS equipment and signs to avoid conflicts with construction or reducing the effectiveness of construction signing. The Engineer shall approve the Final VMSS Layout Plan before any VMSS equipment is deployed.

(2) Equipment. All equipment components of the VMSS shall be in good working order and meet the product standards of the vendor. All equipment should be trailer mounted and solar powered. No prototype equipment will be used unless approved by the Engineer.

Trailer mounted equipment shall be protected by traffic drums in accordance with guidance provided in the MUTCD and standard drawings. Traffic drums shall be maintained in accordance with Section 604 of the Standard Specifications. Any traffic drums which are damaged or in need of replacement as determined by the Engineer shall be replaced. Furnishing, maintaining and/or replacement of traffic drums will not be paid for separately but shall be considered as included in the unit cost for the equipment provided for this specification.

a. Variable Message Sign. Each VMS shall be capable of being remotely controlled by both the control server and software and by the Traffic Control Supervisor in the event of a system malfunction. The VMS used shall be a current model from the manufacturer.

(3) Communications. The VMSS shall be installed to provide constant communication to and from VMSs to the central server and software. The VMSS shall have a complete

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cycle time of less than 120 seconds that includes delivery of e-mail information. If the system is not able to operate within the 120-second cycle time, the system shall be considered inoperative. All communication platforms between the server and VMS shall be accomplished by digital cellular modem, radio frequency (FCC or FHWA band), or other means subject to approval by the Engineer.

The Contractor shall secure any necessary FCC and/or FHWA licenses for the operation of the Variable Message Sign System, including all necessary license renewals.

The system shall also be capable of e-mailing information to a minimum of 10 locations, such as police agencies and broadcast media. The e-mail information shall include the scenario in effect and the messages delivered to the public.

(4) Message Displays and Scenarios. The Contractor shall submit to the Engineer for approval a Traveler Notification Plan detailing the messages delivered along with the traffic scenarios used to activate the messages. The Contractor must have an approved plan to operate the VMSS. Modifications to this plan will be made and executed if the Engineer determines that any of the current messages or traffic scenarios in use is ineffective, that additional traffic scenarios and/or equipment are needed to adequately warn the public, or errors are found in the messages being given to the public. The term “Mile Marker” shall be displayed to the public in lieu of “Log Mile”.

E-mails and/or SMS text messages shall be sent to the Engineer as well as the Contractor whenever the system detects a failure of any of the components or if the main power supply to the VMSS system controller or monitoring system is interrupted. Notification shall be sent within 10 minutes of the system detecting a problem as indicated above. This will provide notice to the Contractor of needed repairs. Failures shall be defined as any system component not checking in with the system controller as scheduled.

E-mails and/or SMS text messages shall be sent to the Engineer whenever the system detects a failure of a VMS unit, or if the main power supply to the system controller or monitoring system is interrupted. This will provide notice to the Engineer that the system may not be functioning as intended and improper messages may be delivered to the public.

When bridge 02899 (Hwy. 49 Mississippi River Bridge) with no planned lane closures and is open to two-way traffic the upstream VMS will display either the following message or one approved by the Engineer:

WORK ZONE XX MILES AHEAD

DRIVE SAFELY

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At a minimum of three (3) days before a planned lane closure on bridge 02899 (Hwy. 49 Mississippi River Bridge), then either the following message or one approved by the Engineer will be displayed:

MS BRIDGE

ALT. 1-WAY TRAFFIC

STARTING MM-DD-YY

When bridge 02899 (Hwy. 49 Mississippi River Bridge) has alternating one-way traffic due to a lane closure, then either the following message or one approved by the Engineer will be displayed:

MS BRIDGE

ALT. 1-WAY TRAFFIC

EXPECT DELAYS

System Reports. The system shall be capable of automatically creating a log of component failures the system encounters. This log shall be submitted on a weekly basis to the Engineer. The log shall indicate the time the component failed and the time it returned to normal operation. A system activity log showing the system device displays along with the time of the display or measurement shall also be recorded and submitted to the Engineer on a bi-weekly basis coinciding with the Department's bi-weekly estimate periods. Failure to submit the System Reports as specified can result in withholding of monthly operational line items for the weeks in question.

Operational Test. The VMSS shall be in fully operational during all phases of construction. Once installed, a five-day Operational Test shall be conducted before any time will be considered for payment. The Contractor shall provide for complete operations support from the vendor during the Operational Test. If any equipment malfunctions occur for a combined period of four hours or more during this Operational Test on any day, no credit will be given for that day for the Operational Test period. Applicable time charges (Working Days and/or Site Use Days) will be assessed during the VMSS Operational Test period. Standard Specification 108.07, Failure to Complete Work on Time, will not apply.

The Contractor shall maintain records of equipment stoppages and resumptions during the five-day Operational Test for submission to the Engineer for his approval. In the event that 10 percent or more of the time similar equipment malfunctions occur that affect the proper operation of the VMSS, the Engineer may declare a system component defective and require replacement of the equipment at no additional cost to the Department. When a system component defect is declared, the five-day Operational Test shall resume after all defective equipment is replaced and the system is fully operational.

The Contractor shall submit a report to the Engineer detailing the daily activity of the system during the Operational Test. The Contractor shall indicate in the report the date and time of any activity necessary to maintain operation of the VMSS during the Operational Test period. Each entry shall include the following information:

- Identity of equipment on which work was performed

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- Cause of equipment malfunction (if known)
- A description of the type of work performed
- Time required to repair equipment malfunction

Once the Operational Test Report is received and approved by the Engineer, the VMSS will be considered fully operational and time charges for the VMSS may commence.

After the Operational Test, the term “fully operational” will be defined as all components of the system functioning as designed. If the system is corrected within 4 hours of its malfunction, the system will be classified as “fully operational”. If the system fails to provide accurate information regarding traffic backups and is not corrected within 4 hours, the system will be classified as “not fully operational”. If a component or components fail and causes a “lockup” of the system resulting in inaccurate information being given to the public via VMS components, the system shall be classified as “not fully operational” if the lockup is not resolved within 4 hours of the initial failure.

To ensure a prompt response to incidents involving the integrity of the Variable Message Sign System devices and VMSs, the Contractor shall be required to make all necessary corrections to the components of the system within 12 hours of notification by the Department. If all corrections are made within this 12-hour period and the system is brought back on-line, no pay reduction will occur. Components are the Variable Message Signs, communications equipment, and all hardware and software required to operate the signs. If the 12-hour time frame expires and the components are not fully restored to proper working order, no payment will be made from the time of initial notification until the system is returned to being fully operational.

Failure to comply with these requirements after the 12 hours have expired will result in a charge calculated by dividing the Daily Road User Cost (shown in the “Site Use (A+C Method)” special provision) by 24 and rounded down to the nearest dollar. This charge will continue until all components of the VMSS are restored to a fully operational status. In assessing this charge, any portion of an hour will be counted as a full hour.

If the components of the Variable Message Sign System are down for more than 10 days in a month, whether they are consecutive or cumulative, then no payment will be made for that month. The Department reserves the right to deactivate the Variable Message Sign System components at any time if the Engineer determines that the system is not performing in accordance with these specifications, in which no further payment will be made until the system is restored to fully operational status.

If a component of the VMSS fails to operate properly on at least 4 calendar days in a 14-day estimate period, the Engineer may declare that component defective and require the Contractor to replace the component at no additional cost to the Department.

METHOD OF MEASUREMENT.

(a) VMSS Mobilization. The Variable Message Sign System Mobilization will be measured as a Lump Sum item.

(b) VMSS Operation. The Variable Message Sign System Operational Costs will be measured by the Month. After the system undergoes the Operational Test and is accepted for use, operation and maintenance of the Variable Message Sign System will be measured for payment by the month based on the number of days the system

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is “fully operational” during the project. If the VMSS is “not fully operational” as defined above, no payment will be made for that portion of the month and the penalty as defined above will be assessed.

(c) Furnish and Install Variable Message Signs. Furnish and Install Variable Message Signs will be measured by the Each.

(d) Device Relocation. After the Operational Test is complete and the system is accepted for use, Device Relocation will be measured for payment by the Each. A device relocation is defined as a 20-foot or more relocation of a VMS. Approval of the Engineer will be required prior to each move to be eligible for reimbursement. **Final removal of any device from the project will not be considered device relocation.**

BASIS OF PAYMENT.

(a) VMSS Mobilization. Work completed and accepted and measured as provided above will be paid for at the contract unit price of Lump Sum, which price shall be full compensation for furnishing the server and software; for testing the VMSS; for testing of all VMS; for integration of the VMSS data onto the **www.idrivearkansas.com** website; for obtaining all FCC and/or FHWA permits and licenses; for providing all required cellular and electrical services; and for all materials, labor, equipment, tools, and incidentals necessary to safely furnish and install this system.

(b) Furnish and Install Variable Message Sign (VMS). Work completed and accepted and measured as provided above will be paid for at the contract unit price of Each, which price shall be full compensation for furnishing, installing, and testing the Variable Message Signs for obtaining all FCC and/or FHWA permits and licenses; for providing all required cellular and electrical services; for furnishing, maintaining, and replacing traffic drums; and for all materials, labor, equipment, tools, and incidentals necessary to safely furnish and install this system.

(c) VMSS Operation. Work completed and accepted under the item Variable Message Sign System operation and measured as provided above will be paid for at the contract unit price bid per Month, which price shall be full compensation for operating, maintaining, inspecting and removing all the components of the VMSS, including the Central Data server; and all VMS; for renewing all FCC and/or FHWA permits and licenses; for maintaining the data feed; for providing 24-hour access to a system programmer; for maintaining all required cellular and electrical services; for furnishing, maintaining, and/or replacing traffic drums as needed; and for all materials, labor, equipment, tools, and incidentals necessary to safely maintain this system during construction.

(d) Device Relocation. Work completed and accepted under the item Device Relocation and measured as provided above will be paid for at the contract unit price bid per Each, which price shall be full compensation for approved 20-foot or more relocation of a VMS. Relocation of traffic drums shall also be included in this cost.

Payment will be made under:

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Pay Item	Pay Unit
VMSS Mobilization	Lump Sum
Furnish and Install Variable Message Sign	Each
VMSS Operation	Month
Device Relocation	Each

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JOB NO. 110812

BARRIER WALL DELINEATOR

DESCRIPTION: This item shall consist of furnishing and installing delineators to concrete barrier walls as shown in the plans or as directed by the Engineer.

MATERIALS: Barrier wall delineators shall comply with the Type 2 Construction Concrete Barrier Marker, as described in section 604 of the Department's Qualified Products List (QPL). The white or yellow sheeting for the correct traffic direction shall be Type VIII or Type IX reflective sheeting. The red sheeting for the incorrect traffic direction shall be Type XI reflective sheeting. All reflective sheeting shall comply with Section 723 of the Department's Standard Specifications for Highway Construction, except where provided for by Special Provision.

CONSTRUCTION REQUIREMENTS: The delineator color facing the correct direction of travel shall be white or yellow, matching the adjacent pavement edgeline. The delineator color facing the incorrect direction of travel shall be red.

The Contractor shall adhere the delineator to the bridge railing with an approved epoxy adhesive and ensure that the delineator is well-bonded to the bridge railing.

METHOD OF MEASUREMENT: Furnishing and installing barrier wall delineators, completed and accepted, shall be measured by the unit. One unit consists of the delineator and the epoxy necessary to complete installation.

BASIS OF PAYMENT: Work completed under this item and measured as provided above will be paid for at the contract unit price bid per each for Barrier Wall Delineator, which price shall be full compensation for furnishing and adhering the delineators; and for all equipment, tools, labor, materials and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Barrier Wall Delineator	Each

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JOB NO. 110812

PRECAST CONCRETE BARRIER (TYPE SPECIAL)

DESCRIPTION: This item shall consist of providing a MASH-compliant temporary concrete barrier with a narrow base during Maintenance of Traffic Stage Construction to replace the west-abutment backwall on Bridge No. 02899 over the Mississippi River at Helena-West Helena. The installation of this temporary concrete barrier shall be in accordance with the manufacturer's installation specifications, the Maintenance of Traffic plans, this Special Provision, and as directed by the Engineer. Section 604 Traffic Control Devices in Construction Zones in the Standard Specification for Highway Construction, 2014 Edition, referencing Precast Concrete Barrier, shall apply to this item.

MATERIALS: The Contractor shall supply a ReBLOC Temporary Concrete Barrier System from ReBLOC Concrete Barriers or a comparable approved temporary concrete barrier that has been crash-tested to MASH Test Level 3 (TL-3) with the compact dimensions specified in this Special Provision. Each section shall be approximately 32" in height and not greater than 12" in section width at any point. The Contractor shall provide the Engineer with copies of all necessary manufacturer's details and installation manuals prior to the installation of the Precast Concrete Barrier (Type Special) on the project. Upon completion of the work, the Contractor will be required to fill any anchor system holes with an approved non-shrink epoxy grout or better product on the ARDOT Qualified Products List during removal of the precast concrete barrier. This work is subsidiary to the pay item "Furnishing and Installing Precast Concrete Barrier (Type Special)".
The following is a distributor contact:

Gary Lallo, PE – Managing Director
Ramudden Global North America
Mobile: 1 (614) 306-0158
Office: 1 (614) 306-0158
Email: glallo@RamuddenGlobal-na.com

METHOD OF MEASUREMENT:

(a) Furnishing and Installing Precast Concrete Barrier (Type Special). The actual amount of Precast Concrete Barrier (Type Special) furnished and installed, up to the maximum amount that is authorized to be in place at any one time, will be measured by the linear foot.

(b) Relocating Precast Concrete Barrier (Type Special). The actual amount of Precast Concrete Barrier (Type Special) previously furnished and installed, which is relocated within the project limits will be measured by the linear foot for each authorized relocation.

BASIS OF PAYMENT:

(a) Furnishing and Installing Precast Concrete Barrier (Type Special). Work completed, accepted and measured as provided above will be paid for at the contract unit price bid per linear

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PRECAST CONCRETE BARRIER (TYPE SPECIAL)

foot, which price shall be full compensation for all materials, labor, tools, equipment, and incidentals necessary to complete the work for furnishing and transporting the temporary barrier to the site, installation, maintenance and repair during construction, final removal upon completion of the work, and filling of anchor system holes.

(b) Relocating Precast Concrete Barrier (Type Special). The unit price bid for this item shall be full compensation for all materials, labor, equipment, tools, and incidentals necessary for each relocation of the barrier that was initially furnished and installed on the project and that is authorized to be used at other locations within the project limits. The Contractor will be required to fill any system anchor holes from the initial installation. The maximum unit bid price for Relocating Precast Concrete Barrier (Type Special) shall not exceed 25% of the unit price bid for Furnishing and Installing Precast Concrete Barrier (Type Special). Any unit bid price submitted in an amount more than the specified maximum will be automatically adjusted by the Engineer downward to the specified maximum to determine the correct total bid. This adjustment to the specified maximum will be automatically made, without any counter adjustments in prices for other items

Payment will be made under:

Pay Item	**Pay Unit**
Furnishing and Installing Precast Concrete Barrier (Type Special)	Linear Foot
Relocating Precast Concrete Barrier (Type Special)	Linear Foot

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SPECIAL PROVISION

JOB NO. 110812

ITS ELECTRICAL JUNCTION BOX, METALLIC

DESCRIPTION: This item consists of installing and furnishing a NEMA 4X rated enclosure, of the type specified, for the general purpose of housing hardware, equipment, electronics, electrical conductors, splices, and other appurtenances for electrical power to a structure as shown in the plans or as directed by the Engineer. Each enclosure will include a removable top or removable lid (hinged or tethered) and a gasket material. Enclosure will be installed as per manufacturer's recommendations. Enclosure material and rating is as specified on this special provision and/or plans.

Provide brackets, supports, hangers, fittings, bonding jumpers, grounding systems, and other installation accessories as required.

Conduits entering junction boxes shall be provided with grounding bushings with green-colored machine screw terminal. All conduits shall be bonded together inside each junction box utilizing a minimum 6 AWG stranded copper bonding jumper. Junction boxes nearest each end of a bridge shall be grounded using no. 4/0-19 copper conductors, exothermically welded to the junction box with coal tar epoxy applied around the weld. Exposed ground conductors shall be protected inside a non-ferrous conduit. The ground end of the ground conductor shall be exothermically welded and epoxy tar coated at least two feet underground to a 5/8 inch diameter by 10 feet long copper clad steel ground rod. Per NEC Article 250, achieve a resistance to ground measurement of 25 ohms or less in dry conditions between the grounding electrode and the soil. Measure the ground resistance with an instrument designed specifically to measure and document earth/ground resistance, soil resistance, and current flow. Conduct the test by using the fall-of-potential method as described in the IEEE Standard 142-2007.

MATERIALS: Enclosure shall have the following requirements:

- NEMA 4X rating
- Constructed from stainless steel, or aluminum with minimum thickness of 1/8 inch
- Hinged or removable lid with gaskets, and latches
  - Non-hinged removable lids should be tethered in a manner that does not affect the NEMA rating.
- Lift tab on the lid
- Mounting tabs
- All materials shall comply with the "Buy America – Construction Materials" Special Provision.

METHOD OF MEASUREMENT: NEMA enclosure shall be measured by the unit.

BASIS OF PAYMENT: Work completed, accepted and measured as provided above will be paid for at the contract unit price bid for each enclosure installed; which price shall be full compensation for furnishing equipment, tools, labor and incidentals necessary to complete the work.

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JOB NO. 110812

ITS ELECTRICAL JUNCTION BOX, METALLIC

Payment will be made under:

Pay Item	**Pay Unit**
ITS Electrical Junction Box, Metallic (__”x__”x__”)	Each
ITS Fiber Optic Junction Box, Metallic (__”x__”x__”)	Each

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JOB NO. 110812

ITS EQUIPMENT CABINETS

DESCRIPTION: The cabinet will provide a protective outdoor housing enclosure in which to install field hardware required for ITS devices. Major elements of the equipment cabinet include the cabinet housing and equipment mounting hardware, interior wiring and termination facilities, power supplies, electrical accessories and field installation. Work also includes making modifications to existing ITS cabinets in accordance with the plans, specials provisions, Notice to Bidders and contract documents.

MATERIALS:

Equipment and Materials: The Contractor shall furnish only new equipment and materials as follows:
The cabinet enclosure shall be manufactured from 0.125-inch aluminum. The cabinet and integral materials shall be as recommended by the manufacturers for outside plant use and the intended application. This requirement shall include wiring and electrical materials and configurations (including connector pinouts) that are wholly or partially related to the field device applications (CCTV, RDS, VDS, etc.).
Equipment cabinets shall be furnished, installed, and configured at locations shown in the plans. All equipment and materials shall be furnished and configured for each specific location as shown in the plans.
Electrical systems and components shall be UL-listings.
Unless otherwise specified, wire and cable shall be stranded copper conductors, 167°/194° Fahrenheit wet/dry rated insulation and sized for the maximum voltage and current in the circuit.
All materials shall comply with the “Buy America – Construction Materials” Special Provision.
Components Specified as Rail-Mounted: Components specified as rail-mounted shall be compliant as follows:
DIN EN 50022 (NS35) component rails.

1) Component rails shall be the perforated type and of sufficient length as to protrude beyond the mounted components for fastening to cabinet panels as specified herein.
2) UL 1059.
3) UL 486E.
4) NEMA ISC-4.
5) Alternate rail configurations, if proposed, shall be submitted to the Engineer for consideration and approval.

Terminal Blocks and Component Terminal: Terminal Blocks and Component Terminals shall be nickel-plated copper, copper alloy or brass.
Terminal blocks shall have voltage and current ratings greater than the ratings of the wires that are terminated, be able to terminate wires from #8 AWG to #1/0 AWG wiring and shall be

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ITS EQUIPMENT CABINETS

assembled into housing enclosures such that all exposed surfaces are touch safe. Conductor fastening screws shall be captive. Terminal block housings shall be colored as follows:

1) 120 VAC line/hot: black
2) 120 VAC neutral: white
3) 24 VDC positive: red
4) 24 VDC negative: gray
5) Communications: orange
6) Ground: green or green/yellow

Door Locks: Door Locks shall be provided for all cabinet doors, keyed to the Department standard #2 key type lock and keyed to be operated with a traffic industry conventional #2 key made from heavy-duty blanks. Two keys shall be provided with each cabinet.

Cabinet Labels: Labels shall be provided with agency name, project number, device name and ID labels on all cabinets.

Labels shall be flat black lettering on a reflective white background. Lettering shall be a minimum of one inch (1") in height.

Labels shall be manufactured from pre-coated adhesive backed reflective sheeting material meeting the minimum requirements of AASHTO M268 Type 1.

The agency name labels shall be “ARDOT ITS” in one continuous adhesive sheet.

The device ID labels shall include the device name as an acronym and a hyphen and shall be one continuous adhesive sheet. Device name acronyms are “CCTV-“, “RDS-“, “VDS-“or “DMS-“. The device ID shall be numerals corresponding to the location and shall be installed adjacent to the acronym sheet. Multiple device IDs of the same type shall be on the same line separated with a space. Examples: "CCTV-73", "RDS-219 220", "VDS-303 304".

Labels shall be installed along the top of the cabinet with MDOT ITS label at the top and the device ID labels immediately underneath. Labels shall be visible from both directions of travel.

Voltage Labels: A voltage label shall be provided on all cabinets or enclosures in accordance with the NEC labeling requirements. Voltage labels shall meet the following minimum requirements.

Labels shall be flat black lettering on a reflective yellow background. Lettering shall be a minimum of one inch (1”) in height.

Labels shall be manufactured from pre-coated adhesive backed reflective sheeting material meeting the minimum requirements of AASHTO M268 Type 1.

Labels shall include the voltages entering the cabinet and shall be one continuous adhesive sheet. Examples are "120VAC" or "24VDC".

Labels shall be installed on all cabinet doors.

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ITS EQUIPMENT CABINETS

Type A Cabinet: All Type A cabinets shall be identical in manufacture and assembly and capable of supporting Radar Detection System units.
A Type A cabinet, intended for outdoor use, shall be provided with a minimum NEMA 3R rating.
The cabinet enclosure shall be manufactured from 0.125-inch aluminum.
The cabinet shall provide a minimum of one ventilation louver on at least two sides. Any louver opening greater than 3/16 inch in any dimension shall be screened to prevent insect entry.
The cabinet shall be intended for strapped pole-mounting; provide all mounting hardware necessary including 1/2-inch stainless steel mounting straps.
A Type A cabinet enclosure shall be provided with dimensions of 18 inches (H) x 14 inches (W) x 8 inches (D) with a tolerance of ±0.25 inches.
The cabinet door shall reveal the entire front opening of the cabinet for accessibility. The hinges shall be designed to prevent the door from sagging.
A single-piece 0.125-inch aluminum back panel shall be provided that covers no less than 90% of the cabinet back wall. Back panels shall be affixed to the enclosure with threaded fasteners and shall be removable from the enclosure with hand tools only and without requirement to remove the cabinet door, mounting straps, or any other components other than communications or device wiring.
The cabinet shall be furnished with doorstops, which retain the doors open in 90-degree and 120-degree positions.
A grounding lug shall be provided on the back panel that is directly bonded to the back panel capable of terminating #6 AWG wire.
RDS Communications Wiring. RDS communication wiring shall meet the following when using RS-485 communication cable:

1) Component rail physically and electrically fastened to the cabinet back panel.
2) Strain relief brackets for the comm. cable(s) and the RDS unit harness cables.
3) Parallel-connection single-stage surge suppressors for the four wire RS-485 data signal for the RDS units with integral or separate terminals for a minimum of three RDS comm. cables.
4) Parallel-connection zero-power dissipation surge suppressor for the 12-24VDC power supply for the RDS units with integral or separate terminals for a minimum of three RDS comm. cables and two RDS unit harness cables.
5) Connection/jumper wiring between the surge suppressors and the local/remote communications disconnect module(s) same as conductor size, type, and insulation color in the RDS comm. cable.

Type B Cabinet: All Type B cabinets, except those at solar power locations, shall be uniform in manufacture and assembly and capable of supporting the field equipment as shown on the plans.

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As a minimum, support is required for two (2) RDS units; one (1) network switch; two (2) radios/antennas; RDS comm. cable; and fiber drop panel terminations, regardless of the devices shown in the plans at a specific location.
A complete Type B cabinet shall be an assembly consisting of a cabinet housing and electrical subsystems.
A Type B cabinet housing shall be provided that conforms to the standards for a Type 170 336S with approximate exterior dimensions of 46 inches (H) x 24 inches (W) x 23 inches (D), including standard EIA 19-inch rack cabinet cage. The minimum clear vertical inside dimension of the 19-inch rack for equipment mounting shall be 39.5inches. Standard cabinet accessories for traffic signal operations, such as controller, power distribution assembly, input/output file and termination panels, and the police panel, are not required as part of this cabinet assembly.
Hardware: All mounting hardware necessary for base or pole mounting as shown on the plans shall be provided. As a minimum, three (3) 3/4-inch stainless steel mounting straps shall be provided for pole mounted cabinets.
Hooks welded to the inside of each cabinet door shall be provided for hanging a side-opening, opaque, resealable, heavy-duty plastic documentation pouch with metal or hard-plastic reinforced holes for the door hooks. One pouch shall be provided with each cabinet.
A rack-mounted cabinet sliding storage drawer shall be provided in accordance with the following:

1) Approximate exterior dimensions 1.75 inches (H) x 16 inches (W) x 14 inches (D).
2) Telescoping drawer guides to allow full extension from the rack cage.
3) Opening storage compartment lid to access storage space for cabinet documentation and other items.
4) Supports a weight of 25 pounds when extended.
5) Non-slip plastic laminate surface attached to the compartment lid which covers a minimum of 90% of the surface area of the lid.
6) Mounted in the rack cage with the bottom surface approximately 9 inches above the bottom of the rack cage.

Side panels shall be provided within the two sides of the rack cabinet cage, inserted and fastened from the inside of the cage. Side panels shall be fabricated from 0.125-inch 5052 sheet aluminum alloy and sized to the full inside dimensions of the rack cabinet cage. Side panel surfaces for equipment mounting are denoted by cabinet side with the "right" side being the support pole side and by upper or lower as related to the sliding storage drawer. Upper right-side panel (support pole side of cabinet, above the drawer) and lower left side panel (opposite side from the support pole, below the drawer) are example side panel surface names.
A 12-inch-long DIN rail shall be included for future components mounted in the horizontal and vertical center of the lower left side panel.

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Electrical Subsystem: Type B cabinet electrical subsystems shall meet the following requirements. Note that the Type B cabinets at solar power locations are not required to meet Subsection 660.03.2 requirements.

1) An electrical distribution module comprised of the following DIN rail-mounted components:
    a. Service entrance terminal block with positions for 120VAC line, neutral, and ground and capable of terminating minimally #6 through #8 AWG wire, located at one end of the mounting rail with an approximately 0.75-inch blank spacer module adjacent to the main cabinet breaker.
2) Main cabinet automatic overcurrent 15A circuit breaker that is UL-listed and of the mechanical-magnetic type rated for use from 0°F to 122°F minimum.
3) Main cabinet surge suppressor for single-phase 120VAC service entrance, parallel wired with a clamp voltage of approximately 280V and capable of a surge current of at least 20,000 amps.
4) Main cabinet filter for power line noise and switching transient suppression, integral to, or separate from and wired to, the main cabinet surge suppressor.
5) Electrical distribution terminal block for line and neutral conductors parallel wired to the main cabinet surge suppressor but non-filtered, with a minimum terminating capability of six conductors of #10 to #18 AWG. The terminal block shall be labeled as "ACCY POWER".
6) Electrical distribution terminal block for line and neutral conductors for circuits on the load/equipment side of the power line filter, with a minimum terminating capability of six conductors of #10 to #18 AWG. Label the block as "EQUIP POWER".
7) A singular electrical distribution bus bar for grounding and bonding conductors shall be located on the same rail but separate from the service entrance terminal block and connected to the entrance ground with a #6 AWG green insulated wire. The grounding bus bar shall have a minimum terminating capability of two (2) - #6 AWG conductors and ten (10) - #10 to #18 AWG conductors. Grounding requirements shall be per drawings and NEC Article 250 with additional information in the plan General Notes that shall be met unless otherwise specified in the plans. All costs associated with grounding shall be included in the overall contract price; no separate payment will be made for any grounding unless expressly noted in project documentation.
8) Ground fault interrupt duplex receptacle (NEMA 5-15R) with 2.5A circuit breaker connected to the ACCY POWER distribution block. Permanently affixed to the receptacle, provide two red, orange or green/yellow labels with minimum 0.25-inch lettering with the legend "300 WATTS MAX." This receptacle is for technician use only and shall not be used to power equipment.
9) Include two duplex non-GFCI equipment power receptacles (NEMA 5-15R) connected to the EQUIP POWER distribution block mounted on the upper rear corner of the cabinet upper right-side panel. Permanently affixed to the receptacle, two red, orange or green/yellow labels with minimum 0.25-inch lettering with the legend "75 WATTS MAX" permanently affixed to the receptacle.

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10) Interconnection wiring between all electrical distribution module components and the other systems included in or housed in the Type B cabinet.

Lighting Subsystem: A cabinet lighting subsystem shall be provided comprised of the following components:

1) One fluorescent lighting fixture, minimum 15-watt, mounted on the inside top front portion of the cabinet, with a cool white lamp with shatter-proof cover and operated by a normal power factor UL listed ballast.
2) A resistor-capacitor network noise suppressor installed across the light fixture power terminals.
3) Two door-actuated switches installed to turn on the cabinet light when either door is opened.
4) Powered from the ACCY POWER distribution block.

RDS Communications Subsystem: Where RDS are shown in the plans, DIN rail-mounted components shall have a nominal 24VDC output power supply, capable of user setting between 23 and 28VDC minimum, with minimum 1A output rating and minimum operating temperature range of -13°F to +158°F. Power supply shall provide terminal facilities for a minimum of three sets of #14 AWG conductors (in the RDS comm cable). Maximum size of the power supply shall be 1 inch (W) x 7 inches (H) x 7 inches (D). The power supply shall be connected to the EQUIP POWER distribution block for 120VAC input.
If a terminal server is used, interconnection wiring shall be provided between the RDS communications subsystem and the terminal server.
Where an RS-485 communication cable is installed, a surge suppressor for the RS-485 data signal, wired between the terminal server and the RDS units shall be provided. The surge suppressor shall protect the 4-wire RS-485 data signal with hybrid multi-stage suppression components including gas tube and silicon avalanche diode. The surge suppressor shall have a response time no greater than 1 nanosecond. The surge suppressor shall provide terminal facilities for a minimum of four (4) 2-pair cables of #22 AWG conductors.
Component Subsystem: The requirements listed for each component's subsystem shall be met by installing the required power, surge, etc. support equipment in the Type B Cabinet where that component is shown in the plans.
Type C Communication Hub Cabinet: A complete Type C cabinet shall be an assembly consisting of cabinet housing, base and electrical subsystems.
The Type C cabinet shall be an AASHTO/ITE/NEMA ITS Cabinet Standard specification Cabinet Housing #3 with two Cages #1. It shall be equipped with four (4) side mounting panels in the rack cabinet cages. The side mounting panels shall mount from inside the rack cabinet cage only. The side panels shall be fabricated from 5052 sheet aluminum alloy with a minimum thickness of 0.125 inch with minimum dimensions of 50 inches (H) x 21 inches (W). Standard cabinet accessories for traffic signal operations, such as controller, power distribution assembly, input/output file and termination panels, and the police panel, are not required as part of this cabinet assembly.

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A minimum of four (4) wiring pass-through holes shall be provided on the inside mounting panels to permit patch cords to pass between the two cabinet sides. Each pass-through hole shall be five (5) inches in diameter and shall be fully grommeted for patch cord protection, with the holes positioned with two (2) in the cabinet front and two (2) in the cabinet rear and aligning horizontally between the two side panels.

Hardware: The hardware shall consist of a minimum of 16 plastic-coated or rubber-coated J-hooks or D-rings, minimum 1-inch depth and height, on the inside rails of the rack cabinet cages, to organize patch cords passing between the two cabinet sides. The J-hooks shall be installed in horizontally aligned pairs on the inside rails, with four (4) pairs in the cabinet front and four (4) pairs in the cabinet rear.

Hooks shall be welded to the inside of the two front cabinet doors for hanging the plastic documentation pouch. Two plastic documentation pouches shall be provided to store the cabinet and equipment documentation. Pouches shall be side-opening, re-sealable, opaque, and heavy-duty plastic material. Pouches shall have metal or hard-plastic reinforced holes for hanging from hooks included on the cabinet door. The pouches shall be of the size and strength to easily hold all wiring diagrams, equipment documentation, maintenance logbooks, etc.

Two sliding drawers shall be installed that are aluminum storage compartments mounted in the rack assembly with the approximate following dimensions: 1.75 inches (H) x 16 inches (W) x 14 inches (D). The compartments shall have telescoping drawer guides to allow full extension from the rack assembly. When extended, the storage compartments shall open to provide storage space for cabinet documentation and other miscellaneous items. Storage compartment shall be of adequate construction to support a weight of 25 pounds when extended. The tops of the storage compartments shall have a non-slip plastic laminate attached which covers a minimum of 90% of the surface area of the top.

Electrical Systems: Type C cabinet electrical subsystems shall include an electrical distribution module comprised of the following components:

1) Service entrance terminal block with positions for 120VAC line, neutral, and ground and capable of terminating minimally #6 through #8 AWG wire, located at one end of the mounting rail with an approximately 0.75-inch blank spacer module adjacent to the main cabinet breaker.
2) Main cabinet automatic overcurrent minimum 30A circuit breaker that is UL-489 and CSA 22.2 approved and plainly marked with trip, frame sizes and ampere rating. All circuit breakers shall be quick-make, quick-break on either automatic or manual operation. Contacts shall be silver alloy and enclosed in an arc-quenching chamber. Overload tripping shall not be influenced by an ambient air temperature range from 0°F to 122°F. Minimum interruption capacity shall be 5,000 amperes RMS.
3) Main cabinet surge suppressor for single-phase 120VAC service entrance, parallel wired with a clamp voltage of approximately 280V and capable of a surge current of at least 20,000 amps.
4) Main cabinet filter for power line noise and switching transient suppression, integral to, or separate from and wired to, the main cabinet surge suppressor.

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5) Electrical distribution terminal block for line and neutral conductors parallel wired to the main cabinet surge suppressor but non-filtered, with a minimum terminating capability of six conductors of #10 to #18 AWG. The terminal block shall be label as "ACCY POWER".
6) Electrical distribution terminal block for line and neutral conductors for circuits on the load/equipment side of the power line filter, with a minimum terminating capability of six conductors of #10 to #18 AWG. The block shall be as "EQUIP POWER".
7) Electrical distribution terminal block for grounding and bonding conductors located on the same rail but separate from the service entrance terminal block and connected to the entrance ground with a #6 AWG green insulated wire. The grounding block shall have a minimum terminating capability of two #6 AWG conductors and ten #10 to #18 AWG conductors.
8) Ground fault interrupt duplex receptacle (NEMA 5-15R) with 2.5A circuit breaker connected to the ACCY POWER distribution block. Two red, orange or green/yellow labels with minimum 0.25-inch lettering with the legend "300 WATTS MAX" permanently affixed to the receptacle. This receptacle is for technician use only and shall not be used to power equipment.
9) Two duplex non-GFCI equipment power receptacles (NEMA 5-15R) connected to the EQUIP POWER distribution block mounted on the upper rear corner of the cabinet upper right-side panel.

Interconnection wiring shall be installed between all electrical distribution module components and the other systems included in or housed in the Type C cabinet.
Rack mounted power strip outlets shall be connected to the EQUIP POWER distribution block, mounted near the top of the cabinet. The power strip shall incorporate eight (8) NEMA 5-15R receptacles. The power strip receptacle shall face the back of the cabinet and shall be recessed within the cabinet rack to provide a minimum spacing of three (3) inches between the outlet's face and the cabinet door when the door is closed.
Door open switches shall be provided on four doors and configure the switches so that any single door opening will provide a circuit closure. The assembly of switches shall be wired to a single two-position terminal block, with normally open circuit that closes upon a door opening.
Two cabinet ventilation fans shall be connected to the ACCY POWER distribution block, with a minimum capacity of 200 cubic feet of free air delivery per minute. The fan thermostat shall be set at its lowest limit or 70°F, whichever is greater.
Each of the four cabinet doors shall have an intake and filter as specified in Subsection 6.2.7.1 of the AASHTO/ITE/NEMA ITS Cabinet Standard specification.
Lighting Subsystem: The lighting subsystem shall be four (4) LED lighting fixtures mounted inside the top portions of each cabinet side. A cool white lamp, covered and operated by a normal power factor UL listed ballast shall be included with the fixture. A RC network noise suppression filter shall be installed in the light circuit. Door actuated switches shall be installed in the front and rear of each cabinet side, configured to turn on all cabinet lights when any door is opened. The lighting fixtures shall be powered from the ACCY POWER distribution block.

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CONSTRUCTION REQUIREMENTS:

General: This work shall meet the following general requirements:

Cabinets shall be installed and configured as shown in the plans and according to manufacturer's recommendations, including installations and dimensions given for pole-mounting in relationship to the surrounding grade.

All cabinets shall be bound to the pole grounding lug with minimum #6 AWG stranded copper bare or green-insulated cabinet grounding wire. Alternately on existing poles only, the cabinet grounding wire shall be bound to an existing pole grounding wire with a cast brass or copper alloy threaded compression connector within 4 inches of the existing pole grounding lug.

Electrical service or electronic devices shall not be installed in the cabinet or connected to the cabinet until ground testing for the pole or structure has been successfully completed and accepted, and the cabinet ground connection has been installed.

A cabinet wiring and interface diagram shall be provided and included in the required hanging, side-opening, re-sealable opaque, heavy duty plastic documentation pouch.

Type B: Equipment in the Type B cabinets shall be installed and configured in accordance with the requirements for that equipment, including RDS units, BDS units, VDS units, CCTV, network switches, radios/antennas, communication cables, and/or fiber distribution or drop panels.

Electronic devices shall not be installed in the cabinet until electrical service has been installed and activated, and the cabinet ventilation fan is operational.

Network switches and video encoders shall be installed in the topmost area of the cabinet rack. The equipment receptacles shall be used for power.

Supporting equipment/electronics for CCTV shall be installed on the lower area of the cabinet upper left side panel. There shall be no physical or access conflict with the network switch and video encoder. The EQUIP POWER distribution block shall be used for the power source.

Fiber drop panels shall be installed in a vertical configuration on the lower rear edge of the cabinet upper right-side panel.

Testing: All equipment associated with the ITS equipment cabinet shall undergo testing to verify conformance to requirements of the plans and special provisions. The Contractor shall conduct a Project Testing Program as required in the plan “General Notes”. All costs associated with the Project Testing Program shall be included in the overall contract price; no separate payment will be made for any testing.

Submittals: The submittal requirements defined in the plan “General Notes” shall be met unless otherwise specified in the plans. All costs associated with submittals shall be included in the overall contract price; no separate payment will be made for any documenting and submitting.

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Quality Assurance: The quality assurance requirements defined below and in the plan "General Notes" shall be met unless otherwise specified in the plans. All costs associated with the quality assurance requirements shall be included in the overall contract price.
Installation or modification of the cabinets, hardware, and incidentals shall be done so in a good and workmanlike manner. All components and cables shall be placed in an organized fashion. Cables with excessive slack shall be zip-tied and/or placed so that they do not impede access to any components. Any debris associated with the installation or modification shall be cleaned and removed. All power supplies, surge suppressors, and components with the ability to be DIN rail or panel mounted, should be.
Standalone Acceptance Test (SAT): A SAT shall be performed on all equipment cabinets on this project after field installation is complete including, but not limited to, all field devices (RDS, CCTV, communications electronics, etc.) to be installed in or connected to that given cabinet.
A SAT for a given equipment cabinet shall only be performed in conjunction with the SAT for all devices installed in or connected to that given cabinet.
A visual inspection shall be made of the installation and the cabinet documentation.
Functional test shall be made of all cabinet equipment, including circuit breakers, receptacles, fan and thermostats, lights and door switches.
A measurement of DC power supply shall be made when operating under full load.

METHOD OF MEASUREMENT: Equipment Cabinets of the type specified will be measured per "Each".

BASIS OF PAYMENT: Equipment Cabinets, measured as prescribed above, will be paid for at the contract unit price per "Each", which shall be full compensation for all labor, tools, materials, equipment, system integration, testing, system documentation and submittals, mounting hardware, foundations, fiber splicing, external conduit entrances including conduit bodies and nipples, electrical service, pole grounding, terminations, and all incidentals necessary to complete the work and quality assurance.

Progress payments for Equipment Cabinets will be paid in accordance with the following:

- 80% of the contract unit price for complete installation of equipment cabinet and all interior components, electrical service feed (activated), interior cabinet components, all conduit entrances, grounding connection, and testing;
- An additional 10% of the contract unit price for completion of Standalone Acceptance Test (SAT) on site of all field devices housed or connected to the equipment cabinet; and
- Final 10% of the contract unit price upon Final System Acceptance.

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ITS EQUIPMENT CABINETS

Payment will be made under:

Pay Item	**Pay Unit**
Equipment Cabinet, Type B	Each

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ROAD WEATHER INFORMATION SYSTEM (RWIS)

DESCRIPTION: The Road Weather Information System (RWIS) consists of furnishing, installing and integrating a Road Weather Information System (RWIS). The work will be at the locations shown on the plans and will consist of providing all labor, materials, equipment and necessary incidentals to furnish, install, test, and make functional the RWIS. The sites for these systems will be at locations with known adverse weather conditions such as freezing, fog, flooding, high winds, etc. but may be placed at any location where system deployment for roadway weather information monitoring is deemed desirable by the Department.

The RWIS installations shall include all site preparation necessary for installation of the base station, communications/surveillance tower(s), cabinet bases, roadway sensors, temperature sensors, atmospheric sensors, pavement sensors, conduit and cable for remote sensor equipment, advance warning signs with flashers, system software installed at the Traffic Management Center (TMC) and all other equipment and related appurtenances to accomplish a complete and fully operational RWIS as described in this special provision and the details and plans developed for the specific sites.

MATERIALS: The Road Weather Information System (RWIS) shall include, but is not limited to, the equipment and materials included in this Special Provision. The Contractor is responsible for determining and providing any other equipment that is needed for safe and reliable operation of an RWIS. All materials shall comply with the “Buy America – Construction Materials” Special Provision.

In general, the system shall include a base station, and a pole or structure mounted remote sensor unit. The base station will include an appropriate Remote Processing Unit (RPU) for communications to a central processing server site, communications/networking equipment, atmospheric weather sensors, power supplies, surge protection, power distribution, cabinets, tower(s), base(s) and mounting structures. The remote processing unit for the sensors will include nonintrusive pavement sensors, present weather and visibility sensor(s), an equipment cabinet, and communications system. Except where noted on the plans, the remote sensor unit(s) shall be AC/DC powered and communicate with the base station via an Ethernet/IP and/or wireless communications system. The communications system shall connect the remote sensor unit(s) to the Department’s ITS network.

The RWIS Controller will be placed in a cabinet, and the sensor cabinet shall be mounted as shown in the plans per manufacture recommendations.

REMOTE PROCESSING UNIT (RPU): The master Road Weather Information System (RWIS) RPU (Remote Processing Unit) shall include a CPU (Central Processing Unit), with flash memory, expansion slots, and interface ports including Ethernet, RS-232 serial, and RS-485 serial. These

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ports are for system maintenance and device interfaces. All RPU electronics shall provide stable operation over a temperature range of -40ºC to 60ºC and 0-90% RH (Relative Humidity) non-condensing. The RPU will be capable of multi-tasking operations to optimize data acquisition from all connected devices. RPU (Remote Processing Unit) software configuration shall be performed by PC computer connection to the RPU Ethernet port or serial port.

COMMUNICATIONS EQUIPMENT: The RWIS RPU (Remote Processing Unit) shall communicate via Ethernet/IP with a central server and shall utilize Federal Standard NTCIP-ESS protocol, with some manufacturer-specific objects allowed. The server shall poll the RPU and be able to gather information and provide a communications interface via an Ethernet network connection to monitor weather conditions, traffic parameters as described in this specification and on the detailed plans prepared for the sites included in this project.

RWIS DATA: The data collected by the RWIS will be processed and temporarily stored in the RPU until transmitted to a central processing server site. Updates shall be completed on intervals not longer than every two minutes. The RWIS data shall be stored and displayed on a central processing server site, and available for access by agency users and designated information users on any PC connected to the Internet running Microsoft Edge or approved ARDOT web browser software. The RWIS user displays shall include all sensor data in a browser-based display format.

CABINET: The RPU shall be enclosed inside at a minimum with a NEMA 3R lockable aluminum enclosure that is resistant to damage by weather and vandals. All equipment, connectors, cables, power supplies, surge protection, grounding, power distribution, mountings, shelves, racks, fasteners, mounting, and base necessary to accommodate a fully operational RWIS shall be included as incidental to the cabinet and its installation.

The cabinet shall include a thermostatically controlled ventilation fan to adequately remove heat within the cabinet to prevent performance degradation and reduced reliability. Ventilation fan and filter louver shall be screened against the entrance of dust and foreign matter. A replaceable filter for incoming air shall be provided. The fan shall include a resistor-capacitor network noise suppressor installed across the fan motor power terminals.

All cabinets shall be provided with agency name, project number, device name and ID labels. Labels shall meet the following minimum requirements.

1. Labels shall be flat black lettering on a reflective white background. Lettering shall be a minimum of one inch (1”) in height.

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2. Labels shall be manufactured from pre-coated adhesive backed reflective sheeting material meeting the minimum requirements of AASHTO Designation: M268, Type 1.
3. The agency name labels shall be "ARDOT ITS" in one continuous adhesive sheet.
4. The device ID labels shall include the device name as an acronym and a hyphen and shall be one continuous adhesive sheet.
5. The device ID shall be numerals corresponding to the location and shall be installed adjacent to the acronym sheet.
6. The device ID labels shall also include large 3-inch letters on the side of the cabinet that the ground plane is located that states "WARNING: UNDERGROUND WIRING - NO DIGGING"
7. Labels shall be installed along the top of the cabinet, with ARDOT ITS label at the top and the device ID labels immediately underneath. Labels shall be visible from both directions of travel. Additional labels may be required to meet visibility requirements. Project number labels shall be installed on the inside of the cabinet door.

A voltage label shall be provided on all RWIS transmitter cabinets in accordance with the NEC labeling requirements. Voltage labels shall meet the following minimum requirements.

1. Labels shall be flat black lettering on a reflective yellow background. Lettering shall be a minimum of one inch (1") in height.
2. Labels shall be manufactured from pre-coated adhesive backed reflective sheeting material meeting the minimum requirements of AASHTO Designation: M268, Type 1.
3. Labels shall include the voltages entering the cabinet and there shall be one continuous adhesive sheet. Examples are "120VAC" or "120/240VAC".
4. Labels shall be installed on all cabinet doors.

Door locks shall be provided for all RWIS base and remote units cabinet doors all keyed to a Corbin No. 2 key type lock to be operated with a Corbin No. 2 key made from heavy-duty blanks. Two keys shall be provided with each cabinet.

All cabinets shall include a lighting fixture appropriate for the power source used. 120 Volt, fluorescent fixtures will be a minimum 15 watts with a cool white lamp with shatter-proof cover and operated by a normal power factor UL listed ballast. The fixture will be mounted on the inside top portion of the cabinet. The light shall be door switch controlled.

SENSORS: The Road Weather Information System (RWIS) shall include sensors which shall provide the following information:

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Atmospheric Conditions: Sensors for the following conditions shall be provided and installed at the master RWIS site.

1) Air temperature
2) Relative humidity
3) Barometric pressure

Pavement Conditions: Sensors providing pavement conditions shall be installed at the location shown on the plans. It is the intent that the pavement sensors be positioned to measure data where the roadway surface conditions are representative of the overall surface. Pavement sensors mounted on the overpass will be AC/DC powered and communicate via manufacturer recommended cable with the RPU at the base station, unless otherwise specified in the plans.

Pavement temperature
1) Precipitation classification
2) Pavement water/snow depth

Visibility Conditions: Sensors providing visibility conditions shall detect conditions including rain, drizzle, snow, fog, mist, haze or clear; and Visibility with a measurement range of two (2) miles at a minimum with an accuracy of ±10%.

Power. The Contractor shall be responsible for locating power service points. Locations shown on the plans as service points are shown for information only.

Warning Sign Assembly with Flashing Beacons. The RWIS installation shall include the furnishing and installation of new advance warning signs at the location shown on the plans. Mounting of the signs will conform to the design as shown in the plans and will be a breakaway sign support as shown in Standard Drawings SHS-3 and SHS-4. The messaging of the sign will be as shown in the plans. The materials used for the sign shall comply with section 723 of the 2014 Standard Specification and Supplemental Specification SS-723-1. The materials used for the breakaway sign support stall comply with section 730 of the 2014 Standard Specifications and Supplemental Specification SS-730-1.

When applicable, the standard sign as shown in the Manual on Uniform Traffic Control Devices (MUTCD) or the Department's Standard Drawings will be provided.

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The sign shall be supplemented with a two 12-inch flashing warning beacon which are AC powered to provide continuous operation of the flashers, timers, communications, etc. The warning beacon shall be LED.

The beacons shall have a flash rate as specified in the Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD).

The supplemental flashing beacon shall be activated and deactivated from the RWIS central processing server site and the Department TMC via communication through the RWIS base station, unless otherwise shown on the plans. The activation and deactivation of the flashing beacons will be based on adjustable thresholds set at the RWIS base station and manual control in the TMC. Ethernet communications from the central processing server and Department TMC to the warning sign sites shall be via communication systems as shown on the plans. The sign sites shall include an adjustable automatic shutoff timer that will automatically turn off the flasher in a predetermined amount of time if activation is not renewed.

The Contractor may propose an alternative activation system submitted to the Engineer for review and consideration by the Department.

All beacon control and power components shall be housed in, at a minimum, a NEMA 3R type aluminum cabinet/enclosure unless otherwise specified in the plans. The cabinet/enclosure shall be constructed from 0.125-inch-thick Aluminum Alloy, Type 5052-1132. The cabinet/enclosure door shall be lockable in accordance with previous sections in this Special Provision.

STANDARDS: All materials, equipment, supplies, installations and testing shall comply with the project requirements, the latest editions of the following standards and industry practices as applicable, and all other standards, requirements and standard industry practices, and any state and local codes or ordinances that may apply.

Standards and industry practices shall include but not be limited to the following.

1. Federal Communications Commission (FCC) regulations
2. National Electric Code (NEC)
3. Underwriters' Laboratories Inc. (UL)
4. National Electrical Manufacturer Association (NEMA)

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5. Institute of Electrical and Electronic Engineers (IEEE)
6. American Society of Testing and Materials (ASTM)
7. American National Standards Institute (ANSI)
8. Lightning Protection Institute (LPI)
9. National Electrical Safety Code (NESC)
10. Occupational, Safety, and Health Act (OSHA)

All materials, equipment, accessories and components that are not in accordance with the specific standards and requirements shall require approval by the Department. The Contractor shall bring any conflicts between referenced industry specifications and this Special Provision to the attention of the Engineer.

The Contractor shall use the latest version of referenced industry specifications, standards, and practices in force and in existence as of this project's advertisement date unless otherwise noted.

The Contractor shall acquire and use all applicable manuals, guidelines, and standards and practices that apply to the design, construction, and testing activities required to complete this project.

SUBMITTALS: All costs associated with submittals shall be included in the overall contract price; no separate payment will be made for any documenting and submitting.

QUALITY ASSURANCE: The quality assurance requirements defined in the plan "General Notes" shall be met. All costs associated with the quality assurance requirements shall be included in the overall contract price.

CONSTRUCTION REQUIREMENTS: The Contractor shall be responsible for locating power and communications service points. Locations shown on the plans as service points are shown for information only. The Contractor shall be responsible for providing all hardware, software and licenses to operate a complete system.

The Contractor will be responsible for all integration of the data and information described in this special provision into the Department's communications network, the iDriveArkanas.com web site, and the Department's traffic information system.

All equipment shall be installed according to the manufacturer's recommendations, the Plans, and as follows:

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- Materials and associated accessories/adapters shall not be applied contrary to the manufacturer's recommendations and standard practices.
- The equipment shall be designed to prevent reversed assembly or improper installation of connectors, fasteners, etc. Each item of equipment shall be designed and installed to protect personnel from exposure to high voltage during equipment operation, adjustments, and maintenance.

The Contractor shall furnish and install all supports, clamps, cables, connections and other materials to secure the RWIS at the selected locations. The type of mounting poles to be supplied and the location of their installation shall be as specified herein and depicted in the Plans.

The Contractor shall be responsible for locating possible utility conflicts prior to excavating and installing the ground-plane system. In case of space limitations or structural modification constraints, the Engineer shall be informed prior to site construction.

The Contractor shall perform detailed pre-installation site surveys to determine the conditions at each site (e.g., power, grounding, communications, etc.) for the intended purpose and performance
criteria.

Do not install electronic devices in the cabinet until electrical service has been installed and activated, and the cabinet ventilation fan is operational.

TESTING: All equipment associated with the RWIS site shall undergo testing to verify conformance to requirements of the plans and these special provisions. All costs associated with the Project Testing Program shall be included in the overall contract price: no separate payment will be made for any testing.

WARRANTY: The Contractor shall obtain and assign to the Department transferable manufacturers' warranties or guarantees on all electrical and mechanical equipment, consistent with those provided as customary practice. The Contractor shall guarantee satisfactory in-service operation of the mechanical and electrical equipment and related components for a period of 6 months following completion of the 30 day performance test, at no cost to the Department. Defective equipment or accessories shall be repaired or replaced according to applicable specifications and to the satisfaction of the Engineer, within a reasonable period of time during the 30 day performance test and the 6 month guarantee period.

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METHOD OF MEASUREMENT: Road Weather Information System (RWIS) will be measured per "Each" system used. The Road Weather Information System (RWIS) shall be measured for payment as follows:

- 30% of the contract unit price upon approval of and Pre-Installation test results.
- 70% of the contract unit price upon approval of Stand-Alone Site Test results.
- 90% of the contract unit price upon completion of the burn-in period.
- 100% of the contract unit price upon Final System Acceptance.

Warning Sign Assembly with Flashing Beacons will be measured per "Each" sign assembly upon demonstration of successful activation, de-activation, and automatic turn-off.

BASIS OF PAYMENT: Road Weather Information System (RWIS), measured as prescribed above, will be paid for at the contract unit price per "Each", which price shall include furnishing, installing, licensing application, coordination and acquisition, communications activation and monthly billing costs, RWIS grounding design submittal, system integration, and testing of a complete RWIS and software including the RWIS equipment/components as specified herein including grounding, power distribution/supply, surge protection, the cabinet, all cabling, connections to support structures (includes all incidental components, attachment hardware, mounting brackets, bolts, straps, or any other items to mount the RWIS equipment / components as intended), all required software, satisfactory completion of testing requirements and all work, equipment and appurtenances as required to effect the full operation including remote and local control of RWIS sites complete in place and ready to use, system documentation and submittals (including shop drawings, operations and maintenance manuals, wiring diagrams, block diagrams and other materials necessary to document the operation of the RWIS), warranties, all labor, tools, materials, equipment and incidentals necessary to complete the work and quality assurance.

The Warning Signs Assembly with Flashing Beacons, measured as prescribed above, will be paid for at the contract unit price per "Each", which price includes furnishing, installing, system integration, and testing of a complete warning sign with flashing beacons including the sign materials, sign supports, support foundations, flashing beacon, controller, communications equipment, cabling, conduit, connections, satisfactory completion of testing requirements, all work, equipment and appurtenances as required to effect the full operation including remote and local control of Warning Sign Assembly with Flashing Beacons sites complete in place and ready to use, system documentation and submittals (including: shop drawings, operations and maintenance manuals, wiring diagrams, block diagrams and other materials necessary to document the operation of the warning signs with flashing beacons), warranties, quality

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assurance, all labor, tools, materials, equipment, and all incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Road Weather Information System	Each
Warning Sign Assembly with Flashing Beacons	Each

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PORTABLE TRAFFIC SIGNAL SYSTEM WITH TRAFFIC TIMER UNITS - COUNTDOWN

1. **DESCRIPTION:** This item shall consist of furnishing and installing at location(s) shown on the plan sheet(s) or as directed, a Portable Traffic Signal System with electronic Traffic Timer Units - Countdown. All requirements of Standard Specifications for Highway Construction, Edition of 2014, shall apply. Portions of the standard specifications may be superseded by this special provision. Signal Timing shall be approved by the Engineer and ARDOT District personnel and modified to accommodate vehicles served during the various agricultural seasons of the area.

   A. GENERAL: This specification outlines an operationally independent self-contained system for temporary traffic control. Included are the specifications for the portable mast arm trailer, the traffic control unit with cabinet and terminal facility, vehicle actuation, wireless communications, solar system for battery charging, battery system and other ancillary equipment necessary to provide a complete working system.

   The Portable Traffic Signal System provided by the Contractor shall include an electronic digital traffic signal timer unit - countdown at each end of the bridge with a message sign approximately 30” x 20” x 2.73” to enhance compliance for waiting vehicles at both ends of the bridge. The Portable Traffic Signal System with traffic timer units - countdown shall be solar charged with a battery back-up to provide sufficient power to the system’s operation 24 hours a day for 7 days a week in all weather conditions. Operation of this system is critical, because the bridge on this project is almost a mile in length with traffic moving heat-to-head in an 11’- 0” single lane at reduced speeds, and with limited sight distance. The Contractor shall provide traffic timer units - countdown compatible with the Portable Traffic Signal System and comply with all manufacturer requirements for installation, operation, synchronization with the signals, messaging, troubleshooting, plus provide any required auxiliary equipment for the traffic timer units - countdown. The Contractor shall be responsible for the safe operation of the signals and traffic timer units - countdown and shall monitor the system frequently for inconsistencies and malfunctions. Should issues occur with the signals and traffic timer units - countdown, the Contractor shall immediately (within 15 minutes) provide trained flaggers with radio communication to direct traffic until the units can be fully operational again.

   The Contractor may use traffic timer units - countdown from OMJC Signal @ 1-800-776-5999 or a comparable traffic timer unit – countdown product compatible with the requirements of the Portable Traffic Signal System – Actuated requirements in this special provision.

   B. FUNCTIONAL: The system shall include, at a minimum, the following features:

   (a) MAST ARM TRAILER:

   The unit shall be a towable, trailer mounted, hydraulically lifted mast and arm. It shall have two (2) 12-inch, 3 section traffic signal heads with (optional) back-plates. The unit shall include a battery powered hydraulic pump for raising and lowering the arm.

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Lifting mechanisms using cable, winches, or linear actuators are not acceptable. The chassis of the unit shall provide multiple points at which auxiliary equipment may be mounted. The trailer shall have 15-inch wheels; fenders, and standard DOT required trailer lights. The unit shall have a drop tongue that can be hinged down and locked toward the ground as well as be removable. The tongue shall be provided with a standard 2" inch ball hitch. There shall be 2000 lb capacity extendable leveling jacks at each of the four corners of the trailer. In the folded position, the unit less the hitch shall not exceed the following over-all dimensions: 84" width, 150" length, or 114" height. The removable hitch will typically extend 56 inches in front of the trailer. In the horizontal position, the trailer mast arm shall have a fixed 9' reach from the side of the trailer and give a minimum of 17' feet clearance over the baseline established by the jacks. A lock or fixed mechanism shall keep the arm from lowering once the reach is established. With two ITE approved 12" 3-section signals in place: one at the outer end of the arm, the other mounted on the vertical mast, each equipped with optional back-plates and tunnel visors. The unit shall withstand 80 mph wind gusts. The wind gust rating assumes that the entire weight of the unit is carried by the jack stands, that the unit is level, and that the jack stands are on clean, dry pavement. The chassis and mast shall be labeled to designate pinch points, electrical hazards and overhead power line cautions. There shall be an electrical grounding-lug provided to terminate to a user supplied driven electrical ground. The primary pivot point of the mast, when fully extended, shall have a positive mechanical lock to ensure that the mast remains upright. All other joints and extensions of the mast or arm shall have positive mechanical locks or pins to prevent the collapse or unauthorized movement or dismantling of the mast or arm. The unit shall have a receiver type hitch in the rear, enabling a receiver tube to be installed for towing multiple units in tandem. The unit shall include a rear electrical receptacle for plugging in lights from a 2nd unit for tandem towing. The hydraulic pump shall power the mast in both up and down directions. The pump flow shall be restricted to limit the maximum speed of travel of the arm to a safe speed. Operator safety shall be enhanced by the use of a nonconductive pendant to operate the pump via a minimum 6' long cable, allowing the operator to step away from the trailer so that he can clearly watch the mast as it rises to observe for power lines, traffic or other obstructions. The hydraulic pump and pump battery terminations shall be housed in a lockable enclosure. The unit shall be powder coated with a highway safety orange, and have reflective decals placed appropriately to meet DOT requirements for where used. The unit shall have an axle and suspension rated adequately to handle the overall trailer weight. Trailers that have a gross weight of over 3,000 pounds shall be equipped with trailer brakes. The system shall comply with the requirements for Portable Traffic Control Signals as defined in the Federal Manual of Uniform Traffic Control Devices (MUTCD), Part IV, 4D, including specifically the requirements pertaining to signal heads, lamps, spacing of signals, clearance, and number of signal faces. For optimizing signal viewing, signal mountings shall allow a 180 degrees' vertical axis of rotation and adjustments also for up and down alignments.

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The system shall be delivered with matching key padlocks for all the enclosures.

(b) EMERGENCY PORTABLE MAST ARM KNOCK-DOWN CAPABILITY:

Each independent portable signal trailer shall have the capability to flash yellow or red or be used as a “knock down” replacement portable mast arm, independent of other trailers. In this case the control system shall enable external AC signal inputs to run the LED signal heads independent of the normal control system.

(c) TRAFFIC SIGNAL TIMER CONTROLLER:

The controller shall conform to NEMA TS-1 controller functionality and shall be menu driven through a menu driven display and keypad. The display shall be able to show programming parameters, and real-time operational parameters not limited to each timing interval being timed including green min, green max, green extensions, yellow, and red as well as which phase is being timed. Standard traffic signal nomenclature shall be used, making the assumption that a movement of traffic is a phase and that individual parts of the phases timing are intervals. The controller shall have a minimum 8 phase controller functionality and shall have a minimum of 6 output circuits at each master or remote location. If the trailer signal outputs are DC for DC LED signal heads, provision shall be provided for running the DC signal heads from an AC signal source. The traffic controller shall have the following additional features:

- **GREEN RECYCLE:** The controller shall be set up to enable a “recycle” in the middle of the “all red clearance” time when the phase just clearing is headed toward a red rest but receives a vehicle call and there is no other phase receiving a call to service. When this controller is being operated in an actuated mode, this feature shall time an adjustable interval, typically 5 seconds, before engaging the recycle. The recycle when activated recycles back to green of the last phase serviced, cutting off the remaining “all red time”. (This is sometimes called “green revert”.) In no case would the recycle be activated if vehicle calls (or any type of call to service) remain on any other phase. The all-red time related to each phase using the “green recycle” is effectively made up of two-timing intervals, the first a minimum 0-25.5 second interval and the second an interval of minimum 0-255 seconds.
- **CONTROLLER MEMORY:** The controller shall have the ability to register and retain a vehicle call on any designated phase if the vehicle call was made at the time when the clearance intervals were initiated. This is to ensure that the phase is serviced at the next appropriate place in the controller phasing, reducing the likelihood of traffic being trapped in the “detection zone”. The controller and power systems shall have adequate over current protection using breakers or fuses. Fuses shall be industry standards if used.
- **CONFLICT MONITOR:** The conflict monitor shall conform to minimum NEMA TS1 monitor functionality. Monitors shall be factory tested before installation. A

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multiple trailer signal system consisting of master-secondary arrangements shall, by design, remain inoperable unless the conflict monitor is installed. Provision shall be made in the monitoring system to accommodate different phasing and numbers of remote trailers. It shall also be able to monitor 5 section heads. Monitoring shall be done according to standard permanent signal conventional functionality except for having connections being made wireless through the radio system.

- **MODES OF FAILURE:** If the conflict monitor orders a fail mode, the traffic signals shall display a default flashing red (also programmable yellow, steady yellow and steady red) at both ends of the work zone. If there is a loss of power, the traffic signals shall be dark on the trailer affected and the traffic signals on the other trailer shall flash. The monitoring system shall be able to detect the difference between soft and hard fail conditions. If enabled, soft fail conditions such as losing the radio signal shall enable the system to restart if and when the soft fail condition is corrected.
- **I/O MAPPING:** The controller system inputs and outputs shall be map able. This shall as a minimum enable detector and phase assignments to be changed.
- **VEHICLE ACTUATION:** The system shall be able to run in pre-timed, actuated or semi-actuated modes. This shall be programmable through the keyboard. Each unit (Master and Secondary) shall have a non-intrusive vehicle detector mounted on its mast arm, which shall require no pavement cuts or any connection to the pavement. The detector shall be capable of covering one or more lanes and have a detection range of up to 200 feet for cars and trucks, assuming straight, level pavement. Other optional detection systems shall be compatible with system inputs.
- **PREEMPTION:** The control system shall be able to accommodate the addition of preempt inputs. The preemption programming shall be as typical for permanent traffic signal equipment.
- **TIME BASE COORDINATION:** The controller shall have an internal time clock and internal time base coordination. It shall have the optional capability to coordinate into existing traffic systems.

(d) WIRELESS COMMUNICATION/INTERCONNECTION: The following shall be the minimum common requirements for Wireless Transceiver. It shall:

- Operate in license-free, Spread Spectrum bands (902-928 MHz) utilizing Frequency Hopping.
- Be capable of maintaining wireless communication in all types of terrain without direct line of sight.
- Operate multiple user-selectable non-overlapping hopping patterns.
- Be completely configurable via the provided menu driven display/keypad.

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- Provide Bi-directional radio transmission with confirmation.
- Real time' data transfer ensuring multiple transfers of data with error checking for live monitoring.
- Have LED indicators for PWR/RF Link Status.
- Have an operating temperature of -40 to +80 degrees C.
- Operate within the full operating voltage ranges of the DC system.
- Programmable RF output levels of 1 mW, 10 mW, 100 mW or 1 Watt c/o supplied operator interface.
- Operate as Master, Remote, or Repeater.
- Have RSSI signal strength indicator LEDS.
- Allow firmware updates c/o industry standard port.

(e) RADIO REMOTE FOR FLAGGER OR PILOT CAR CONTROL:

A handheld remote pendant shall be provided that can be used to increment the signals. Provision shall be provided to prevent overriding the clearance times. It shall have a display showing the status of the trailer system signal indications. It shall be powered by a standard 12VDC cigarette lighter plug.

(f) CABINET REQUIREMENTS:

The radio, monitoring and control equipment shall be enclosed in a weather tight enclosure of NEMA 3R standards. It shall also contain a battery charger (120VAC input) and charge controller. The bottom of the cabinet shall have a spring-loaded trap door access hole for running a power cord into the battery charger.

(g) SIGNALS:

The system shall be designed to use LED traffic signal heads. In a fail mode the signal system shall be programmable for flash or steady, and yellow or red color.

(h) BATTERIES:

The batteries shall be a deep cycle lead acid absorbed glass mat (AGM) type. They shall be hermetically sealed and shall be maintenance free. Batteries shall be housed in enclosure(s) secure from vandalism, theft, and weather. The enclosure(s) shall also keep the batteries securely in place during transport. Battery capacity on the Master and Secondary trailer shall be adequate to allow up to 21 consecutive days of operation without any additional charging.

(i) SOLAR CHARGING OPTION:

Each unit (Master and Secondary) shall have adequate solar charging capacity to insure that each can operate independently of line power or auxiliary charging devices for a minimum of the six best solar months in the 48 contiguous states of the United States. The solar array on each unit shall be capable of tilt adjustment on 2

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axis in order to maximize the efficiency of the solar panels. The panels shall be fastened in a secure manner. Panel mounting hardware shall use high security bolt heads. The solar arrays shall be capable of being stowed in a manner so that they are entirely within the boundaries of the framework of the trailer and minimize wind resistance when the trailer is towed.

(j) BATTERY CHARGER:

A 120VAC battery charger shall be provided for the instance when batteries need to be charged from an external source. It shall be rated at a minimum wattage of 360 watts.

(k) CHARGE CONTROLLER:

A charge controller shall be provided for interfacing between the solar panels, the control system, and the batteries. Any combination shall be able to be used simultaneously. It shall be maximum power point tracking, multiple stage and configurable to optimize charge parameters, battery temperature and AGM battery superior charge parameters. The charge controller shall be rated to handle the solar system maximum outputs. It shall have current limiting. It shall have a digital display to monitor charge performance.

(l) SYSTEM CAPABILITIES:

These trailer systems shall be able to be used within larger, compatible, portable traffic equipment and systems. The radio and control system shall be able to work within larger systems that have greater phasing capabilities, more complex deployments and larger power consumption needs such as 5 section head left turn movement, or side street signals and system with longer mast arms.

2. **MAINTENANCE REQUIREMENTS:** The Contractor shall provide the Engineer with the names and telephone numbers of those responsible for maintaining the portable traffic signal system and traffic timer units - countdown. The Contractor shall have at least one person who can be contacted 24 hours a day, and seven (7) days per week. The Contractor shall always keep the portable traffic signal system with timer units - countdown in good repair and fully operational. Failure, malfunction, or damage to the system, for any reason, shall require the Contractor to be on site within two (2) hours to expedite the repair, or replacement, and furnish adequate flaggers or other approved means within 15 minutes of the onset of the failure, malfunction, or damage, at the Contractor's expense, to provide a safe means for the control of traffic until the system is put back into service.

3. **MATERIALS AND CONSTRUCTION:** The Portable Traffic Signal System with Traffic Timer Units - Countdown shall be furnished and installed at the location(s) as shown on the plan sheet(s). All materials and labor shall be considered included in the price bid for the Portable Traffic Signal System and Traffic Timer Units – Countdown pay items. Where specified as

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"actuated" vehicle detection as described elsewhere in this specification shall be furnished, installed and tested.

4. **METHOD OF MEASUREMENT:** Completed and accepted items Portable Traffic Signal System with Traffic Timer Units - Countdown shall be measured for payment by the number of weeks the system and timers are required and authorized by the Engineer. A "week" is defined as a 7-calendar day period beginning at 12:00 a.m. Monday morning to Sunday night at 11:59 p.m. Payment for a full week will be made for any portion of a week that the Portable Traffic Signal System with Traffic Timer Units – Countdown is authorized and used for temporary traffic control, but the measurement shall not exceed one per system in any week. When a Portable Traffic Signal System with Traffic Timer Units – Countdown is required after the contract time has expired and liquidated damages are being assessed, the Contractor shall furnish such complete system at no cost to the Department.

5. **BASIS OF PAYMENT:** Work completed and accepted under this item and measured as above will be paid for at the contract unit price bid per week as follows:

   Prices bid for **Portable Traffic Signal System and Traffic Timer Units – Countdown** including vehicle detection system and associated equipment shall be full compensation for furnishing the equipment; installing and testing the system; maintenance of the equipment during operation; and for all materials, equipment, tools, labor, and incidentals necessary to complete the work.

   Payment shall be made under:

Pay Item	**Pay Unit**
Portable Traffic Signal System – Actuated	Week
Traffic Timer Unit – Countdown	Week

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NETWORKING EQUIPMENT

DESCRIPTION: This section specifies the minimum requirements for providing networking communication equipment, including terminal servers and associated cable, furnished and installed.

This section also specifies the minimum requirements for standalone and network switch module terminal servers, standalone and network switch module cellular modems, and Ethernet Network cable.

- The terminal servers shall be hardened. The terminal server device, also commonly referred to as a port server device, will be used to communicate bi-directionally between IP-based Ethernet network systems and existing field devices that communicate or are controlled via a full-duplex serial interface. Cellular modems shall be used to communicate via a cellular network to remote sites such as portable traffic signal sites, portable CMS, smart work zones, ITS site locations, or devices that need serial or Ethernet communication that can be provided over cellular service.
- The Ethernet network cable will be installed in conduit and cabinets between elements that are within 300 feet of each other to eliminate the need for two hardened switches. The work shall consist of providing all labor, materials, equipment, and incidentals necessary to furnish, install, and test the networking equipment.

MATERIALS: Terminal servers, cell modems, and associated cabling will be placed in the field device cabinets and shall meet the following requirements.

All materials shall comply with the “Buy America – Construction Materials” Special Provision.

TERMINAL SERVER: Terminal server shall adhere to the following minimum requirements:

1. 10/100 Base-T Ethernet port connection
2. RJ-45/DB9 Serial port connection
3. RS-232/422/485 selectable serial connections
4. Baud rates up to 230 Kbps
5. Full Modem and hardware flow control
6. TCP/UDP Socket Services
7. UDP Multicast
8. Telnet and Reverse Telnet
9. Modem emulation
10. SNMP (Read/Write)
11. PPP
12. Port buffering
13. HTTP
14. Remote management

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15. DHCP/RARP/ARP-Ping for IP address assignment
16. LED status for link and power
17. The terminal server shall support a minimum of four (4) bi-directional serial communications over Ethernet 10/100 Base-TX.
18. Each terminal server shall have a minimum of four (4) EIA-232/422/485 serial interface ports. These ports shall be individually and independently configurable, directly or over the network, to EIA-232/422/485 mode of operation as defined by the EIA for data format, data rate and data structure (e.g., the number of bits, parity, stop bits, etc.). Each serial port shall support up to 230 Kbps.
19. Each serial port shall support IP addressing and socket number selection.
20. The equipment shall provide the capability to establish an IP connection directly from a workstation to any encoder IP address and socket number transport serial data.
21. Each terminal server shall have an Ethernet Interface (10/100Base-TX protocol, Full/Half- Duplex, Auto Sense (802.3), RJ-45).

E-Net Cable (Exterior CAT 6): Ethernet network cables shall adhere to the following minimum requirements.

1. 4 Pair #24 AWG STP Category 5E (or other comparable ethernet cable as approved by ARDOT) as per manufacturer's recommendations.
2. These items are paid for as ethernet network cable installed between cabinets and does not apply to other patch cords installed inside cabinets or huts.
3. Supplied ethernet network cable shall be suitable for use outdoors in ducts and as a minimum meet the following requirements:
    a. Fully water blocked
    b. Conforms to the National Electrical Code Article 800
    c. UL 1581 certified
    d. Voltage Rating 300 Volts or greater
    e. Operating and installation temperature (-4°F to 140°F)
    f. The allowable bend radius must be 10 times the Cable's Outside Diameter or smaller
    g. Recommended for 1000 Base-T applications for a distance of 328 feet.

ETHERNET PATCH CORDS: The ethernet patch cords shall be furnished and installed as needed to connect the network switches with other equipment. Ethernet patch cords shall be considered an incidental component for this project and furnished and installed as needed to provide a functional system. Ethernet patch cords shall meet the following minimum requirements:

1. All patch cords shall be from the same manufacturer.
2. Shall incorporate four (4) pair #24 AWG stranded PVC Category 5E, or other equivalent Ethernet cable (generally meeting Category 5E Specifications and

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approved by ARDOT) as required by the manufacturer.
3. Shall be factory made; Contractor or vendor assembled patch cords are not permitted.
4. Shall be TIA/EIA 568-B.2-1 compliant. Patch Cords shall be compliant to T568B pin configuration (whichever is used).
5. Certified by the manufacturer for Category 5e performance criteria.
6. Length as needed. Excessive slack is not permitted.

SUBMITTALS: All costs associated with submittals shall be included in the overall contract price; no separate payment will be made for any documenting and submitting.

The Contractor shall provide project submittals for network switches including scheduling requirements. The project submittals for terminal servers shall include but are not limited to the specific requirements in this subsection.

1. The Contractor shall submit detailed cut sheets which document compliance with all parameters required in this section. If a parameter is not covered in the cut sheet a signed statement from the manufacturer on letterhead shall be submitted as an attachment. Failure to address all requirements will result in rejection of the submittal.

CONSTRUCTION REQUIREMENTS: All networking equipment shall be installed according to the manufacturer's recommendations, the Plans and as follows:

1. Ethernet network cable installed in conduit shall be installed and terminated per the manufacturer's recommended procedures. Slack Ethernet network cable shall be provided in pull boxes as indicated in the plans.

TESTING: All networking equipment shall undergo testing to verify conformance to requirements of the plans and these special provisions. The Contractor shall conduct a Project Testing Program as required in the plan "General Notes." All costs associated with the Project Testing Program shall be included in the overall contract price; no separate payment will be made for any testing.

DOCUMENTATION: As-built Plans showing switch configuration and connections shall be provided to the Project Engineer and ITS Engineer in electronic format.

The Contractor shall submit documentation and proof of measured optical power budgets to all optical links of all type switches. All equipment and software must be fully functional and pass a Final Inspection by the ITS Manager and Project Engineer before being accepted by the owner.

WARRANTY: At a minimum, the warranty requirements defined in the plan "General Notes" or this specification, whichever is longer, shall be met. All costs associated with

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the warranty requirements shall be included in the overall contract price.

QUALITY ASSURANCE: The quality assurance requirements defined in the plan "General Notes" shall be met. All costs associated with the quality assurance requirements shall be included in the overall contract price.

METHOD OF MEASUREMENT: Terminal server will be measured per "Each" installation. Such measurement shall be inclusive of furnishing, installing, system integration and testing of a Terminal Server including all incidental components, attachment hardware, mounting shelf and hardware, testing requirements, warranties, and all work, equipment and appurtenances as required to provide a fully functional Terminal Server ready for use.

E-Net Cable (Exterior CAT 6), will be measured by the "Linear Foot", and shall be obtained by accurate measurement of the runs including horizontally, vertically, aerially along the messenger cable, from the device to the device cabinet, and with liberal allowances made for slack in boxes, as indicated in the plans.

BASIS OF PAYMENT: Terminal servers, measured as prescribed above, will be paid for at the contract unit price bid per each. The price shall be full compensation for documentation and submittals, warranties, testing, all labor, tools, materials, equipment, quality assurance, and all incidentals necessary to complete the work. E-Net Cable (Exterior CAT 6) installed between cabinets will be paid for by "Linear Foot" measured horizontally.

Payment will be made under:

Pay Item	**Pay Unit**
Terminal Server	Each
E-Net Cable (Exterior CAT 6)	Linear Foot

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RADIO INTERCONNECT SYSTEM

DESCRIPTION: This section describes the Wireless Radio Interconnect Systems and specifies the minimum technical requirements for Radio Interconnect System devices furnished, installed, integrated, and tested at locations designated on the plans.

MATERIALS: The Contractor shall provide a functional wireless system in accordance with any applicable FCC (Federal Communications Commission) and FAA (Federal Aviation Administration) rules and regulations. The Contractor shall be responsible for supplying all equipment needed for a 100% functional wireless system capable of providing video, data, or both to each of the sites encompassed in the project. The Contractor shall ensure that each site location's wireless link has sufficient bandwidths for all devices to communicate properly across the network. The wireless link shall support the minimum bandwidth requirements with a 99.99% reliability factor. The Contractor shall be responsible for providing all equipment needed to connect to the existing Wireless Network. All components provided in this project must be 100% compatible with the existing Wireless Network (where applicable) and provide the same features, specifications, bandwidth, and capabilities unless specifically stated otherwise.

The wireless system shall include wireless communications devices that are inclusive of the following types: Signal Control, Broadband Type Short Range, Broadband Type Long Range, Television Broadcast Radio (TVBR) Type Short Range, TVBR Type Long Range. Each Type shall be capable of meeting all requirements as identified in this specification except broadband Type Long Range shall be capable of meeting all performance requirements for line-of-sight (LOS) wireless link distances of 10 miles or greater. Broadband Type Short Range shall be capable of meeting all performance requirements for LOS wireless link distances of up to 10 miles. TVBR Type Long Range shall be capable of meeting all performance requirements for non-line-of-sight (NLOS) wireless link distances of two (2) miles or greater. TVBR Type Short Range shall be capable of meeting all performance requirements for wireless link distances of up to two (2) miles.

The Contractor shall provide all elements necessary to provide a functional system including radios, antennas, coaxial cable and connectors, lightning suppressors, mounting and grounding hardware, and any other equipment, hardware, enclosures and cabling required to make a complete and fully functional system.

GENERAL REQUIREMENTS: Unless specified otherwise in preceding sections, the radio interconnect systems discussed herein shall adhere to the following minimum technical requirements for Radio Interconnect System devices.

All furnished equipment shall be new, environmentally hardened, and capable of optimal operation in all weather conditions as applicable to Arkansas and Mississippi.

The Contractor shall test all radio hardware and required equipment necessary to provide a complete and fully operational system at no additional cost to the Department.

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The Contractor shall obtain and reserve necessary frequencies and apply for all required licenses by the FCC. The Contractor shall also meet the requirements for filing with the Federal Aviation Administration for proposed structures, which are based on a number of factors: mounting height, proximity to an airport, location, and frequencies emitted from the structures, etc. as described in CFR Title 14 Part 77.9. The charges and fees incurred while applying for and obtaining licenses are included in the pay items outlined in this specification and will not be paid for separately.
The wireless communication equipment shall be fully interchangeable by radio frequency, radio type and compatible with the existing network to transmit all data from field devices across the Department wireless network to communications towers (where applicable), hubs, and/or nodes to be transmitted to the ITS Network by way of existing network equipment.
The wireless radio equipment shall be configured for minimal noise and interference as determined by project location and the manufacturer's equipment specifications and include the required channel(s) to communicate with radios of the same type and operating as designed.
The Mean Time Between Failures (MTBF) shall be at least 87,658 hours (10 years). If the radio system has not been manufactured long enough to validate the corresponding MTBF then Contractor may present the MTBF from a radio system of similar type for approval by the Department. The Contractor must first request approval by the Department to permit the submittal of MTBF specifications of an approved radio system.
The minimum bandwidth provided per each individual link shall be the cumulative minimum bandwidth of each device type and number of each per device utilizing that link according to the following table of min bandwidth requirements.

Device Type	**Min Bandwidth per Device**
CCTV PTZ	512 kbps
CCTV Fixed	256 kbps
DMS	128 kbps
Detection	256 kbps

Radio Interconnect System General Equipment requirements are as follows:

1) Network Features
    a. 802.3i 10 Mbps Ethernet.
    b. 802.3u 100 Mbps Ethernet with auto-negotiation.
    c. Network topology: Point-to-Point (PTP) and Point-to-Multipoint.
    d. The RF network latency shall not exceed 15ms between each transmitting and receiving device.

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e. The wireless radio shall be a Layer 2 device by operating similar to a switch or bridge device and meeting all requirements of a Layer 2 switch as specified in the Networking Equipment Special Provision. The wireless radio shall be capable of connecting to the Network via an RJ-45 port.
f. The wireless radios shall be fully interchangeable and compatible with the existing wireless devices operating on the same frequency and of the same type.

2) Management
   a. Local management interface via RS-232, RS-422/485, or RJ45.
   b. Remote Management, i.e., HTTP, SSH, Telnet, SNMP, TFTP, or CLI.
   c. Web-based Management (HTML) shall have Web GUI.
      i. The web-based management shall be password protected management software allowing remote configuration.
3) Power Requirements
   a. The wireless radios may transmit/receive data and receive power via Ethernet cable by PoE. PoE devices adhering to the alternative A/B standards for PoE are recommended. For proprietary PoE devices, the Contractor shall be responsible for ensuring that these devices are not connected to IEEE standard PoE switches or vice versa as this may result in damage to the device and/or switch.
   b. Output Voltage: voltage and power ratings shall adhere to 802.3af or 802.3at for devices conforming to the IEEE standards.
4) Environmental Requirements
   a. Radio interconnect field equipment shall be fully operational in all-weather conditions occurring in Arkansas and Mississippi.
   b. Relative humidity 95% non-condensing.
   c. Weather, Water, & Dust Proof, e.g., IP-66/IP-67.
   d. Operating temperature shall exceed the range from -35°F to 135°F

RADIO INTERCONNECT SYSTEM, SIGNAL CONTROL: The radio interconnect system, signal control shall provide communications between the master and the local intersections by RF data link. The radio shall operate in the 900 MHz data frequency bands. Each local intersection shall have a transceiver, power supply and an antenna. A transceiver shall be provided at the master location. The Signal Control Radio Interconnect System is not subject to the requirements outlined in Radio Interconnect System General Equipment Requirements.

SPECIFIC REQUIREMENTS:

Antennas: Two (2) antennas will be required at repeater stations, one for each radio. Measures shall be taken to minimize the chance of interference between these One effective technique for limiting interference shall employ vertical separation. In this arrangement, one antenna is mounted

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directly over the other, separated by at least four feet (4'). This takes advantage of the minimal radiation exhibited by most antennas directly above and below their driven elements.
Another interference reduction technique is to cross-polarize the repeater antennas. If one antenna is mounted in the vertical plane and the other in the horizontal plane, an additional 20 dB attenuation can be achieved. The corresponding stations shall use the same antenna orientation when cross-polarization is used.
INTERFACE WIRING: A null modem cable shall be required between the Data Interface connectors of the two radios forming a repeater station, allowing radios to exchange data even though they are both configured as DCE (data circuit-terminating equipment) devices.
RADIO INTERCONNECT SYSTEM, BROADBAND: The radio interconnect system, broadband, shall be a licensed or unlicensed wireless communication device as called out in the plans or directed by the Engineer, capable of transmitting and receiving broadband wireless communication at distances as called out on the plans. The Contractor shall be responsible for determining the most optimal frequency range to furnish radios that will provide wireless links with sufficient bandwidth for all devices to communicate properly across the network. When expanding the wireless link of an existing system, the Contractor shall ensure the frequency of the new equipment is compatible with the existing system. The radio system shall be used to connect ITS device sites and Traffic signal systems to the existing ITS Network as described in project plans. The broadband wireless communication system shall be furnished with all necessary hardware and software to include radios, repeaters, antennas, cable, surge protection and connectors in accordance with the plans and specifications to establish stable wireless communication channel(s) between two (2) or more LOS/partial LOS devices setup in point-to-point or point-to-multipoint configurations. The broadband radio interconnect requirements shall be as follows:

1) The broadband radios furnished and installed shall meet all regulations set forth by the FCC part 15 of the FCC rules.
2) Short range broadband radios shall be capable of transmitting up to 10 miles.
3) Long range broadband radios shall be capable of transmitting at distances exceeding 10 miles.
4) The short range and long-range broadband radios shall provide a minimum data rate of 150 Mbps as tested by bandwidth speed test.
5) The short range and long-range broadband radios shall provide reliable communication and sufficient bandwidth (i.e., greater than the cumulative minimum bandwidth of each device that will utilize the link) for all devices utilizing the wireless link(s).
6) Short range and long-range broadband radios shall support 802.11 a/n wireless standards.
7) Short range and long-range radios shall have 2 or more Gigabit Ethernet ports.
8) Short range and long-range radios shall be capable of a TX power of 24 dBm or better.

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9) The Contractor may propose the use of multiband (dual band, tri band, etc.) radios using licensed 4.9 GHz and unlicensed 5.8 GHz and 2.4 GHz bands if bandwidth requirements and path interference warrants the use of such radios and approved by the Engineer.

RADIO INTERCONNECT SYSTEM, TELEVISION BROADCAST RADIO (TVBR): TVBRs are unlicensed radios designed to produce, transmit, and/or receive radio communication signals at select geographical locations. These radios transmit on available channels in the broadcast television frequency band. The TVBRs shall be proposed on project plans and drawings in geographical locations lacking visual line-of-sight transmission between the proposed transmitting and receiving devices. These devices shall provide partial line-of-sight (LOS) and/or non-line-of-sight (NLOS) radio transmission to establish network communication in areas with obstacles obstructing LOS wireless communication.

The TVBRs operate under the Federal Communications Commission (FCC) approved white space TV band database. Each TVBR shall determine the available TV channels it can operate on before it will be functional for typical usage. The TVBRs retrieve a list of available channels via an Internet connection from the white space TV band database dependent on the TVBRs specific geographic coordinates, which are acquired and saved on the device during configuration. Typically, TVBRs can transmit and receive radio communication on six (6) MHz channels. TV Channels 14-36 and 38-51 are available for TVBRs operating on TV channels in the UHF frequency range (470-698 MHz). Once a TVBR is registered with the white space TV band database and associated with a specified operating channel, the channel is removed from the list of available channels. The Contractor shall be responsible for determining the availability of TV bands in the geographical areas for all TVBRs proposed. The Contractor shall provide a list of available TV channels in the UHF frequency range to the Engineer, or approved designee. The Contractor shall not procure, purchase, furnish, or install TVBRs or any related equipment without the consent of the Engineer or the approved designee without first receiving confirmation from the Engineer or their designee that verification has been made that the specified channels are available in all geographic location(s) for each proposed TVBR site.

SPECIFIC REQUIREMENTS: The TVBR, type long range and short range, shall be capable of LOS, partial LOS, and NLOS wireless radio transmission. Each TVBR and antenna shall be pole mounted or mounted to an approved structure. The antenna shall be mounted in the immediate location of the TVBR to minimize attenuation due to cable length. The TVBR radio interconnect requirements shall be as follows.

1) The TVBR's procurement and installation shall meet all regulations set forth by the FCC 47 CFR 15 subpart H - Television Band Devices.
2) The TVBR's shall be capable of LOS and NLOS wireless transmission operating on the UHF TV band frequency range (470-698 MHz).

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3) The Type Long Range TVBR shall be capable of communicating over wireless link distances exceeding two (2) miles. The bandwidth capacity shall exceed 25 Mbps provided LOS transmission and 5 Mbps provided NLOS transmission.
4) The Type Short Range TVBR shall be capable of communicating over wireless link distances up to two (2) miles. The bandwidth capacity shall exceed 3 Mbps provided for LOS transmission and 1 Mbps for NLOS transmission.
5) The TVBR's transmit power shall not exceed 30 dBm for stable RF communication given the minimum distance and bandwidth requirements.
6) The RF network latency for Long Range TVBR shall not exceed 5ms between each transmitting and receiving device.
7) The MTBF shall be at least 43,829 hours for Type Short Range TVBR and 87,658 for Type Long Range TVBR. If the TVBR system has not been manufactured long enough to validate the corresponding MTBF, the Contractor may present the MTBF from a radio system of similar type for approval by the Department. The Contractor shall first request approval by the Department to permit the submittal of MTBF specifications of an approved radio system.

CONSTRUCTION REQUIREMENTS: All equipment shall be installed according to the manufacturer's recommendations, the plans, and as follows.

INSTALLATION SERVICES: The Contractor shall prepare a comprehensive Network Design, Wireless Evaluation, and Installation Plan for the wireless network to document how it will be implemented and integrated with the existing system. All required Federal Communications Commission (FCC) and Federal Aviation Administration (FAA) applications and filings shall be prepared by the Contractor on behalf of the Department, including any modifications to existing Department licenses. The Contractor shall submit a copy of the Network Design, Wireless Evaluation, Installation Plan, and copies of any FCC license applications to the Engineer. The Department reserves the right to reject any network designs and installation plans submitted. If rejected, the Contractor will be responsible for submitting revised network design and/or installation plan.

The Contractor shall provide all labor, tools, materials, equipment, and transportation necessary to conduct and complete the Wireless Evaluation. The cost of the wireless evaluation and report shall be included in the contract unit price per the radio interconnect system pay items. The Wireless Evaluation report shall include:

1) Line-of-site photographs taken at proposed sites. The photographs shall be taken at antenna-height level.
2) Identification of any wireless interference, line-of-sight concerns, or any other issues that would hinder the Contractor's ability to deliver a functional wireless link. The Contractor

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shall present alternative solutions if the throughput or any other requirements cannot be met.

3) Planned wireless topology identifying point-to-point and point-to-multipoint radio groups.
4) Frequency analysis, through a spectrum analysis at each site, and proposed frequency allocation.
5) Radio test results for each communication link, including received signal strength, noise floor, and throughput results recorded using “Iperf”, or equivalent software.

The Contractor shall provide a written inventory of items received and the condition in which they were received. The inventory shall be inclusive of make, model, and serial numbers, MAC address, and installation GPS coordinates. All equipment shall be installed according to the manufacturer's recommendations or as directed by the Department.

Any new, additional or updated drivers required for the existing ATMS software to communicate and control new radio interconnects installed by Contractor shall be the responsibility of the Contractor.

TESTING: All equipment associated with the Radio Interconnect System at each site shall undergo testing to verify conformance to requirements of the plans and these special provisions. The Contractor shall conduct a Project Testing Program as required in the plan “General Notes.” All costs associated with the Project Testing Program shall be included in the overall contract price; no separate payment will be made for any testing.

GENERAL REQUIREMENTS: The Engineer, ITS Engineer, and/or their designee(s) are only responsible for attending and observing each test and reviewing and approving the Contractor's test results documentation. The Engineer, ITS Engineer, and/or their designee(s) reserve the right to attend and observe all tests. The Contractor shall perform the Standalone Acceptance Test (SAT) with the Engineer, ITS Engineer or his designee present.

Each test shall fully demonstrate that the equipment being tested is clearly and definitely in full compliance with all project requirements.

Test procedures shall be submitted and approved for each test as part of the project submittals. Test procedures shall include every action necessary to fully demonstrate that the equipment being tested is clearly and definitively in full compliance with all project requirements. Test procedures shall cross-reference to these Specifications or the Project plans. Test procedures shall contain documentation regarding the equipment configurations and programming.

No testing shall be scheduled until approval of all project submittals and approval of the test procedures have been granted by the Department.

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The Contractor shall provide all ancillary equipment and materials as required in the approved test procedures.

The Contractor shall request in writing the Engineer's approval for each test occurrence a minimum of 14 calendar days prior to the requested test date. Test requests shall identify the test to be performed and the equipment to be tested. The Engineer reserves the right to reschedule test requests if needed.

All tests shall be documented in writing by the Contractor in accordance with the test procedure and submit to the Engineer within seven (7) days after the completion of the test. Any given test session is considered incomplete until the Engineer has approved the documentation for the given test session.

All tests deemed by the Engineer to be unsatisfactory shall be repeated by the Contractor. When the Contractor requests a test occurrence that is a repeat of a previous test, the Contractor shall summarize the diagnosis and correction of each aspect of the previous test that was deemed unsatisfactory. The test procedures for a repeated test occurrence shall meet all the requirements of the original test procedures, including review and approval by the Engineer and ITS Manager or his designee.

The satisfactory completion of any test shall not relieve the Contractor of responsibility to provide a completely acceptable and operating system that meets all requirements of this project.

STANDALONE ACCEPTANCE TEST (SAT): In addition to the requirements set forth in the plan “General Notes”, successful communications shall demonstrate, at minimum, the ability of a wireless transceiver to send clear, uninterrupted video if the radio is intended to carry a video signal or an error-free data message of at least 200 KB if the radio will not carry video signals, to the receiving station and have it processed for viewing and confirmation. A minimum of 30 test transmissions shall be attempted at each test site. If a failure occurs at the locations selected, it will be the responsibility of the Contractor to re-check the test area to determine if a problem exists. When problem(s) occur, it will be the Contractor’s responsibility to perform additional tests as required to define the cause of the problem and confirm the final working functionality. If areas of non-performance represent more than the Contractor’s predicted link reliability it will be the Contractor’s responsibility to correct such problems at the sole expense of the Contractor. Additional costs associated with the repeated tests will be the sole responsibility of the Contractor.

The Contractor shall prepare and execute a detailed system acceptance test plan, including detailed system acceptance test procedures. The Contractor shall submit a copy of all system acceptance test plans and link reliability predictions to the Engineer through the standard Department submittal process, as noted in the plan “General Notes.”

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LOCAL ETHERNET SYSTEM TESTING: Successful communications shall demonstrate, at minimum, the ability of a wireless transceiver to send video and an error-free data message to the receiving station and process for viewing and confirmation. A minimum of 30 test transmissions shall be attempted at each test site. If a failure occurs at the locations selected, it will be the responsibility of the Contractor to re-check the test area to determine if a problem exists. When problem(s) occur, it will be the Contractor's responsibility to perform additional tests as required to define the cause of the problem and confirm the final working functionality. If areas of non-performance represent more than the Contractor's predicted link reliability, it will be the Contractor's responsibility to correct such problems at the sole expense of the Contractor. Additional costs associated with the repeated tests will be the sole responsibility of the Contractor. The Contractor shall prepare and execute a detailed system acceptance test plan, including detailed system acceptance test procedures. The Contractor shall submit a copy of all system acceptance test plans to the Engineer through the standard Department submittal process.

WARRANTY: The radio interconnect system shall be warranted to be free of manufacturer defects in materials and workmanship for a period of one (1) year from the date of final acceptance. Equipment covered by the manufacturer's warranties shall have the registration of that component placed in the Department's name prior to Final Inspection. The Contractor is responsible for ensuring that the vendors and/or manufacturers supplying the components and providing the equipment warranties recognize the Department as the original purchaser and owner/end user of the components from new. During the warranty period, the supplier shall repair or replace with new or refurbished material, at no additional cost to the State, any product containing a warranty defect, provided the product is returned postage-paid by the Department to the supplier's factory or authorized warranty site. Products repaired or replaced under warranty by the supplier shall be returned prepaid by the supplier.

During the warranty period, technical support shall be available via telephone within four (4) hours of the time a call is made by the Department, and this support shall be available from factory certified personnel. During the warranty period, updates and corrections to control unit software shall be made available to the Department by the supplier at no additional cost.

METHOD OF MEASUREMENT: The radio interconnect system components of the type specified will be measured per “Each” installation.

Partial payments for the radio interconnect system(s) will be measured for payment per each as follows:

1) 70% of the contract unit price upon completion of the installation and the Standalone Acceptance Testing (SAT) of the wireless network;
2) An Additional 20% of the contract upon conditional system acceptance; and

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3) Final 10% of the contract unit price upon final system acceptance.

BASIS OF PAYMENT: The radio interconnect system components, measured as prescribed above, will be paid for at the contract unit price per each, which price shall be full compensation for furnishing all labor, tools, equipment, warranties, connecting, testing, materials inclusive of radio, software, base stations, power supply, antennas, cables and connectors, lightning suppressors, mounting and grounding hardware, enclosures, receivers, and transceivers, all documentation, submittals, and system documentation including shop drawings, operations and maintenance manuals, wiring diagrams, and block diagrams, and all incidentals necessary to complete the work and quality assurance.

The installation shall provide an appropriate RF data link that is fully integrated and operational with the existing system.

The price bid for the spare parts shall be measured per “Each” and in accordance to the specifications and all system requirements.

Payment will be made under:

Pay Item	**Pay Unit**
Radio Interconnect, Broadband, Short Range	Each

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PAN-TILT-ZOOM CAMERA SYSTEM

1. **DESCRIPTION.** This item consists of furnishing and installing a Pan-Tilt-Zoom Camera System, hereby referred to as a PTZ Camera, mounted on an Overhead Sign Structure at locations designated on the plan sheets or as directed by the Engineer. This item consists of furnishing and installing a Pan-Tilt-Zoom (PTZ) CCTV Camera, hereby referred to as a PTZ CCTV CAMERA, , mounted on an existing Tilt Tower Structure at locations designated on the plan sheets or as directed by the Engineer. All construction and materials shall be in accordance with the Standard Specifications of Highway Construction, Edition of 2014, with applicable supplemental specifications. This work consists of furnishing, configuring, and integrating ITS video cameras, communications equipment, and Video Management System (VMS) components to monitor and record marine vessel activity, including barges passing beneath the bridge structure. The system shall provide event-based video recording to capture barge transits, including a minimum of one (1) hour of continuous recording following each barge passage event.

2. **MATERIALS.** The PTZ Camera shall be an Axis Q6315-LE (utility powered) Network Camera with Heater or approved equal compatible with the existing system hardware and software. The power and data transmission wiring for the camera system shall be an Ethernet Cat 5e Power over Ethernet (PoE) cable that contains all the necessary wires for a fully functioning operation. The cable shall be of the same manufacturer as the camera, or another manufacturer approved by the camera manufacturer. The RJ-45 plug connectors shall be connected to the camera mounted on a steel structure via weather-tight connections. Mounting hardware shall be of the same manufacturer as the camera and utilize a pole mounting adapter. The camera system shall include a power supply that is to be mounted inside the aluminum ITS Traffic Controller Cabinet or other approved NEMA 3R enclosure. The camera system power supply shall be of the same manufacturer as the PTZ Camera. The camera power supply shall be able to withstand an operating temperature range of -34° C to 60° C minimum. Input voltage for the power supply shall be 120 VAC and output voltage for the camera and heater shall be 20 - 28 V DC PoE. The power supply shall be rack mounted or DIN rail mounted in a NEMA 3R enclosure. Power cable for the power supply should be of the type and size recommended by the Manufacturer. The PTZ camera shall also come with lightning surge suppression equipment as recommended by the Manufacturer. Cameras shall be compliant with the Code of Federal Regulations Section 200.216 Prohibition on certain telecommunications and video surveillance services or equipment:https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200/subpart-C/section-200.216.

   Prior to ordering ITS equipment, the Contractor shall submit to the Engineer at least one copy of the applicable brochures containing the design criteria for the equipment which the Contractor proposes to install for approval. The specific items that are proposed for use shall be clearly marked in the applicable brochures. A list shall be attached to identify the item and contain the Manufacturer, quantity, model, and identifying descriptions of each item. Adequate engineering data, essential shop drawings, and schematic diagrams shall be provided for review. Partial submittals will not be accepted for consideration and shall be returned for correction without review.

   ARDOT staff will conduct a review of the equipment submittals. Once ARDOT has determined that the equipment submitted meets the design criteria, approval will be provided. If equipment submitted

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for use is rejected, or further information is required, the Contractor shall re-submit the equipment and provide the needed information for review within fifteen (15) days of notification of equipment rejection or requested information/inquiry. Resubmittal of rejected equipment for review will be considered the starting point of a new approval cycle as described.

A. PTZ CCTV CAMERA,

1. The Pan-Tilt-Zoom (PTZ) CCTV Camera shall be an Axis Q6315-LE network camera or approved equal compatible with the existing ARDOT system hardware and software. The RJ-45 plug connectors shall be connected to the camera via weather-tight connections. Mounting hardware shall be of the same Manufacturer as the camera and utilize a pole mounting adapter. The PTZ camera shall include the necessary illuminators, cables, mounting brackets and lightning surge suppression equipment as recommended by the Manufacturer.

B. ETHERNET CABLE

1. The Ethernet cable shall be environmentally hardened, outdoor rated 350 MHz Category 5e cable. The cable shall be riser rated, 24 AWG solid copper, have Polyolefin insulation, UV and oil-resistant PVC jacket. Pair 1 shall be Blue, White/Blue, Pair 2 shall be Orange, White/Orange, Pair 3 shall be Green, White/Green and Pair 4 shall be Brown, White/Brown. The operating temperature shall be from -40° C to +70° C. The cable shall conform to the following standards: ISO/IEC 11801 Category 5e, NEMA WC 63, and ANSI/TIA/EIA 568-B.2 Category 5e. The cable shall be without splicing or joints for a single run. The Contractor shall obtain instructions from the Manufacturer about alternate architecture when length of a single run of CAT 5e cable exceeds 320 feet.

2. The RJ-45 plug connectors shall be used at both the camera and cabinet ends. The Vendor of the PTZ Camera System shall approve the Category 5e cable, RJ-45 connector and crimping tool and the Manufacturer's instructions must be followed to ensure proper connection.

C. COMMUNICATIONS

1. **Cellular Modem:** Equipment supplied on this contract shall consist of a cellular modem, antenna, wiring assembly, configuration software, and installation necessary shall be provided and furnished for a working wireless communication connection in accordance with plans and specifications and compatible with the requirements of the traffic operations system software, and the wireless service carrier used by the ARDOT. All items that are required to complete the installation and ensure an operational system shall be supplied by the Contractor. All components supplied by the Contractor are the responsibility of the Contractor. It shall be the responsibility of the Contractor and/or

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their Vendor to furnish, install and configure a cellular modem and a hardened switch at the traffic signal with any necessary cables needed to ensure a working wireless communication connection in accordance with the plans, specifications and compatible with the requirements of ARDOT. The Contractor shall provide the IMEI number of the cellular modem prior to dropping the modem off to be configured. Refer to the overhead DMS assembly special provision for more details.

2. The Contractor and/or their Vendor shall be responsible for configuring the cellular modem and switches to create a secure VPN tunnel with IP filtering and/or mac filtering between ARDOT and the ITS Equipment (CCTV, RDS, WWDS, & DMS controller) as prescribed in the plans. This includes any configuration needed to ARDOT ATMS (SwRI) or third-party software to work with the above mentioned items. It shall be the responsibility of the Contractor and/or their Vendor to properly configure and deliver a working communication system as mentioned above and providing backup configuration files of the working configurations for the cellular modem and switches to ARDOT. Cellular setup shall be coordinated with the ARDOT's Maintenance Department. Warranty and cellular carrier account shall be transferred into ARDOT's name upon acceptance of the project. A power supply shall be included with the cellular modem as necessary.

D. CELLULAR MODEM. The cellular modem shall meet the following requirements.

1. Model: Sierra Wireless AirLink RV55 Rugged LTE-A Router.
2. Frequency Bands and Cellular Network Interface:
a. 4G Long Term Evolution (LTE) models:
- Tri-band support for 700/1900/2100 Megahertz (MHz).
- Backward compatible with Evolved High Speed Packet Access (HSPA+) and High Speed Pack Access (HSPA).

3. Transfer rate (max): 300 Mbps down, 50 Mbps up.
4. Minimum of one 10/100/1000 Ethernet Port (RJ-45).
5. Minimum of one RS-232 serial port.
6. Minimum of one SMA antenna connector.
7. Device Configuration and Management Software via web interface.
8. Communications and Protocols supported:

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a. Network: TCP/IP, UDP/IP, DNS.
b. NAT and DCHP routing with VLAN, VRRP, and Static Routes configurable.
c. Includes TELNET, SMTP, SNMP, SMS sessions and services.
d. Serial: TCP/UPD PAD Mode, Modbus (ASCII, RTU, Variable).
e. GPS: NMEA V3.0, TAIP, RAP.
f. Provides VPN security with up to five (5) tunnels.
g. Provide event reporting for GPS/AVL, Network Parameters, Data Usage, Time, Power, and Device Temperature over SMS, SNMP, or email.

9. Antenna:
a. Omni-directional
b. 50 Ohm SMA male connector.
c. Minimum Antenna gain of 2 dBi.
d. Install ¾" thru-hole antenna for improved reception, NMO style, shall include O-ring gasket.
e. Operating Frequencies of 698-896, 1710-2170 and 2396-2700 MHz.

10. Light-emitting diode (LED) indicators for Ethernet, power, cellular link/activity and signal strength.
11. Input Voltage: 7 to 36 VDC.
12. Operating Temperature of -30° C to +70° C.
13. Relative Humidity: 90% @ 60° C.
14. Ingress protection: IP64 specifications.
15. Warranty. Provide cellular modem with a 5-year Manufacturer's warranty, transferable to ARDOT. The cellular modem shall carry a warranty (parts, software and labor) of 5 years from the date of shipment. Furnish warranty and other applicable

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documents from the Manufacturer, and a copy of the invoice showing the date of shipment, to the Engineer prior to final written acceptance.

E. ETHERNET SWITCH, T100 HARDENED (8-PORT).

1. Model: Netonix WISP WS-8-150
2. Equipment shall provide an interface between other Ethernet devices to each site.
3. Switch shall be rack mounted.
4. Fully managed Layer 2 POE Gigabit Switches with SFP.
5. Minimum of 8-Ports.
  a. RJ45 Ports – 10/100/1000BASE-T(X)
  b. Fiber Ports – 100/1000 Mb/s SFP-modules (when specified)
6. Industrial Hardened.
7. Environmental Conditions.
  b. Storage Temperature: -40°C to 85°C
  c. Operating Temperature: -40°C to 80°C
  d. Operating Humidity: 5% to 95% Non-condensing
8. LED Indicators.
9. Minimum 5 Warranty.
10. Power Supply.

F. MARINE TRAFFIC RECORDING REQUIREMENTS

1. For cameras mounted to view barge traffic the Contractor shall provide a complete and operational video monitoring system integrated with the Department's Traffic Management Center (TMC) or designated monitoring facility. Recording shall occur at the centralized VMS/NVR system unless otherwise approved.

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2. A "barge passage event" is defined as any vessel, tug, or barge entering the camera's field of view within the navigational channel and transiting beneath or adjacent to the bridge structure.
3. Upon initiation of a barge passage event, the system shall:
a. Capture pre-event video
b. Record the full vessel transit
c. Continue recording for a minimum of one (1) hour after the vessel clears the bridge.
4. The system shall provide a minimum 60-second rolling buffer prior to event initiation.
5. VMS Integration
a. The system shall support event tagging, playback, export, and indexing by time and event.
6. Storage Requirements
a. Video shall be stored on centralized systems and be time-stamped and retrievable.
7. Communications
a. The Contractor shall ensure sufficient bandwidth to support continuous streaming and recording during events.
8. Testing and Acceptance
a. The Contractor shall demonstrate full functionality, including 1-hour post-event recording and successful playback/export of captured events.

3. **<u>CONSTRUCTION REQUIREMENTS</u>.** Contractor shall provide all mounting hardware, tools, equipment, CAT6 patch cables, CAT5e ethernet cabling, connectors, wiring, and labor necessary to complete the installation. Construction shall be as shown on the plan sheets or as directed by the Engineer. The Contractor shall label serial numbers of the DMS, CCTV, RDS and network switch on each ITS/DMS cabinet. The label shall be printed on black-on-white, all-weather sticker with 1-inch font size, placed on the bottom right corner of each panel. Text orientation shall be consistent on all panels.

In addition to the testing specifications set forth in the PTZ Special Provision, Testing and Integration (T & I) measures must adhere to the standards in the T& I Special Provision. This includes requirements for testing documentation and documentation handoff. If any testing measures from the T & I Special Provision and the PTZ Special Provision are in conflict, the PTZ Special Provision measures take precedence.

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4. **METHOD OF MEASUREMENT.** Completed and accepted items shall be measured as follows:

A. PTZ Camera System of the type specified will be measured by the unit.
B. Cellular Modem of the type specified will be measured by the unit.
C. Ethernet Switch, T100 Hardened (8-Port) will be measured by the unit.
D. The Video Management System (VMS) will be measured for payment on a lump sum (LS) basis.

5. **BASIS OF PAYMENT.** Work completed, accepted, and measured as provided above will be paid at the contract unit price bid as follows:

A. PTZ Camera System which price shall be full compensation for furnishing the camera and associated cables and hardware, wiring and testing, mounting hardware, equipment, tools, labor, and incidentals necessary to complete the work.
B. Cellular Modem - Price bid for Cellular Modem of the type specified shall be full compensation for furnishing, installing and testing the modem; and for all equipment, tools, labor, and incidentals necessary to complete the work.

C. Ethernet Switch, T100 Hardened (8-Port) - Price bid for Ethernet Switch, T100 Hardened (8 Port) of the type specified shall be full compensation for furnishing, installing and testing the switch; and for all equipment, tools, labor and incidentals necessary to complete the work.

D. Video Management System Integration - Price bid for Video Management System Integration shall include all labor, materials, equipment, software, integration, testing, and incidentals necessary to furnish and place the VMS into a fully operational and accepted condition in accordance with the Contract Documents.

Payment will be made under:

Pay Item	**Pay Unit**
PTZ Camera System	Each
Cellular Modem	Each
Ethernet Switch, T100 Hardened (8-Port)	Each
Video Management System Integration	Lump Sum

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ELECTRICAL CONDUCTORS-IN-CONDUIT

DESCRIPTION. This item consists of furnishing, installing, replacing and testing copper electrical conductors from point to point as indicated on the plan sheets. The electrical conductors shall be suitable for installation in duct mounted on structures or buried in the ground.

MATERIALS. Electrical conductors shall consist of cables of the gauge and number of conductors specified on the plan sheets and shall be type XHHW-2, and 600-volt rated.

- Electrical conductors shall be UL Listed and UL Standard 854.
- Solid copper conductors shall comply with ASTM B3.
- Concentric Stranded copper conductors shall comply with ASTM B3 and B8.
- Nineteen (19)-wire combination unilay-stranded copper conductors shall comply with ASTM B3, B8, and B787.
- Multiple single conductor cables shall not be twisted.
- Electrical conductors shall be solid or stranded copper unless otherwise approved by the Engineer.

Where specified “With Ground” (WG), included shall be a copper safety ground of either bare copper or green insulated; of not less than two sizes of the load carrying conductors, whichever is greater.

Where specified Electrical Conductor (E.G.C.), one additional EGC, bare or insulated, also be supplied of the size and quantity shown.

CONSTRUCTION REQUIREMENTS. The electrical conductors shall be continuously running directly from service points to electrical devices, pull boxes and/or junction boxes without splices being made in the conduits. In addition, the electrical conductors shall pass both MEG Test and Leakage Current Test after installation in the presence of the field inspector. The contractor shall perform tests utilizing test equipment acceptable to the Engineer and submit reports to the job engineer for validation. The Contractor shall be responsible for all damages caused by improper MEG Test and Leakage Current Test. Any conductor not meeting the minimum acceptable value shall be replaced at Contractor’s expense using new conductor. Sample test pages are included in this item. The 30-day test on the system shall not commence until all conductors have been tested with specification and accepted by the job engineer.

All conduit terminations shall be provided with UL Listed bushings or bell end fittings. All conduit installed in pull boxes shall be provided with 90-degree elbows with conduit opening facing skyward. All conduit butt splices shall be UL Listed couplings. All conduit used for directional boring shall be UL Listed for that purpose. Non-metallic conduit shall be stamped, “Dir. Bore” or “Directional Bore”.

All conduit joints shall be connected by using UL approved methods only. No internal and external obstructions, such as rivets, screws, and/or any other puncturing method of connections are allowed. The Contractor shall not use a torch for bending or shaping non-metallic conduits.

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Splices are allowed at pull boxes, pole bases, or as approved by the Engineer. All splices shall be waterproof, and UL Listed for continuous use in submersible installations. Splices in pull boxes shall be made with a Bus connector, such as “Homac RXL,” “NSI Polaris Edge”, “Utilco Safetysub,” “Burndy Unitap,” or equivalent and approved by the job engineer. Drip loops are required at pole base installations. No direct connection from copper to aluminum shall be allowed without a connector rated for the application. Slack cable (3 ft. min.) shall remain at each splice location to allow reconnection.

Extend green equipment grounding conductor (E.G.C.) from ground bar at main breaker to control panel and to first pole. Solidly bond E.G.C. to ground lug of control cabinet and to pole ground. Ensure that only one neutral-to-ground bond exists in the system and that it is at the main breaker. E.G.C. Shall be exothermically bonded to ground rod.

METHOD OF MEASUREMENT. Electrical Conductors-in-Conduit will be measured by the linear foot of circuit. Multiple conductors for a circuit shall not be measured singularly and added together.

BASIS OF PAYMENT. Work completed and accepted under this item, measured and tested as provided above will be paid for at the contract unit price bid per linear foot for Electrical Conductors-in-Conduit of the “number of conductors” and “size” called for on the plans, which price shall be full compensation for furnishing and installing the electrical conductors in all conduits, junction boxes and pole bases including making all necessary taps and connections to complete the circuits as shown on the plans and as directed by the Engineer, testing along with all equipment, tools, labor, and incidentals required to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Electrical Conductors-in-Conduit (__ C/__ A.W.G., ___ .)	Linear Foot

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ELECTRICAL CONDUCTORS-IN-CONDUIT

Insulation Resistance Test (MEG Test)

DESCRIPTION. This item describes a testing method for the Insulation Resistance Test ("Test"), also known as, MEG test as called for on the plans. All tests and data recordings must be done in the presence of, and signed by the field inspector. Any deviation from these procedures shall require approval by the Engineer.

MATERIALS. A digital insulation resistance tester ("Tester") is required to perform the test. The Tester shall be able to provide DC test voltage of 500 volts and perform short-time test.

Definitions

Circuit: A circuit is the entire run of conductors from the service point to the end, including splices.

Circuit No.: This is typically the number in a circle on the plans. If no circuit number is present, the Engineer will provide one.

Section: A section is a segment of conductors placed between two poles.

Section No.: This is typically the number in a rectangle on the plans. If no section number is present, the Engineer will provide one.

TESTING PROCEDURE.

Before starting the measurement:

- Do not connect the cable to service. Disconnect all other circuits or devices, as well as any cable accessories and protective end caps, and open the cable at both ends and ensure conductors are isolated from each other.
- Contractor shall be responsible for all damages caused by MEG testing while devices or accessories are still connected. Any conductor not meeting the minimum acceptable value shall be replaced at Contractor's expense using new conductor.
- Only test a cable if the temperature of the conductor is above the dew point. Otherwise, moisture will form on the surface of the insulation and could be absorbed by the cable causing the test to fail.
- Make sure that the conductor surface is free of any material that may be conductive.
- Do not exceed the recommended test voltage of the cable. Otherwise, the conductor insulation can be overstressed, or even damaged. The Contractor shall be responsible for damages caused by improper MEG Test.

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Short-time Test. This test lasts 60 seconds.
For each conductor that is to be tested:

1. Record the following:
   a. Conductor length
   b. Ambient temperature
2. Strip back the conductor at each end, as if it were to be connected to the supply and load equipment (remove the jacket, separate the conductors, and strip the end of the conductors of any insulation). The cable must be disconnected from any equipment at both ends. This includes roadway lighting, disconnects, service point, and any other kind of device that may be connected to the conductors.
3. Separate the conductors from each other, and from any ground conductors.
4. Thoroughly clean the exposed conductor ends to remove any dirt or debris. They should also be completely dry at the time of measurement.
5. Apply 500 volts DC for 60 seconds per conductor. Each insulated conductor should be tested separately, and record the reading of resistance in megohms at 60 seconds.

Minimum acceptable insulation resistance for cables rated for 600 volts with respect to length is the following:

Length of Cable (ft)	Min. Acceptable Insulation Resistance (MΩ)
100	16
200	8
300	5.3
400	4
500	3.2
600	2.7
700	2.3
800	2
900	1.8
1000	1.6
1100	1.5
1200	1.3
1300	1.2
1400	1.14
1500	1.07
1600 or greater	1

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ELECTRICAL CONDUCTORS-IN-CONDUIT

Results.

Table 1. MEG Test on sections within a circuit.

Section Insulation Resistance Test Circuit No. ( ) Ambient Temperature ( )°F	
	Resistance (MΩ)
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Section No. ( )	
Inspector's Initials	

Note:

1. Any conductor not meeting the minimum acceptable value shall be replaced at the Contractor's expense using new conductor.
2. Circuit No. This is typically the number in a circle on the plans. If no circuit number is present, the engineer will provide one.
3. Section No. This is typically the number in a rectangle on the plans. If no section number is present, the engineer will provide one. A section is considered to be a single section of conductor with no splices. See Figure 2.

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ELECTRICAL CONDUCTORS-IN-CONDUIT

Table 2. MEG Test on a circuit as a single unit.

Circuit Insulation Resistance Test Ambient Temperature ( )°F	
Circuit No.	Resistance (MΩ)
Inspector's Initials	

Note:

1. Any conductor not meeting the minimum acceptable value shall be replaced at the Contractor's expense using new conductor.
2. This is measuring the insulation resistance on the entire run of a circuit with the inclusion of the splices. See Figure 1.
3. Circuit No. This is typically the number in a circle on the plans. If no circuit number is present, the engineer will provide one.

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ELECTRICAL CONDUCTORS-IN-CONDUIT

Leakage Current Test

DESCRIPTION. This item describes a testing method for the Leakage Current Test as called for on the plans. All tests and data recordings must be done in the presence of, and signed by the field inspector. Any deviation from these procedures shall require approval by the Engineer. Contractor shall be responsible for all damages caused by improper Leakage Current Test. Any conductor not meeting zero leakage current shall be replaced at Contractor's expense using new conductor.

MATERIALS. A digital current clamp meter ("Meter") is required to perform the test.

TESTING PROCEDURE.
Before starting the measurement:

- Connect the conductors to service. Connect all circuits.
- If circuit includes High-Mast— place High-Mast disconnect in the "off" position.
- If circuit includes Roadway Poles— disconnect breakaway fusible links. Leave EGC grounded. Make safe any exposed ends. Do not allow ends to make contact with anything.
- Lastly, turn on service point.

At the service point—place the Meter, measure, and record whether the leakage current is detected on each conductor on the circuit. Make sure the mating faces of the jaws are protected from damage, kept clean, and closed completely together without an air gap when testing. Avoid twisting the jaws of the Meter.

Minimum acceptable leakage current shall be zero. There is no minimal acceptable leakage current. The presence of leakage current indicates a fault in the wiring. The contractor shall be responsible for location and replacing damaged conductors. A circuit shall not be deemed acceptable until passing the leakage current test.

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ELECTRICAL CONDUCTORS-IN-CONDUIT

Results.

Leakage Current Test	
Circuit No.	Current (A)
Inspector's Initials	

Note: 1. Any conductor not meeting the minimum acceptable value shall be replaced at the Contractor's expense using new conductor.

2. Circuit No. This is typically the number in a circle on the plans. If no circuit number is present, the engineer will provide one.

3. Section No. This is typically the number in a rectangle on the plans. If no section number is present, the engineer will provide one. A section is considered to be a single section of conductor with no splices.

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BRIDGE MOUNTED GALVANIZED STEEL CONDUIT SYSTEM

DESCRIPTION: This item shall consist of furnishing and installing, at the locations shown on the plans or as directed, a bridge mounted galvanized steel conduit system of the type specified according to this special provision, Arkansas Department of Transportation's Standard Specifications Section 709, and in accordance with the plan sheets. The purpose of the bridge mounted galvanized steel conduit system is to provide cable ways across bridges for future intelligent transportation system (ITS) and utility cables. Provide brackets, support assemblies, hangers, fittings, bonding jumpers, grounding systems and other installation accessories as required.

MATERIALS AND CONSTRUCTION: All construction and materials shall be in accordance with the plan sheets, this special provision, and ARDOT Standard Specifications Section 709. The bridge mounted galvanized steel conduit system shall be as specified on the drawings. All components of the bridge mounted galvanized steel conduit system shall comply with ARDOT Standard Specification Section 709.02. Each conduit run shall be electrically bonded to each junction box in which it terminates. Additionally, install bonding jumpers across expansion fittings between conduit sections for ground path continuity. Utilize external bonding jumpers of length suitable for the full expansion. Utilize a minimum 6 AWG stranded copper bonding jumper or equivalent.

Submit product data and installation details for conduit or raceway installation on the following items:

a. GRS conduit
b. Fittings
c. Bridge expansion joints - flexible metallic conduit with liquid-tight jacket
d. Expansion fittings
e. Metallic joint compounds and sealing compounds
f. Grounding straps and grounding systems
g. Pull cords or pull tapes
h. Conduit mandrels
i. Conduit numbering schedule/tabulation

CONSTRUCTION REQUIREMENTS: The bridge mounted galvanized steel conduit system shall be mounted to the bridge structure as shown on the bridge plans for this project, as required by ARDOT Standard Specifications Section 709.03, or as directed by the Project Engineer.

SPECIAL CONSIDERATIONS FOR ITS CONDUIT BANK:

A. All conduits shall be labeled with an ID number matching the subject job plans. Provide metallic numbering tags indicating the conduit number on both ends of all conduit runs.

B. After final assembly is placed, all conduits shall be thoroughly cleaned and mandrelled prior to installing pull tape. Each conduit shall be mandrel led by pulling a flexible

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BRIDGE MOUNTED GALVANIZED STEEL CONDUIT SYSTEM

mandrel sized at least at 85% of the conduit inner diameter through the conduits. At the completion of mandrelling and before final acceptance, a nylon pull tape rated for 1800 pounds minimum shall be installed in each empty conduit. The pull tape shall always remain accessible from each end.

C. Raceways that cannot meet the requirements for mandrelling, shall be deemed defective, and shall be replaced at the Contractor's expense.

D. A conduit mandrel log shall be kept and submitted for review and approval for all conduits mandrelled. The mandrel log shall contain the following information in tabular format for each conduit mandrelled:

1) Conduit description
2) Conduit endpoints
3) Conduit size
4) Date mandrelled
5) Pass/fail for specified mandrel
6) Install of pull cord

E. Where the ITS conduit bank penetrates the bridge abutment(s), each conduit run shall transition from galvanized rigid steel conduit to Schedule 40 rigid PVC conduit per ARDOT Standard Specification Section 710.

METHOD OF MEASUREMENT: The bridge mounted galvanized steel conduit system will be measured by the unit price bid per "Linear Foot".

BASIS OF PAYMENT: Work completed, accepted, and measured as provided above will be paid for at the contract unit price bid per Linear foot of the bridge mounted galvanized steel conduit system, which price shall be full compensation for furnishing and installing the conduit system. All mounting materials, support assemblies, fittings, expansion joints, bonding jumpers, grounding systems, and liquid- tight flexible conduit lengths shall be considered subsidiary to the bridge mounted galvanized steel conduit system.

Payment will be made under:

Pay Item	**Pay Unit**
Galvanized Steel Conduit (2")	Lin. Ft.

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BRIDGE POST MOUNTED SIGN SUPPORT

DESCRIPTION: This item shall consist of furnishing and installing at locations shown upon the plans or as directed, Bridge Post Mounted Sign Support assembly in accordance with these special provisions and the Standard Specifications for Highway Construction, Arkansas State Highway and Transportation Department Edition of 2014.

MATERIALS AND CONSTRUCTION SPECIFICATIONS: Material for pipe shall be ASTM A53 Grade B pipe or A501. Structural steel plates shall be ASTM A36, A572, or A588. Bolts used to connect pipe and mounting bracket, and wind beam to sign panel shall be ASTM A307. Anchor bolts shall be ASTM A325 or A193 B7. Each anchor bolt shall be provided with 2 flat washers, 1 lock washer, and 1 heavy hex nut. All structural steel shall be galvanized after fabrication according to AASHTO M 111. All bolts, nuts, and washers shall be galvanized according to AASHTO M 323 or M 298, Class 40 or 50.

Hardware required for attachment of the sign(s) shall comply with Section 724.

Shop drawings shall be submitted to the Engineer for approval before fabrication begins. The Contractor shall be responsible for the accuracy of the drawings, even though the drawings may have been approved by the Engineer.

Field welding will not be permitted except upon approval in writing by the Engineer. The Bridge Post Mounted sign support shall be constructed and installed at the locations shown on the plans or as directed. All sign supports shall provide a minimum vertical and horizontal clearance as shown on the plans. To ensure proper clearances, dimensions of the structure that affect clearances shall be verified by the Contractor by field measurements before fabrication begins. Sign supports shall be erected so that the sign face is plumb and at right angles

METHOD OF MEASUREMENT: Bridge Post Mounted Sign Supports shall be measured for payment by the number of units “Each”, complete with all components and requirements provided as specified in this specification and referenced special provisions and delivered as directed by the Department.

BASIS OF PAYMENT: Work completed and accepted under this item and measured as provided above shall be paid for at the contract unit price bid for each Bridge Post Mounted Sign Support, which price shall be full compensation for furnishing and installing the Bridge Post Mounted Sign, and all materials, equipment, tools, labor, and incidentals necessary to complete the work. Partial payments may be made at the discretion of the Engineer.

Payment will be made under:

Pay Item	**Pay Unit**
Bridge Post Mounted Sign Support	Each

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JOB NO. 110812

LOCAL WORK ZONE LAW ENFORCEMENT

DESCRIPTION: This item shall consist of providing a local law enforcement presence by utilizing police officers and marked patrol units to enhance safety for motorists and workers through the work zone. Enforcement services may include traffic control and/or safety measures.

Law enforcement officers who work inside the construction zones must hold at a minimum Commission on Law Enforcement Standards and Training (CLEST) Basic Certification or equivalent for out of state officers. These officers will be required to have also completed the following training:

- Traffic Incident Management (TIM) course (either in-person or online) and provide a course issued certificate showing their completion. The Arkansas Highway Police can facilitate a TIM class for officers if necessary.
- A 2-Hour Work Zone Enforcement and Safety course instructed by the Arkansas Highway Police at no cost to the local law enforcement agency and provide a course issued certificate showing its completion. This course will include information on the make-up of the work zone, safe practices for law enforcement working in work zones, and other pertinent information.

The “Department”, defined as ARDOT Resident Engineer’s Office #11 for this contract, will: a) coordinate with the Contractor and Arkansas and Mississippi law enforcement agencies and b) schedule the training required by contacting Lt. Rogan Ross, Lead Instructor at the Arkansas Highway Police Department at (501) 569-2421 or by email at rogan.ross@ardot.gov.

CONTRACTOR REQUIREMENTS: Local law enforcement agencies shall be invited to the Preconstruction Conference and all weekly coordination meetings held by the Department with the Contractor. This includes all meetings held to discuss work sequences, temporary traffic control, or any other element which would benefit from law enforcement participation. It shall be the responsibility of the Contractor to coordinate with the Engineer to determine the need for law enforcement services regarding phases, time of work, enforcement type, and location. Upon concurrence from the Engineer, it shall be the responsibility of the Contractor to coordinate the appropriate needs with each law enforcement agency along the route.

Scheduling of officers will be in accordance with these guidelines. The hourly cost for an officer and patrol unit shall be $75.00 per hour.

The Contractor shall provide daily work records of the actual hours of work performed by each law enforcement agency and shall be accompanied by signed invoices from the law enforcement agency, which must be verified by the Engineer.

The Department shall be the final authority for the decision to utilize police in the Work Zone. The Contractor will be responsible for contracting local law enforcement agencies. The RE Office shall email the Contractor documenting their approval and anticipated times for police utilization. The Contractor shall notify the ARDOT RE office immediately when a Work Zone safety issue arises that could be addressed with police presence.

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JOB NO. 110812

LOCAL WORK ZONE LAW ENFORCEMENT

METHOD OF MEASUREMENT: Local Work Zone Law Enforcement will be measured per hour verified by the Engineer using an invoice or acceptable record.

BASIS OF PAYMENT: Work completed, measured and accepted will be paid for at the hourly rate shown above, which shall be full compensation for all labor, vehicles, equipment, and incidentals to provide law enforcement services to the work zone.

Payment shall be made under Subsection 109.04(b), Force Account, however only the hourly compensation shown above will be made. No other allowances for labor, equipment, or materials will be made. Payment will be made to the Contractor who in turn is responsible for payments to the law enforcement agency. No direct payment is to be made to individual officers.

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SPECIAL PROVISION

JOB 110812

BRIDGE JACKING AND TEMPORARY FALSEWORK FOR BEARING REPLACEMENTS

DESCRIPTION: This item consists of furnishing all labor, equipment, materials, design, and other services necessary to jack the existing bridge superstructure at the west and east abutments for bearing replacement. The jacking and temporary falsework for the bearing replacements will be done under live traffic. The work in this special provision if to be completed as described on Bridge No. 02899 on Highway 49 over the Mississippi River at Helena-West Helena.

GENERAL: This work shall include, but not be limited to:

1. Design and installation of a vertical jacking system for lifting and setting the bridge superstructure.
2. Design and installation of temporary falsework.
3. Development of falsework, jacking, and setting plan for review.
4. Evaluation of the estimated and actual impacts to the bridge superstructure due to the jacking operation.
5. Preparation of a contingency plan for the bridge jacking and falsework.
6. Conducting a strategic coordination meeting prior to the jacking operations.

DEFINITIONS:

1. **Vertical Jacking System:** Specialized equipment and materials used to transfer the existing bridge superstructure onto and off of the temporary falsework.
2. **Temporary Falsework:** Any structure used to provide temporary support to the bridge or bridge superstructure.
3. **Monitoring:** The act of using equipment to measure, record, and quantify changes to the geometry and condition of the bridge superstructure because of a temporary support condition and jacking operations.
4. **Heavy Lifter:** The Contractor or Subcontractor to provide jacking equipment and perform jacking operations.
5. **Working Drawings:** Design sheets, or similar, including supporting calculations that the Contractor is required to submit to the Engineer, such as shop drawings, erection plans, and falsework or any supplementary plans or documents which illustrate the construction of the work required in this provision to supplement the design documents.
6. **Superstructure:** Bridge elements above the top of steel piers including, but not limited to, the deck, stringers, girders, and bridge parapet.

EQUIPMENT AND MATERIALS: Provide equipment and materials meeting the following requirements and specifications:

1. **Temporary Falsework:** Provide a temporary support system capable of supporting the existing bridge superstructure and any equipment or materials required for construction and any additional loads due to jacking operations. The Temporary Falsework System shall be designed to accommodate the following minimum service (unfactored) loads per abutment bearing:
   - **a.** Falsework Self Weight: Contractor to determine
   - **b.** Superimposed Dead Load: 1425 kips
   - **c.** Live Load: 95 kips (single lane) and 111 kips (2 lanes)

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The Contractor shall determine their own method to transfer the loads from the falsework to the existing abutments, but the method shall be noted in the Working Drawings submittal with proper calculations.

2. **Vertical Jacking System:** Provide a jacking system capable of lifting and lowering the superstructure from temporary and final positions. The jacking system shall have a minimum capacity of twice the sum of the service dead load and live load, and shall be secured to resist any lateral loading.

3. **Superstructure Monitoring:** Supply monitoring equipment to actively monitor and record deflections of the superstructure. Using monitoring equipment capable of measuring relative movements to 0.125 inches. Halt operations immediately if deflection exceeds allowable limit or if directed by the Engineer.

SUBMITTALS: The Contractor shall prepare a submittal package as noted below. The Contractor shall submit Working Drawings and design calculations to the Engineer for acceptance at a minimum of 30 calendar days prior to jacking and installation of falsework.

1. **Heavy Lifter Qualifications:** Submit proof that the Heavy Lifter's qualifications have been met with similar projects in the United States completed within the last five years with names and phone numbers of the previous project owners.

2. **Working Drawings and Calculations for Bridge Temporary Falsework:** Working drawings for the Temporary Falsework shall be prepared for submittal. Design shall be according to AASHTO LRFD Bridge Construction Specifications, 4th Edition, with 2020, 2022, 2023, 2024, and 2025 Interim Revisions – Section 3 (Temporary Works). Provide drawings defining the geometry, materials, and member sizes of the bridge and temporary works. If necessary, include foundations and details of temporary bents to support the span under construction, including piling, spread footings, or other foundations.

   Provide calculations indicating the bridge temporary works are adequate for the proposed loads and that settlement or elastic deflections of the bridge temporary works will not adversely affect the bridge when jacked. Complete and document Quality Control (QC)/Quality Assurance (QA) review. The design and working drawings shall be signed and sealed by a licensed Professional Engineer in the State of Arkansas.

3. **Jacking Plan:** A Jacking Plan shall be prepared for submittal, which should include at least the following:
   a. Equipment to be used.
   b. All Equipment Specifications from the Manufacturer and include at least the following:
      i. Maximum allowable weight per jack.
      ii. The allowable maximum height of the jack to properly raise the superstructure for the construction.
      iii. Stroke length.

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c. Base plate dimensions and weight.
d. Material dimensions, specification, and supplier information for any additional steel, concrete, or wood members or bolts used to assist the jacking operation.
e. Load paths for the additional members.
f. Location of where the monitoring equipment will be placed.
g. Step by step jacking procedures:
  i. Include operational details for the control of lifting and setting the bridge superstructure.
  ii. Include quality control steps the operators take to verify the system is properly set up, and that the setup matches the submitted drawings.
  iii. Include steps to provide the jacking sequences for safety.
  iv. Include an hour-by-hour schedule of the jacking sequence.

4. **Monitoring Plan:** Provide a monitoring plan either as working drawings, or as a manual, to include at least the following:

   a. Description and details of the monitoring system provided by the manufacturer.
   b. Measuring equipment, procedures, required measurements, and locations of geometry control reference points on the bridge and in the bridge staging area. Measurements may be elevations, dimensions, or other readings.
   c. Pre-jacking and jacking monitoring.
   d. Warning levels and absolute limit levels. Define allowable tolerances and warning levels.
     i. Set displacement limits to avoid damage to the bridge during the jacking.
     ii. Set displacement limits that are less than or equal to the limits defined in the contract plans and this Special Provision.
   e. Minimum detectable movements and system accuracy.
   f. Potential remedial actions that must be implemented when measurements exceed the warning levels.
     i. Required measurements, when they are taken and recorded.

5. **Contingency Plan:** Provide a Contingency Plan that includes potentially disruptive events and a contingency plan for each. Address equipment breakdown, delays due to relocation of jacking equipment, setup, and operation, Excusable, Non-Compensable Delays and Excusable, Compensable Delays as defined in the “Site use (A+C method) – Calendar Day Contract” Special Provision, an accident/emergency response, and any other risks. Define key personnel, their responsibilities, and their required actions if any part of the contingency plan must be implemented. List backup equipment on site and local contacts for replacement parts or service.

6. **Safety and Communication Plan:** Provide a Safety and Communications Plan and include at least the following:
   a. Safety Plan
     i. Schedule of operation

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ii. Organization of machinery
iii. Safety gear requirements
iv. Operational perimeter
v. Communication plan
vi. Public impacts, methods of communication during bridge jacking, and lead communicator

b. Contact Information:
i. Bridge jacking supervisor (primary point of contact for the relocation of jacking equipment, setup, and operation)
ii. Contractor supervisor
iii. Safety supervisor
iv. Engineer of Record
v. Contractor's Engineer
vi. ARDOT Resident Engineer

7. **Contract Plan Revisions:** If the Contractor proposes to modify any of the design plan details, the following must be provided to the Engineer for approval.

a. Provide revised plans detailing dimensional, structural, and other physical changes to the permanent structure necessitated by the construction methods.
b. Design and detail changes according to AASHTO Standard Specifications for Highway Bridges, 17th Edition.
c. Provide supporting calculations that include at least the following:
i. Summary of revisions and evaluation.
ii. Calculations showing that the proposed changes do not adversely impact the load carrying capacity of the structure.
d. Complete and document QC/QA procedures.
e. Provide the seal of a Professional Engineer (PE) licensed in the State of Arkansas on plans and calculations covering the plan revisions made.

8. **Pre-Opening Work:** List activities and anticipated time frames for work requiring completion before shifting traffic onto the Maintenance of Traffic one-lane pattern or opening the bridge to normal two lanes of traffic.

CONSTRUCTION METHODS AND REQUIREMENTS:

1. **Qualifications of Heavy Lifter:** The Heavy Lifter shall have a minimum of five years of experience of heavy lifting and shall successfully completed a heavy lifting operation using the chosen method in the United States.

2. **Jacking of Existing Structure:** The proposed method for jacking the structure shall conform to the following:

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a. The existing members shall be jacked the minimum amount to allow for the removal and replacement of bearings. The jacking height should also account for any formwork necessary to complete the task.
b. Jacking may be done at the member, falsework, or a combination of both.
c. Suitable blocking (i.e. cribbing, shoring, shimming, falsework), independent of jacks, shall be provided to ensure full support of raised superstructure while the jacking system assembly is placed and removed. Blocking shall be sized such that the overall lateral stability of the blocking is assured. Blocking shall be carefully placed to maintain lateral stability of the span being lifted. Lateral movement during the jacking operation shall be kept to a minimum.

The results obtained by the jacking method are the Contractor's responsibility. The Contractor shall be responsible for any damage caused by the operation in the process of jacking the structure and shall repair such damage without additional compensation.

3. **Safety and Contingency Plans:** At a minimum of two weeks prior to jacking, the Engineer shall conduct a Safety and Contingency Plan Coordination Meeting involving the Contractor, Heavy Lifter, Arkansas Department of Transportation liaison, construction inspectors, and law enforcement. Identify all issues or items that have potential impact on the safety of any personnel, bridge superstructure, and the schedule. Establish a two-way communication method that all parties agree upon. Law enforcement shall be present at each end of the bridge as load is being transferred to the jacks, as a precaution.

   On the day of the jacking, conduct a final walk-through safety meeting immediately prior to jacking the bridge, with the Contractor, Heavy Lifter, and the Engineer. Verify all items identified in the contingency and safety plans have been completed. Reinforce communication and authority responsibilities during the jacking process. Submit the final contingency plan to the Engineer a minimum of 48 hours before the jacking operations begins.

4. **Placement of Superstructure:** Prior to setting down bridge superstructure, verify that all elevations have been confirmed. Verify that all required shims and bearing materials have been placed. Lower superstructure into place and load the substructure or falsework uniformly. Place bridge superstructure within 0.25 inches horizontally and 0.125 inches vertically of their defined final location.

   Conduct check of deflected shape and survey to confirm that bridge is in tolerance at its final location. Conduct a post-move crack survey of the structure within seven days of the bridge move and provide the crack survey to the Engineer. Crack repair or any apparent damage that will require repair to the bridge structure will be determined by the Engineer.

METHOD OF MEASUREMENT: "Temporary Falsework" and "Bridge Jacking" shall be measured on a "Lump Sum" basis.

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BASIS OF PAYMENT: Work completed and accepted as provided above will be paid for at the Lump Sum price bid for “Temporary Falsework” and “Bridge Jacking”, which price shall be full compensation for all design, blocking/shoring, falsework, jacking, and furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Bridge Jacking	Lump Sum
Temporary Falsework	Lump Sum

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LIGHTWEIGHT AGGREGATE CONCRETE (AE)

Section 802, Concrete for Structures, of the Standard Specifications for Highway Construction, Edition of 2014, as amended by **Supplemental Specification 802-5**, is hereby supplemented as follows:

DESCRIPTION: This work consists of furnishing and placing air-entrained lightweight aggregate concrete as shown on the Plans and in accordance with the requirements of this Special Provision.

MATERIALS: Lightweight aggregate shall conform to ASTM C330, *Standard Specification for Lightweight Aggregates for Structural Concrete*. Fine aggregate conforming to the requirements of Section 802 may be used.

Macrofibers: Synthetic macrofibers shall be incorporated into the concrete mixture at a dosage rate of 3.0 lb/yd³. The fibers shall have a minimum length of 2 inches, shall meet the requirements for Type III synthetic fibers in ASTM C1116, and shall be compatible with the concrete mixture. Fibers shall be added and dispersed in accordance with the manufacturer's recommendations to ensure uniform distribution throughout the mixture.

Mix Design: The aggregate gradation requirements of Table 802-3 and the optimized combined aggregate gradation requirements of Subsection 802.05(b) shall not apply to Lightweight Aggregate Concrete (AE). Lightweight aggregate shall conform to ASTM C330. Coarse lightweight aggregate shall not exceed 55% of the total concrete volume. The aggregate gradation and proportions shall otherwise be established as part of the approved mix design.

The minimum compressive strength requirement for Class S(AE) concrete in Table 802-1 shall not apply to Lightweight Aggregate Concrete (AE). Lightweight Aggregate Concrete (AE) shall meet the following requirements:

Property	Requirement
Maximum Equilibrium Density	105 lb/ft³
Minimum Compressive Strength at 28 days	3,500 psi
Synthetic Macrofiber Dosage	3.0 lb/yd³

No later than 90 days before the first concrete placement, the Contractor shall obtain lightweight aggregate samples from proposed suppliers and develop trial batches using the proposed materials. The trial mixtures shall be tested for slump, air content, compressive strength, and equilibrium density. The trial batches shall also be evaluated for cracking and curing requirements. The Contractor shall prepare all specimens necessary for the required testing and evaluation.

Additional trial batches shall be developed as necessary to demonstrate compliance with the requirements of this Special Provision. Test results shall be submitted with the mix design for approval by the Materials Division.

As part of the trial batch evaluation, the Contractor shall construct a 10 ft × 10 ft trial slab, 6.25 inches thick, using the proposed concrete mixture and materials. The trial slab shall be

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LIGHTWEIGHT AGGREGATE CONCRETE (AE)

evaluated for cracking and the effectiveness of the proposed curing procedures. Cracking observed in the trial slab shall be documented and submitted with the trial batch results for evaluation by the Engineer.

Laboratory-controlled trial batches shall also be prepared using the proposed concrete mixture and materials. The temperature of the fresh concrete at the time of specimen preparation shall be within each of the following ranges: 85 °F to 90 °F, 70 °F to 75 °F, and 50 °F to 60 °F. For each temperature range, specimens shall be prepared and tested to demonstrate a minimum compressive strength of 3,500 psi at 28 days and a maximum equilibrium density of 105 lb/ft³.

CONSTRUCTION: Lightweight aggregate shall be stockpiled sufficiently in advance of concrete placement to provide the material necessary for the scheduled bridge deck placement. Lightweight aggregate shall be stored and maintained in a condition suitable for production of the approved mixture.

Lightweight Aggregate Concrete (AE) shall be placed in the dry.

Each deck lane shall not be opened to traffic until the Lightweight Aggregate Concrete (AE) has attained a compressive strength of at least 3,500 psi and the required curing has been completed.

QUALITY CONTROL AND ACCEPTANCE: Quality Control and Acceptance shall be in accordance with Subsection 802.06, except as modified herein.

For Lightweight Aggregate Concrete (AE), air content shall be determined in accordance with AASHTO T 196 in lieu of AASHTO T 152. Equilibrium density shall be determined in accordance with ASTM C567.

Lightweight Aggregate Concrete (AE) having an equilibrium density exceeding 105 lb/ft³ will be considered nonconforming. Failure to meet the maximum equilibrium density may require removal and replacement of the entire concrete placement at the Contractor's expense. Disposition of the nonconforming concrete will be determined by the Engineer in accordance with the applicable provisions of the Contract.

Subsection 802.25(a), Basis of Payment, is hereby supplemented by the following:

Payment will be made under:

Pay Item	Pay Unit
Lightweight Aggregate Concrete (AE)	Cubic Yard

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CONCRETE BRIDGE DECK CURING AND SURFACE TREATMENT RESTRICTIONS

Sections 802 and 803 of the Standard Specifications for Highway Construction, Edition of 2014, are hereby amended as follows:

The following is added as the last sentence of the fourth paragraph of **Subsection 802.17(b):**

> The use of lithium curing compound as a replacement for the methods specified above will not be permitted.

The following is added as the second paragraph of **Subsection 803.02 (a):**

> Lithium curing compound will not be permitted as a substitute for Class 1 Protective Surface Treatment.

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CLEANING AND PAINTING EXISTING STRUCTURAL STEEL

GENERAL: This item shall consist of cleaning and painting all existing structural steel, including the truss members, floor beams, stringers, cross beams, approach girders and bracing, steel piers, and any exposed steel (including misc. steel such as ladders, steel grates, steel bearings, etc.), on existing Bridge No. 02899 over the Mississippi River; and shall include the proper preparation of the surfaces; the application, protection, and drying of the paint coating; the protection of vehicular or other traffic upon, underneath, or in the vicinity of the structure; the protection against disfigurement by flying sand, rust, and old paint particles; protection from drift, spatters, splashes, and smirches of paint or of paint materials; and protection of the environment; except that the tops of existing floor beam and cross beam flanges embedded in concrete shall not be painted. The structural steel shall be cleaned and painted as specified in the contract and as outlined in these specifications.

TARPING:

- The Paint Contractor shall submit a design with calculations, including assumed tarping locations, of the tarping system prepared by an Arkansas Registered Professional Engineer to the Engineer for approval in accordance with Subsection 105.14. The design shall comply with both the AASHTO Guide Specification for Wind Loads on Bridges During Construction and the AASHTO LRFD Bridge Design Specifications. The submittal shall include the maximum wind speed considered, the anticipated construction duration, and the span coverage used in the analysis. The tarping system is to be used for work including cleaning, painting, and containment.

PAINT CONTRACTOR: The Paint Contractor shall:

- The Contractor or Subcontractor performing surface preparation and coating application on steel structures shall be certified under the Association for Materials Protection and Performance (AMPP) Qualified Procedures 1 (QP1) and QP 2 programs, formerly SSPC-QP 1 and SSPC-QP 2, administered under the AMPP Painting Contractor Certification Program (PCCP). The painting Contractor or Subcontractor shall hold these certifications prior to bidding and shall maintain them for the duration of the project. The Contractor shall provide the Department with all applicable AMPP and SSPC specifications referenced for use during the project.
- Comply with Section 807 “Steel Structures” with painting subsections and Section 820 “Cleaning and Painting Existing Structural Steel” in the ARDOT Standard Specifications for Highway Construction, 2014 Edition and other Special Provisions in the contract that have cleaning, priming, and/or painting requirements.
- Take all necessary steps to ensure that the workers, work area/s, surrounding areas with potential animals, vehicles, and people near the work zone are safe, protected from hazardous waste and debris from the painting operations, and clean from misc. items that could pose an injury risk.

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CLEANING AND PAINTING EXISTING STRUCTURAL STEEL

- Provide to the Engineer for approval a "Painting Sequence of Construction Plan" prior to the beginning of cleaning and painting operations. The Paint Contractor shall coordinate cleaning and painting operations with the lane closures in the Maintenance of Traffic Stages 1 & 2, steel repairs on the truss and substructure of the bridge, and installation of ITS components.
- During the rehabilitation construction operations of the bridge, steel components and the deck concrete will be removed and replaced before the final application of paint coats can begin. An analysis shall be conducted considering the weight of the work platforms, paint cleaning and containment equipment, and the effects of equipment speed. The analysis should be based on the recycled/vacuum truck weight when it is full. The proposed paint tarping system and blast containment system information shall be included in this submittal for review and approval by the Engineer.
- If during the blast cleaning of the existing truss and structural steel a potential area of concern is exposed, the Paint Contractor shall stop and request examination & instructions on how to proceed from the Engineer.
- The Paint Contractor shall be responsible for medical lead testing compliance and exposure protection for all construction personnel exposed to the lead paint removal process. This includes blood level lead testing before, during, and after exposure to the paint removal process.
- The Contractor shall NOT store paint or any toxic materials in the Arkansas or Mississippi flood plains.
- Cleaning and painting of the truss with an open lane of traffic below will be allowed if tarping is 25 feet or more above traffic on the bridge deck. Cleaning and painting shall not be on-going directly above a concrete deck pour below in the closed lane. These protective limitations do not affect the plan directive to clean and paint the entire truss structure.

CLEANING AND PAINTING OF SURFACES:

- The existing paint contains lead and may contain other toxic materials. All power tools shall be equipped with vacuum shrouds and tipped with HEPA-grade air filters at their air exhaust. Cleaning preparation shall adhere to SSPC-SP 10 Specifications
- All structural steel surfaces designated to be coated shall be cleaned in accordance with this Section. Cleaning operations shall be performed under containment and environmental protection systems adequate to prevent the emission of dust, spent abrasive, or paint particles into the environment and shall comply with Subsections 820.05 through 820.09. Surfaces to be painted shall be clean, dry, and free from dust,

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CLEANING AND PAINTING EXISTING STRUCTURAL STEEL

oil, grease, and any other deleterious material that may impair coating adhesion. All surface-preparation and cleaning work shall be performed by personnel employed by Contractors certified under AMPP AP 1 and, when hazardous materials are present, AMPP AP 2. All work shall conform to the latest applicable AMPP/SSPC standard reverenced in this Section.

- Cleaning shall consist of cleaning all structural steel surfaces to produce a surface conforming to AMPP SSPC-SP 10/ NACE No. 2, *Near-White Blast Cleaning*. Prior to proceeding with full surface preparation, the Engineer and the Contractor shall establish a project specific surface cleanliness standard or test section for acceptance of cleaning operations.

  Surface preparation requirements include:

  - **Chloride Testing**: Perform chloride testing before applying the coating system in accordance with AMPP SSPC-Guide 15.
  - **Surface Profile**: Measure the surface profile in accordance with ASTM D4417, Method B, and ensure it conforms to the paint manufacturers' recommendations.
  - **Abrasives:** Do not use coal-slag abrasive material.

  Previously Cleaned or Previously Painted Surfaces:

  - Steel surfaces that have been previously cleaned, but subsequently exposed to the weather, allowing rust to form, shall be re-cleaned to remove all rust and contaminants prior to application of the coating system. Re-cleaning shall meet the same requirements specified for initial surface preparation. All previously painted surfaces to be recoated shall be clean and free of dust or other objectionable matter. Paint shall be applied with the recoat interval recommended by the coating manufacturer. If the recoat interval is exceeded between coats, the weathered surface of the preceding coat shall be cleaned or removed as required in writing by the coating manufacturer and approved by the Engineer before paint is applied.

PAINT SYSTEM: The paints shall be organic zinc-rich paint and meet the requirements of Section 807 "Steel Structures" with painting subsections and Section 820 "Cleaning and Painting Existing Structural Steel" in the ARDOT Standard Specifications for Highway Construction, Edition 2014, and project special provisions.

Apply stripe coats according to manufacturer's instructions to achieve complete coverage on welds, corners, crevices, sharp edges, bolts, nuts, rivets, and rough or pitted surfaces. Extend

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the stripe coat a minimum of 1-inch beyond the edge, seam, fastener assembly, etc. In general, use brush or dauber to apply stripe coat and work into crevices and uncoated areas. For continuous uninterrupted edges (not lattice or built-up members), apply stripe coat by spray or rollers. **The color shall meet Aluminum color - Fed. Std. 595B Color Chip No. 27200 (semi-gloss)** The Contractor shall apply a maximum dry film thickness as recommended by the coating manufacturer. The Paint Contractor shall ensure that each layer of paint is compatible with the previous layers to avoid issues with peeling, cracking, or lifting.

PAINT APPLICATION: The paint shall be applied using an airless spray paint system.

MATERIALS: Paint shall meet the material requirements of Section 807 “Steel Structures”, with painting subsections, for new replacement steel members and Section 820 “Cleaning and Painting Existing Structural Steel” for existing steel members in the ARDOT Standard Specifications for Highway Construction, 2014.

PAINT CONTRACTOR LABEL: The Painting Contractor shall place a label on the back side of the outside girder approximately midspan of Span 1. The label will be stenciled with 3-inch letters in a durable paint color that contrasts with the bridge paint for easy reading and include the ARDOT project number, the Paint Contractor’s name, the date of painting completion, the type and color of paint, the type of paint system, and the paint supplier. The stencil font style chosen by the Contractor shall be highly visible, legible and approved by the Engineer.

DISPOSAL OF HAZARDOUS WASTE (SITE NO. _): The Contractor shall comply with the requirements of Section 820 “Cleaning and Painting Existing Structural Steel - 820.04 Special Protection of the Environment” of the ARDOT Standard Specifications for Highway Construction, 2014 Edition and the contract special provisions addressing hazardous waste operations for lead paint. The Contactor shall be required to meet all requirements specified and provide documentation to the Engineer in a timely manner.

CLEANING THE BRIDGE ROADWAY SURFACE: The Contractor shall sweep clean the bridge roadway surface prior to starting of washing and painting operations and keep the bridge roadway surface clean until all work of painting has been completed and accepted.

REMOVAL OF “WELCOME TO ARKANSAS” SIGN: The existing state line bridge sign structure near Pier 15 and related mounting components for the “Welcome to Arkansas” sign will need to be removed prior to cleaning and painting.

METHOD OF MEASUREMENT: Cleaning and Painting Existing Structural Steel will be measured by the ton of structural steel. The quantity of structural steel shown on the plans will be final.

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BASIS OF PAYMENT: Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per ton for Cleaning and Painting Existing Structural Steel, which price shall be full compensation for cleaning the metal surfaces; for painting the structure; and for furnishing materials and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Cleaning and Painting Existing Structural Steel (Type II)	Ton
Disposal of Hazardous Waste (Site No. _)	Lump Sum

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DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES

DESCRIPTION: This item consists of the optional use of compressible-washer-type direct tension indicators to indicate bolt tension in high strength bolted assemblies in accordance with these specifications and in conformity with the plans. All references to Division, Section, and Subsection refer to the Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition).

Subsection 807.06(a) is amended to include the following paragraph for Direct Tension Indicators (DTI):

Direct tension indicators shall be used in conjunction with bolts, nuts and washers as specified above. Direct tension indicators shall conform to the requirements of ASTM F959. Direct tension indicators for plain Type 1 high strength bolts shall be plain or galvanized. Galvanizing for direct tension indicators shall be by mechanical deposition in accordance with ASTM B695, Class 50. Direct tension indicators for Type 3 high strength bolts shall be Type 3.

Subsection 807.06(b) is modified as follows for Direct Tension Indicators (DTI): The first paragraph is deleted and the following substituted therefor:

(b) Required Tests:

(1) Rotational Capacity: High strength fasteners, plain and galvanized, shall be subjected to a rotational capacity test according to ASTM F3125, Grade A325, Section 8.1, and shall meet the following requirements:

Subsection 807.06(b) is modified as follows for Direct Tension Indicators (DTI): The third paragraph is deleted and the following substituted therefor:

(2) Verification Testing for Direct Tension Indicators: Verification testing shall be performed in a calibration bolt tension device. A special flat insert shall be used in place of the normal bolt head holding insert. Three verification tests shall be required for each combination of fastener assembly rotational-capacity lot, direct tension indicator lot, and direct tension indicator position relative to the turned element to be used on the project. The fastener assembly shall be installed in the tension measuring device with the direct tension indicator located in the same position as in the work. The element intended to be stationary shall be restrained from rotation.

The verification test shall be conducted in two stages. The bolt, nut and direct tension indicator assembly shall be installed in a manner so that at least three and preferably not more than five threads are located between the bearing face of the nut and the bolt head. The bolt shall first be tensioned to the load equal to that listed in Table 807-3 under Verification Tension for the specified bolt. If an impact wrench is used, the tension developed using the impact wrench shall be no more than two-thirds of the required tension. Final tensioning shall be attained using a manual wrench. The number of refusals of the 0.005" (0.125 mm) feeler gage in the spaces between the protrusions shall be recorded. The number of refusals for uncoated direct tension indicators under a stationary or turned element, or coated direct tension indicators under a

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stationary element, shall not exceed the number listed under Maximum Verification Refusals in Table 807-3 for the specified bolt. The maximum number of verification refusals for coated direct tension indicators, when used under a turned element, shall be no more than the number of spaces on the direct tension indicator less one. The direct tension indicator lot shall be rejected if the number of refusals exceeds the values in Table 807-3, or for coated if the gage is refused at all spaces.

After the number of refusals is recorded at Verification Tension, the bolt shall be further tensioned until the 0.005" (0.125 mm) feeler gage is refused at all the spaces and a visible gap exists in at least one space. The load at this condition shall be recorded and the bolt removed from the tension-measuring device. The nut shall be able to be run down freely by hand the complete thread length excluding thread run-out. If the nut cannot be run down for this thread length, the direct tension indicator lot shall be rejected unless the load recorded is less than 95 percent of the average load measured in the rotational capacity test of the fastener lot as specified in Subsection 807.06(b)(1) Rotational Capacity.

If the bolt is too short to be tested in the calibration device, the direct tension indicator lot shall be verified on a long bolt in a calibrator to determine the number of refusals at the Verification Tension listed in Table 807-3, the number of refusals shall not exceed the values listed under Maximum Verification Refusals in Table 807-3. Another direct tension indicator from the same lot shall then be verified with the short bolt in a convenient hole in the work. The bolt shall be tensioned until the 0.005" (0.125 mm) feeler gage is refused in all spaces and a visible gap exists in at least one space. The bolt shall be removed from the work and the nut shall be able to be run down freely by hand the complete thread length of the bolt excluding thread run-out. The direct tension indicator lot shall be rejected if the nut cannot be run down this thread length.

(3) Test Reports: The Engineer shall be furnished with a Manufacturer's certified test report for each production lot for all high strength bolts, nuts, washers, and direct tension indicators used on the project. This certification shall provide a lot number, shop order number, or other identification such that the heat number from which the items were made can be traced. This identifying number shall also appear on the sealed shipping containers. The certification shall indicate when and where all testing was done, including the rotational capacity tests, and include the zinc thickness when galvanized bolts, nuts, washers and direct tension indicators are used. The certification for direct tension indicators shall also include compression test loads, gap clearance, nominal size and type.

Subsection 807.71(b) is modified as follows for Direct Tension Indicators (DTI): The first paragraph is deleted and the following substituted therefor:

(b) Bolts, Nuts, Washers, and Direct Tension Indicators: Fastener components shall conform to the requirements of Subsection 807.06.

Subsection 807.71(d) is deleted and the following substituted therefor:

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(d) Installation: (1) Bolt Tension. Compressible-washer-type direct tension indicators shall be used to indicate bolt tension. They shall be subject to the verification testing specified in Subsection 807.06 (b)(2) and installed in accordance with the method below. Bolt lengths shall be sufficient to accommodate direct tension indicators and any additional washers required. Direct tension indicators will be required at all high strength bolted connections. Direct tension indicator type and manufacturer shall not be mixed within a project.

Unless approved by the Engineer, direct tension indicator shall be installed under the head of the bolt and the nut turned to tension the bolt. The Manufacturer's recommendations shall be followed for the proper orientation of the direct tension indicator and any additionally required washers. Installation of a direct tension indicator under the turned element may be permitted if a washer is used to separate the turned element from the direct tension indicator. The reuse of direct tension indicators will not be allowed. If it becomes necessary to loosen a previously tensioned bolt, the direct tension indicator shall be replaced.

Installation of fastener assemblies using direct tension indicators shall be in two stages. The stationary element shall be held against rotation during both stages. The connection shall first be brought to a snug tight condition with bolts installed in all holes. Snug tight, for bolt assemblies using direct tension indicators, exists when the plies of the joint are in firm contact and the number of spaces in which a 0.005" (0.125 mm) feeler gage is refused does not exceed that listed under Maximum Verification Refusals in Table 807-3. If the number of refusals exceeds the value listed under Maximum Verification Refusals in the Table 807-3 the direct tension indicator shall be replaced and the fastener assembly brought to a snug tight condition as specified above.

After all bolts in the connection have been properly brought to a snug tight condition, for uncoated direct tension indicators under a turned or stationary element and for coated direct tension indicators under a stationary element, the bolt assembly shall be further tensioned until the number of refusals of the 0.005" (0.125 mm) feeler gage is equal to or greater than the number listed under Minimum Installation Refusals in Table 807-3. If the bolt assembly is tensioned so that no visible gap remains in any space, the bolt assembly shall be removed and replaced by a new bolt and direct tension indicator that is properly tensioned. When coated direct tension indicators are used under a turned element, the 0.005" (0.125 mm) feeler gage shall be refused in all spaces, but a visible gap must remain in any space.

(2) Power Wrench Tightening. When power wrenches are used to provide the bolt tension specified Table 807-3, their setting shall be such that the requirements of Subsection 807.71(d)(1) are met. Wrenches shall be of adequate capacity to perform the required tightening of each bolt assembly in less than 10 seconds.

TABLE 807-3
DIRECT TENSION INDICATOR REQUIREMENTS

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U.S. Standard		METRIC (SI)				
Bolt Size (Inches)	**Verification Tension (kips)**	**Bolt Size**	**Verification Tension (kN)**	**Maximum Verification Refusals**	**DTI Spaces**	**Minimum Installation Refusals**
1/2	13			1	4	2
5/8	20	M16	96	1	4	2
3/4	29	M20	149	2	5	3
7/8	41	M22	185	2	5	3
1	54	M24	215	2	6	3
1 1/8	59	M27	280	2	6	3
1 1/4	75	M30	342	3	7	4
1 3/8	89	M36	499	3	7	4
1 1/2	108			3	8	4

Subsection 807.71(e) is deleted and the following substituted therefor:

(e) Inspection: (1) The Engineer will observe the installation and tightening of bolts to determine that all bolts are tightened as specified. Where direct tension indicators are used the Engineer will examine at least 10 percent, but no less than 2 bolt assemblies in each connection for gap requirements and acceptability in accordance with the requirements of paragraph (d)(1). If any bolt assembly fails to meet these requirements all bolt assemblies in the connection shall be examined by the Engineer and the Fabricator or Erector shall retighten or replace bolt assemblies according to paragraph (d)(1).

(2) At the direction of the Engineer the Contractor may be required to inspect tightened bolt assemblies in a connection using an inspection wrench (only calibrated torque wrench will be acceptable). The inspection shall be conducted before loss of lubricant or corrosion influences the tightening torque.

The inspection wrench shall be calibrated by tightening three typical sample bolt assemblies of the same grade, size and condition as those under inspection in a calibration bolt tension device. A special flat insert shall be used in place of the normal bolt head holding insert. Each sample bolt assembly shall be individually placed in the calibration device and tightened to the verification tension specified in Table 807-3 for the grade and size being inspected. The fastener assembly shall be installed in the tension measuring device with the direct tension indicator located in the same position as in the work. The element intended to be stationary shall be

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restrained from rotation and here shall be a washer under the turned element of each sample bolt assembly. The inspecting wrench shall be applied to the tightened sample bolt assembly and the torque necessary to turn the nut or head 5° (approximately 1" [25 mm] at 12" [300 mm] radius) in the direction of tensioning shall be determined. The average of the torque measured in the testing of the three sample bolt assemblies shall be taken as the job inspection torque.

Where directed by the Engineer bolt assemblies represented by the sample bolt assembly and that have been tightened in the structure shall be inspected by applying the inspection wrench and its job inspection torque. If no nut or bolt head is turned by this application of the job inspecting torque, the connection will be accepted as properly tightened. If any nut or bolt head is turned by the application of the job inspecting torque, this torque shall be applied to all bolts in the connection, and all bolt assemblies whose nut or head is turned by the job inspecting torque shall be tightened and reinspected, or alternatively, the Fabricator or Erector, at his option, may retighten all of the bolt assemblies in the connection and resubmit the connection for the specified inspection.

PAYMENT: All costs incurred in complying with this Special Provision including all costs for furnishing, installing, and testing of Direct Tension Indicators will not be measured or paid for separately, but shall be considered subsidiary to the items of “Structural Steel in Plate Girder Spans (M270-GR36)” or “Structural Steel in Truss Spans (M270-GR36)”.

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LOW-CARBON CHROMIUM REINFORCING STEEL

DESCRIPTION: This item shall consist of the use of Low-Carbon, Chromium Reinforcing Steel, also known as **MMFX** (Martensitic Micro-composite Formable Steel) or **Chrom X** where required by the plans.

Section 804 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

In **Subsection 804.06 Materials,** add the following after last paragraph:

Low-Carbon, Chromium Bar Reinforcement (LCCR). When specified, deformed bar reinforcement for concrete in sizes up to and including No.18 shall conform to the requirements of AASHTO M 334M/M 334, Grade 100, Type 1035 CS. Type CM will be permitted only if specifically allowed on the plans. Mill test reports shall be submitted for all reinforcing steel furnished under this specification.

In **Subsection 804.06 Placing and Fastening,** add the following after the third paragraph:

LCCR shall not be welded for structural applications except for tack welds as an aid to fabrication and/or installation.

In **Subsection 804.07 Splicing,** add the following after the last paragraph:

Mechanical splices shall be made from similar steel strength and composition as the steel being spliced and shall be in accordance with manufacturer's recommendations.

In **Subsection 804.10 Method of Measurement,** add the following after the third paragraph:

LCCR properly fabricated, placed, and tied will be measured by the "pound" based on the total computed weight for the sizes and lengths of the bars shown on the plans as revised by the Engineer.

In **Subsection 804.11 BASIS OF PAYMENT,** add the following item to the list:

Pay Item	Pay Unit
LCCR Reinforcing Steel – Bridge (Grade 100)	Pound

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BRIDGE STRUCTURAL STEEL REPAIRS

GENERAL: This special provision shall consist of repairs to the existing structural steel on existing Bridge No. 02899; and shall include the proper preparation of the surfaces and repairs as specified in the contract and as outlined in this specification. The following repair work shall be constructed by the Contractor after bridge traffic has been modified for stage construction, the deck concrete has been removed, and before pouring the new deck. Refer to the "Layout of Bridge Hwy. 49 over Mississippi River" and "Details of Main Truss Structural Steel Repairs" bridge plan sheets for locations of the various repairs noted in this document.

All materials required for the repair types (steel repair plates, replacement bridge members, bolts, etc., as examples) shall comply with Section 106.01 (b) of the ARDOT Standard Specifications for Highway Construction, 2014 Edition.

Refer to the "Schedule of Bridge Quantities" in the plans for pounds of steel anticipated for each of the repairs in this document. Repairs uncovered, beyond those noted in the plans for the various repair types, shall be brought to the immediate attention of the Engineer for approval and requirements for the additional repair work. Where shoring is not specified, securing and supporting replacement parts for the described repair, will be the responsibility and preference of the Contractor.

REPAIR TYPE A: FLOOR BEAM TOP FLANGE: The Contractor shall locate Floor Beam L32 and reference the bridge plan sheet "Details of Floor Beam Repairs: Repair Type A - Top Flange Repair". The existing shear studs are to be retained as labeled on the plan sheet and incorporated into the new deck. After removal of the existing deck, the Contractor shall install approximately 68 (sixty-eight) new shear studs with a nut added to the shank to complete the repair. The orientation of the new bolts shall be such that the shank of the bolt goes straight up through the top flange meeting a minimum embedment length as shown on the plan sheet.

If other locations are uncovered with top flange section loss and with damaged or rusted rivets. The Contractor, with the approval of the Engineer, will have two choices for repair:

- to remove and replace the rivets under the pay item "Repair Type F: Rivet Replacements"
- to install an additional "Repair Type A: Floor Beam Top Flange"

REPAIR TYPE B: FLOOR BEAM BOTTOM FLANGE: The Contractor shall locate the 11 (eleven) Floor Beams referenced on the bridge plan sheets for "Details of Floor Beam Repairs: Repair Type B - Bottom Flange Repair" (Sheets 1 of 2 & 2 of 2). Bottom Flange repair shall start by cleaning the existing bottom flange steel according to the "Steel Plate Connection Preparation" Special Provision and adding fill plates left and right to extend the existing cover plate as shown in Detail A. The Contractor shall remove the existing rivets one at a time, ream the holes, and replace the old rivets with 7/8" diameter long bolts to be fully tensioned. After this phase of work is complete, a cheese plate and a final repair plate on the bottom are to be installed with a second nut added to the bolt to complete the repair.

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BRIDGE STRUCTURAL STEEL REPAIRS

REPAIR TYPE C: FLOOR BEAM WEB: The Contractor shall locate the 9 (nine) Floor Beams referenced on the bridge plan sheets “Details of Floor Beam Repairs: Repair Type C – Web Repair” (Sheets 1 of 2 & 2 of 2). Web repair shall not begin until a new stiffener to support removal of the existing stiffener has been installed on both sides of the web as shown in the plans. The Contractor shall remove the rivets from the existing stiffener, clean the existing web steel according to the “Steel Plate Connection Preparation” Special Provision, drill holes for new high strength 7/8” bolts, and attach each new stiffener and required web repair plates applied on both sides of the web as shown in the plan sheet details.

If the Contractor should encounter damage beyond the anticipated repair dimensions in the plans or if the cleaning procedure damages the existing steel surfaces, the Contractor is to immediately contact the Engineer to determine if the proposed repair plates are adequate or if new plate fabrications will be required.

REPAIR TYPE D: FLOOR BEAM STIFFENER: The Contractor shall locate the 32 (thirty-two) Floor Beams referenced on the bridge plan sheet “Details of Floor Beam Repairs: Repair Type D – Stiffener Replacement”. Stiffener replacements shall not begin until the existing concrete deck above the repair location has been removed as shown in the plans. The Contractor shall field verify the damage at each location, add a new stiffener applied on both sides of the floor beam at that location as shown on the plans to support removal of the existing stiffener, remove the rivets for the existing stiffeners, clean the existing web steel according to the “Steel Plate Connection Preparation” Special Provision, and attach the new stiffeners with fill plates applied on both sides of the floor beam.

If the Contractor should encounter damage beyond the anticipated repair dimensions or if the cleaning procedure damages the existing steel surfaces, the Contractor is to immediately contact the Engineer to determine how to proceed with the needed repair.

REPAIR TYPE E: STRINGER PIN AND HANGER: The Contractor shall locate the 6 (six) Floor Beams referenced on the bridge plan sheet “Details of Repair Type E – Pin and Hanger Replacement”. The Contractor should refer to the “Repair E Locations” detail for locations with multiple stringers. Refer to the “Structural Steel Shoring” Special Provision for temporary support requirements. After removal of the existing pin and hanger bars and pins as labeled in the plans, the Contractor shall clean and paint 2’- 0” from the end of the stringer and paint the floor beam and stiffener 1’-0” to the right and left of the centerline of the stringer. The cleaning and painting will be according the “Cleaning and Painting Existing Structural Steel” Special Provision. After the preparation of the existing steel is complete, the Contractor shall install the replacement pin and hanger assembly. Refer to the plan sheet notes for additional paint instructions, pin hole preparation, and grease application to the pins.

REPAIR TYPE F: RIVET REPLACEMENTS: The Contractor shall locate the 29 (twenty-nine) Floor Beams with noted stringer locations and reference the bridge plan sheet “Details of Repair Types F and G”. The Contractor should refer to the “Repair F Known Locations: Rivet

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Replacements" detail for locations of the stringers and number of rivets involved. The Contractor shall remove the existing rivets one at a time, ream the holes, and replace the old rivets with 7/8" diameter high strength bolts as specified in the plan notes.

This repair shall also include the replacement of missing, faulty, defective, or broken existing rivets with 7/8" diameter, ASTM F3125, Grade A325 fully tensioned bolts in random locations not covered or accounted for by other repairs in the plans. If the rivet is in-place, the Contractor is to remove the deteriorated rivet. For all replacements, the hole is to be reamed if required before installing the new 7/8" high strength bolt. In locations where multiple rivets may need to be replaced, the Contractor shall remove and replace the deteriorated rivets one at a time.
The Contractor is to make a list of locations of anticipated rivet replacements to submit to the Engineer for approval and to document the work for pay. The quantity shown in the plans for rivet replacements at random locations as described above is: 1) an estimated quantity for bidding purposes and 2) an "If and Where Directed by the Engineer" pay item according to Section 104.03 of the ARDOT Standard Specifications for Highway Construction, 2014 Edition.

REPAIR TYPE G: STRINGER CONNECTION ANGLE REPLACEMENT: The Contractor shall locate Floor Beams L12 and L28 and reference the bridge plan sheet "Details of Repair Types F and G". The Contractor should refer to the "Repair G Locations: Stringer Connection Angle Replacement" on the bridge plan sheet for the stringer number, face side of the floor beam and the deteriorated angle involved with the repair. Refer to the "Structural Steel Shoring" Special Provision for temporary support requirements. The Contractor shall clean the existing steel according to the "Steel Plate Connection Preparation" Special Provision. After the existing steel preparation is complete, the Contractor shall install the new connection angle according to the plans.
REPAIR TYPE H: CROSS BEAM REPLACEMENT: The Contractor shall reference the bridge plan sheets "Details of Main Truss Structural Steel Repairs" for cross beam replacement locations and "Details of Repair Type H – Cross Beam Replacement". Cross beam repairs shall not begin until the existing concrete deck above the repair has been removed by the Contractor. In Step 1, the Contractor shall bolt the existing crossbeam to Stringer 2 before cutting and removing the first existing cross beam section as shown in the plans. The 17'-4" replacement cross beam is to be off-set within the maximum spacing of 4'-2" and be parallel to the old cross beam as shown in Step 2. Step 3 is after the shift to Stage 2 Maintenance of Traffic, and the existing cross beam section is to be removed. Step 4 consist of splicing a new 13'-0" section to the cross-beam section installed in Step 2.

Repair Type H is not intended for the replacement of all cross beams on the bridge, and the notes should be read on the plan sheet Details of Repair Type H – Cross Beam Replacement for clarification.

METHOD OF MEASUREMENT: "Bridge Structural Steel Repairs" will be measured by "Each" for the repair locations listed on the various bridge plan sheets. The estimated quantity of

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structural steel by the pound is shown for information only to be available should additional work be added to the contract upon field examination and verified by the Engineer.

BASIS OF PAYMENT: Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per “Each” for each listed repair location or with Type F Repairs per Each rivet, which price shall be full compensation for meeting the requirements of the “Steel Plate Connection Preparation” Special Provision; and for furnishing all required repair materials and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Repair Type A: Floor Beam Top Flange	Each
Repair Type B: Floor Beam Bottom Flange	Each
Repair Type C: Floor Beam Web	Each
Repair Type D: Floor Beam Stiffener	Each
Repair Type E: Stringer Pin and Hanger	Each
Repair Type F: Rivet Replacements	Each
Repair Type G: Stringer Connection Angle Replacement	Each
Repair Type H: Cross Beam Replacement	Each

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STEEL PLATE CONNECTION PREPARATION

DESCRIPTION: This work consists of the cleaning of existing steel locations where plating will be added in preparation for rehabilitation of the structure.

CONSTRUCTION: All existing steel faying (adjoining) surfaces, where new steel is to be installed, shall be cleaned to a level SSPC-SP15 requiring a Commercial Grade Power Cleaning Tool. The Contractor shall maintain and operate all vacuum shroud power tools to collect generated debris. All power tools shall be equipped with vacuum shrouds and tipped with HEPA-grade air filters at their air exhaust.

Unless noted otherwise on the plans, all existing steel within 12” of the working limits of each retrofit location shall be cleaned and capable of achieving a Class B Slip Resistant Coefficient.

MEASUREMENT AND PAYMENT: No direct payment will be made for this item. It will be considered subsidiary to the specific pay item repairs listed in the “Bridge Structural Steel Repairs” Special Provision and pay item repairs listed in “Structural Steel in Plate Girder Spans (A709, GR. 36)”, “Structural Steel in Plate Girder Spans (A709, GR. 50W)”, “Structural Steel in Truss Spans (A709, GR. 36)”, and “Structural Steel in Truss Spans (A709. GR. 50W)”.

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CRACK ARREST HOLES FOR BRIDGE STRUCTURAL STEEL

DESCRIPTION: The purpose of this special provision is to provide specifications for crack remediation at locations shown in the plans or as directed by the Engineer to slow or stop crack growth in the specified structural steel member. The objective of the drilled crack arrest hole, inspection monitoring, and required test procedures is to reduce stress concentrations at the tip of steel cracks for bridge preservation and reduced maintenance.

METHOD: The Contractor shall be required to follow the procedures of ASTM E165 “Standard Practice for Liquid Penetrant Testing for General Industry” and ASTM E1417 “Standard Practice for Liquid Penetrant Testing” which are non-destructive tests to indicate the location and extent of the surface defect. The Contractor shall be required to establish appropriate safety and health practices associated with the test chemicals and procedures for his employees and the Engineer.

Prior to the application of any of the products associated with the chosen test method, the Contractor shall test a small area on a bridge steel member to ensure that the test chemicals are not harmful to the steel components of the bridge. The Contractor shall comply with the essential test steps, such as pre-cleaning of the area, applying the liquid penetrant according to manufacturer’s instructions, following penetration time, removing excess penetrant, applying a developer, and inspecting the crack defect in the steel member. After locating the crack tip, a precise ½ inch diameter reference hole is to be drilled located about 1/16 inch from the crack tip to the edge of the ½ inch hole.

The ½ inch diameter reference hole is critical to placing the center of the 1 inch diameter hole exactly at the crack’s tip and for prevention of new stress points with additional drilling. The Contractor shall be responsible for the type of drill bits required to remove the crack tip, small visible cracks around the crack tip, and enlarging the pilot hole to a 1 inch diameter hole. All 1 inch diameter hole edges and the inside of the hole should be ground smooth using 80-100 grit sandpaper or finer or a method chosen by the Contractor. The bare surfaces around the hole are to be primed and painted according to the “Cleaning and Painting Existing Structural Steel” Special Provision in this project.

METHOD OF MEASUREMENT: Crack Arrest Holes, properly tested and placed as shown on the plans and/or approved by the Engineer, will be paid for by the Each.

BASIS OF PAYMENT: Work completed, accepted and measured as provided above will be paid for at the contract unit price bid per Each and will be full compensation for all labor, equipment, tools, test materials, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Crack Arrest Hole	Each

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NAVIGATION LIGHTING SYSTEM

DESCRIPTION: This item shall consist of the furnishing of material, equipment and fixtures, and the installation of a navigation lighting system on Bridge No. 02899 over the Mississippi River from Helena-West Helena to Lula, Mississippi in accordance with the Contract Documents, this Special Provision, and the details in the Design Documents. The navigation lighting system shall be in accordance with Title 33, Section 118, Code of Federal Regulations.

PLACEMENT: The center of the navigation channel span shall be marked by a range of two green lights. Each green light shall show through a horizontal arc of 360º and be mounted securely just below the outermost edge of the bridge span structure in line with the axis of the channel so as to be clearly visible to an approaching vessel.

The center of the navigation channel span shall be marked with green, high-intensity grade, retroreflective square panels measuring two feet per side. The retro-reflective panels shall be placed near the top of the green navigation lights so as to effectively reflect the searchlight of any approaching vessel but not positioned so as to obscure the red navigation lights.

Each margin of the channel shall each be marked with two red lights, one on the upstream side and one on the downstream side of the bridge span structure. Each red light shall show through a horizontal arc of 180º and be securely mounted just below the outermost edge of the bridge to show 90º on either side of a line parallel to the axis of the channel, clearly visible to an approaching vessel.

Each margin of the returning channel, one on the upstream side and one on the downstream side, shall be marked with red, high-intensity grade, retro-reflective square panels measuring two feet per side. The retro-reflective panels shall be placed near the top of the red navigation lights so as to effectively reflect the searchlight of any approaching vessels but not positioned so as to obscure the red navigation lights.

MATERIALS: Cable for the bridge navigation lighting system shall be copper, 600 volt with Type XHHW insulation, and sized as shown on the plans. Junction boxes shall be sized as shown on the plans, and shall have a NEMA 4X rating.

Furnish, install and connect to the service point assembly as shown on the Design Documents. Refer to the Service Point Assembly SP.

Furnish and install within the lighting pedestal shown on the Design Documents, one approved, 120/240 volt, lighting contactor with photoelectric control, with fail-safe and adjustable sensitivity features. Set the photoelectric control so the navigation lights are displayed from sunset to sunrise each night of the year and at other times when the visibility is less than one mile.

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Furnish and install on the outside of the structure as shown on the Design Documents, six marine signal navigation light system – two for marking the center of the navigation span at the centerline of the navigation span and four for marking horizontal clearance lines for navigation. All lights must have sufficient candlepower to be visible against the background lighting at a distance of at least 2,000 yards 90 percent of the nights of the year.

The navigation lighting system shall consist of the following components for each center channel and channel margin light fixture: marine lantern equipped with LED lamp, one lens, slide mechanism with trolley, hinged pad-lockable security cover, service wire rope, straps, mounting bracket, hanger housing and stem, signal housing and all other components necessary to provide a complete system of which the lantern can be slid for service.
The lantern housing shall be cast aluminum or molded acrylic, mounted on an adjustable bracket and designed for a LED lamp. Lantern shall provide space to allow the use of an AC/DC and/or 120/240 line converter if necessary. Lantern housing shall have an IEC classification IP68. All cable entrances shall be watertight.
The lens shall be permanent, rigid, glass or clear acrylic, standard marine fresnel-type, 180^{o} or 360^{o} section, measuring 150 mm diameter, approximately. The lens used in the system at the centerline of span shall be 360^{o} clear acrylic with the LED producing the green light at a wavelength of approximately 510 nanometers. The lenses used in the two systems for marking horizontal clearance shall be 180^{o} clear acrylic with the LED producing the red light at a wavelength of approximately 650 nanometers.
Provide 6 LED lamps and install inside the six marine lantern fixtures. Provide 2 spare LED lamps and deliver them to the District RE Office @ 533 No. Sebastian, West Helena.
All cable entrances shall be watertight. The entire assembly shall be constructed to prevent insect entry.
The mounting bracket, hanger housing and signal housing shall be heavy castings of silicon bronze. The bronze housing shall be unfinished.
The hanger stem shall be 1½” stainless steel pipe.
The 1/8” flat steel plate for the high intensity retroreflective material shall be cleaned by either the centrifugal wheel or the air blast method. Blast cleaning shall produce a surface preparation conforming to SSPC-SP10, Near-White Blast Cleaning, with a surface profile as recommended by the manufacturer of the retroreflective material. The retroreflective material shall be attached in the fabricator’s shop after metallic shot and grit or sand is removed from the surface and before

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rust forms. The steel surface shall be thoroughly free of dirt, grease, oil, and other foreign substances.

The Contractor shall furnish and install all switch boxes, conduits, cable, junction boxes, splice fittings, fasteners, hardware grounds, mounting devices, fixtures, lamps and accessories necessary for the complete lighting system, tested and connected for operation.

The lighting installation, when completed, shall comply with the applicable provisions of the United States Coast Guard (USCG), National Fire Protection Association (NFPA) “National Electrical Code” (NFPA 70), Institute of Electrical and Electronics Engineers (IEEE) “National Electric Safety Code”, American National Standards Institute (ANSI) standards, and the National Electric Manufacturers Association (NEMA) standards, and shall conform to all local and State laws or ordinances governing such installations and to the special requirements herein set forth. Should the Design Documents and detail specifications be in conflict with these requirements, through error or omission, the Contractor shall submit alternate products and materials to the Engineer of Record and the Department in accordance with the Construction Quality Management Plan (CQMP). Upon approval of the alternate products and materials, the Contractor shall make the necessary corrections in the installation.

All metal parts and fittings shall be hot-dipped galvanized or shall be of an approved corrosion resisting material such as copper, brass or bronze, stainless steel or of a material treated in an approved manner to render it adequately resistant to corrosion.

All material, equipment and fixtures shall be the best standard product of a manufacturer regularly engaged in the production of this type of equipment and shall be of the manufacturer’s latest approved design. All materials shall comply with the “Buy America – Construction Materials” Special Provision.

The Contractor shall submit catalog numbers, certified shop drawings and descriptions of fixtures and equipment proposed and shall secure approval of all products prior to beginning the installation.

Suppliers of retroreflective materials as specified above and shown on the plans are as follows:

3M Company
Traffic Control Products Div.
3M Center
St. Paul, MN 55101

American Decal and Mfg., Co.
4100 W. Fullerton Ave.
Chicago, IL 60639

Fasson. Div. of Avery Prod. Corp.

Morgan Adhesives Co.

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250 Chester St.
Painesville, OH 44077

4560 Darrow Road
Stow, OH 44224

CONSTRUCTION METHODS: The installation, as a whole, shall be carried out in conformity with the requirements herein stated and implied, and upon completion of the work shall present a neat and workmanlike finished appearance. Safe construction and operating practices meeting the requirements of the NFPA 70 “National Electrical Code” and the IEEE “National Electric Safety Code” shall be maintained.

The Contractor shall provide for the installation of conduits, cables, and equipment in proper sequence with the construction of the bridge structure.

Cables, where practicable, shall be installed in continuous lengths without splices, from terminal to terminal. At the terminals, the cable shall be spliced to the equipment leads in strict conformity with the cable manufacturer’s instructions. Care shall be taken to insure watertight joints and connections.

When necessary, splices of conductors shall be made with 600 volt insulated compression type fittings similar to those described by the highway illumination SP Electrical Conductors-in-Conduit. Splices shall be made in accessible junction boxes, not in conduit.

TESTS: The Contractor shall furnish all equipment and appliances necessary to test the completed system in accordance with ANSI/NETA ATS “Standard for Acceptance Testing Specifications for Electrical Power Equipment and Systems”, current edition. All electric energy furnished by the power company shall be paid for by the Contractor. The Contractor shall test and demonstrate to the satisfaction of the Department that all lighting circuits are continuous and free from short circuits and unspecified grounds; that all circuits are properly connected in accordance with accepted practice; that the resistance to ground of non-grounded section of multiple circuits is not less than 100 megohms (run test for one minute); and that all circuits are operable, which demonstration shall include functioning not less than ten times and continuously operating circuit for not less than four hours.

All installations shall be fully tested in normal operation for not less than 14 days as completed systems prior to acceptance. Failure of system equipment or controls shall be cause to stop the test. Deficient equipment shall be replaced and new 14 day test started.

CONTRACTOR’S RESPONSIBILITY: The Contractor shall be responsible for the proper performance, in part and as a whole, of the structural, mechanical and electrical equipment provided for the lighting circuits and related parts for the period between the date of installation

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and the date of Final Acceptance; to the extent that the Contractor shall correct at his own expense any difficulties with the operation which may arise during this period as a result of defects in material, equipment, manufacture and installation. Responsibility for such correction shall include the repair, readjustment and replacement not only of the defective parts but of other parts which may be damaged thereby. The Department reserves the right to itself correct any such defects and the Contractor shall pay the cost thereof.

TEMPORARY NAVIGATION LIGHTING DURING CONSTRUCTION PERIOD: For the protection of navigation during construction of the bridge, the Contractor shall provide required lighting for falsework, and any other temporary obstructions which he may install for this construction operation. Temporary lights must be of the same color and characteristic and have a range of visibility equal to that prescribed for permanent lights. Four copies of the location of all construction facilities shall be furnished to the District Commander, Eighth Coast Guard District, 1222 Spruce Street, St. Louis, Missouri 63103, at least 60 days in advance of beginning of this work. One marked copy will be returned indicating required temporary lighting.

METHOD OF MEASUREMENT: Work completed and accepted under this item shall be measured as lump sum. The lump sum item shall consist of all cabinets, light fixtures, conduit, conductors, boxes, foundations, and all other hardware necessary for installing the navigation lighting system.

BASIS OF PAYMENT: Work completed, accepted, and measured as provided above shall be inclusive of the entire work described in this SP, including but not limited to the furnishing and installing the navigation lighting fixtures; furnishing and installing conduit, pull boxes and junction boxes, and conductors, including splices and terminations; excavation, backfill, compaction, and removal of surplus material for underground conduit; and for all materials, labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Navigation Lighting System	Lump Sum

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AIRWAY OBSTRUCTION LIGHTING SYSTEM

DESCRIPTION: This item shall consist of the furnishing of all materials that shall comply with the "Buy America – Construction Materials" Special Provision, equipment, fixtures, and the installation of a complete and operational Obstruction Lighting System on Bridge No. 02899 over the Mississippi River. The work shall be performed in accordance with the Contract Documents, this Special Provision, and the details in the Design Documents. The obstruction lighting system shall be installed in strict accordance with the requirements of the Federal Aviation Administration (FAA) to ensure aviation safety.

The primary governing document for obstruction marking and lighting is FAA Advisory Circular (AC) 70/7460-1, as amended. The Contractor is required to adhere to the standards set forth in the most current version of this circular. All construction or alterations that may affect navigable airspace require the sponsor to notify the FAA by completing the Notice of Proposed Construction or Alteration form (FAA Form 7460-1). The Contractor shall provide documentation to the Engineer that this notification has been submitted as required.

PLACEMENT: The specific type, number, and arrangement of obstruction lights shall be as detailed in the project plans and as required by the FAA's determination for the specific structure. A total of 4 (four) new obstruction light fixtures matching the existing obstruction light locations, on alternates sides of the bridge, shall be installed at each high point of the truss structure (Piers 11-14) according to the plans and FAA requirements.

The placement of lights shall ensure that at least one light is visible to a pilot from any angle of approach. Lights shall be installed at or near the top of the structure and at intermediate levels as specified in the FAA determination and FAA AC 70/7460-1.

MATERIALS: Cable for the bridge navigation lighting system shall be copper, 600 volt with Type XHHW insulation, and sized as shown on the plans. Junction boxes shall be sized as shown on the plans and shall have a NEMA 4X rating.

Install and connect to the existing service point as shown in the Design Documents.

Furnish and install on the outside of the structure as shown in the Design Documents the Obstruction Lighting System. Obstruction light fixtures shall be FAA-approved and listed on the current edition of the FAA Advisory Circular 150/5345-53, Airport Lighting Equipment Certification Program. The specific models (e.g., L-810) will be designated on the plans based on the FAA's requirements for the structure. Install four Low-Intensity Lights (L-810) fixtures. These shall be steady-burning red lights.

The system shall include a lighting controller with a photoelectric control to ensure lights operate from sunset to sunrise and during periods of reduced visibility. The system must also incorporate a monitoring system that provides a positive indication of the operational status of the lights. The

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Federal Communications Commission (FCC) governs the monitoring requirements for obstruction lights. Any failure of a top or flashing obstruction light lasting more than 30 minutes must be reported as a Notice to Airmen (NOTAM).

All mounting brackets, conduits, fasteners, and other hardware shall be made of corrosion-resistant materials such as hot-dip galvanized steel, stainless steel, or aluminum.

The Contractor shall provide two spare lamps or LED modules for each type of light fixture installed and deliver them to the Engineer at the ARDOT Resident Engineer's Office #11 @ 533 No. Sebastian, West Helena, AR 72390.

SUBMITTALS: The Contractor shall submit certified shop drawings, catalog cuts, and descriptions of all proposed fixtures, equipment, and materials for approval prior to the commencement of installation. This includes the obstruction light fixtures, controller, monitoring system, cables, and all associated hardware.

CONSTRUCTION METHODS: The installation shall be performed in a neat and workmanlike manner. All work shall comply with the National Electrical Code (NFPA 70), the National Electrical Safety Code (IEEE C2), and any other applicable state and local codes.

The Contractor is responsible for the timely installation of all conduits, cables, and equipment in coordination with the overall construction of the structure. Cables shall be installed in continuous lengths where possible, and any necessary splices shall be made in accessible, weatherproof junction boxes.

TESTING: The Contractor shall furnish all necessary equipment and personnel to conduct a thorough test of the completed obstruction lighting system. The testing shall demonstrate to the satisfaction of the Engineer that all circuits are free from short circuits and improper grounds, and that the system operates as intended.

The resistance to ground of non-grounded portions of the circuits shall be no less than 100 megohms. The entire system shall be operated continuously for a period of not less than 14 days prior to acceptance. Any failure of equipment or controls during this period shall require the replacement of the defective component, and the 14-day test shall be restarted.

CONTRACTOR'S RESPONSIBILITY: The Contractor shall be responsible for the complete and proper functioning of the entire obstruction lighting system until the date of Final Acceptance of Job 110812. This responsibility includes correcting any operational issues arising from defects in materials, workmanship, or installation at no additional cost to the Department. This includes the repair or replacement of not only the defective parts; but also, any other components damaged as a result of the failure.

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The Contractor is responsible for filing the FAA Form 7460-1, Notice of Proposed Construction or Alteration, at least 45 days before the start of construction.

The Contractor shall install all components of the Obstruction Lighting System in accordance with FAA requirements and the manufacturer's warranty requirements. The Contractor shall request two original copies---one for the Arkansas and one for Mississippi. All warranty documents shall be submitted to the Engineer.

TEMPORARY OBSTRUCTION LIGHTING: During construction, the Contractor shall be responsible for providing and maintaining any temporary obstruction lighting required by the FAA for construction equipment, cranes, or the partially completed structure itself. Once a structure under construction reaches a height of 200 feet, it must be marked with temporary lighting. This temporary lighting shall be in place until the permanent system is operational.

METHOD OF MEASUREMENT: The Obstruction Lighting System will be measured as a single lump sum item, complete in place and accepted.

BASIS OF PAYMENT: The Lump Sum price paid for the Obstruction Lighting System shall include full compensation for furnishing all labor, materials, tools, and equipment required to install, test, and make operational the complete obstruction lighting system as described herein and as shown on the plans. This includes, but is not limited to, all light fixtures, controllers, monitoring systems, conduits, cables, junction boxes, mounting hardware, any necessary excavation and backfill, and warranty submittals.

Payment will be made under:

Pay Item	**Pay Unit**
Obstruction Lighting System	Lump Sum

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PREFORMED SILICONE JOINT SEAL

DESCRIPTION: This item shall consist of furnishing and installing preformed silicone joint seal in accordance with the details shown on the plans and these specifications.

MATERIALS: (a) Preformed Silicone Joint Seal. Joint seal shall consist of silicone, be performed by extrusion, and shall meet or exceed the following physical requirements:

Properties	Test Method	Typical Values
Durometer (Shore A)	ASTM D 2240	55 ± 5 at 73° F ± 4° F
Tensile (psi)	ASTM D 412	1,000 psi min. (6.89 MPa)
Elongation (%)	ASTM D 412	400 % min.
Tear (die B ppi)	ASTM D 624	100 ppi min. (17 kN/m)
Compression Set	ASTM D 395	30% max. at 212º F, 70 hrs.
Heat Aged Properties	ASTM D 573	70 hrs. @ 212º F
Durometer		5 max. points loss
Tensile Strength, max, % loss		10 max. % loss
Elongation, max, % loss		10 max. % loss

(b) Preformed Silicone Locking Adhesive. Locking adhesive shall consist of a silicone-based adhesive that cures quickly. It shall adhere to concrete, elastomeric concrete, polymer concrete, steel, and the joint seal and shall meet the following physical requirements:

Properties	Test Method	Typical Values
Tensile Strength	ASTM D 412	200 psi min. (1.38 MPa)
Elongation	ASTM D 412	450%
Tack Free Time	ASTM C 679	20 min. max.
Cure Time ¼" Bead	ASTM C 679	24 hrs. max.
Resistance to U.V.	ASTM C 793	No Cracking, & Ozone chalking or Degradation

(c) Primer. All portions of the joint armor not completely embedded in concrete shall be painted with an organic zinc-rich primer with a minimum 3 mils dry film thickness. The primer shall be applied in the shop and the color shall be gray. No finish system shall be applied.

(d) Acceptance and Sampling. The Contractor shall submit the manufacturer's name, seal dimensions and details, and factory-made splices to the Engineer for approval prior to fabrication. Joint seal and locking adhesive shall be furnished by the same Manufacturer. The joint seal and locking adhesive shall be accepted on the basis of the Manufacturer's certification in accordance with these specifications and acceptable performance on the project. The

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PREFORMED SILICONE JOINT SEAL

Manufacturer shall provide the Engineer with a certification for each project stating that all materials shipped will be in compliance with these specifications. Samples of the joint seal and locking adhesive may be obtained by the Materials Division for verification testing and evaluation.

INSTALLATION: Prior to seal installation, the Contractor shall furnish to the Engineer a letter from the Manufacturer identifying the name and address of the Manufacturer's Representative. All work is to be performed by installers under the supervision of the Manufacturer's Representative or experienced installers that are certified by the Manufacturer's Representative.

The minimum temperature for installation of the joint seal is 40º F and rising ambient air temperature. The joint opening shall be measured and adjusted as necessary to meet plan dimensions at the applicable temperature.

The joint armor shall be completely dry and the opening cleaned of sand and debris prior to installation of the joint seal. Cleaning of the joint armor and silicone seal, and installation of the joint seal shall be completed in the same day in accordance with Manufacturer's recommendations. The joint seal shall not be installed immediately after precipitation or if precipitation is forecast for the day. Traffic shall not be allowed to pass over cleaned joint surfaces.

The joint seal shall be inserted into the joint in an inverted "V" shape with the top of the seal set between ½" and 1" below the top of the road surface. Traffic shall not be allowed over a newly installed joint seal for a minimum of 60 minutes or longer when directed by the Manufacturer's Representative.

The joint seal shall be continuous where possible. Vertical curbs, directional changes and field splices shall be cut and mitered in the field using the locking adhesive as a bonding agent unless prefabricated by the manufacturer.

Storage and handling of materials shall be according to the Manufacturer's recommendations.

Prior to acceptance of the work, the Contractor shall furnish to the Engineer a letter from the Manufacturer's Representative certifying that the joint seal has been installed according to the Manufacturer's recommendations.

METHOD OF MEASUREMENT: Preformed Silicone Joint will be measured by the linear foot (meter) in place. The measurement will be made along the top surface of the joint seal from end to end.

The quantities shown on the plans will be considered as the final quantities and no further measurements will be made unless, in the opinion of the Engineer or upon evidence furnished by the Contractor, substantial variations exist between quantities shown on the plans and actual quantities due to changes in alignment or dimensions or to apparent errors.

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PREFORMED SILICONE JOINT SEAL

BASIS OF PAYMENT: Work completed and accepted and measured as provided above will be paid for at the unit price bid per linear foot (meter) for Preformed Silicone Joint, which price shall be full compensation for cleaning the joint; for furnishing and installing all materials; for all certifications; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Preformed Silicone Joint	Lin. Ft. (Meter)

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CONTRACTOR CERTIFICATION

PRIME CONTRACTOR: The Hwy. 49 Bridge No. 02899 over the Mississippi River at Helena - West Helena contains Non-redundant Steel Tension Members (NSTMs, formerly Fracture Critical Members) such as floor beams, pin & hanger assemblies, and truss members (which is not an all-inclusive list) that will require steel repairs and replacement involving precision, careful analysis, and construction judgment/experience. The Prime Contractor shall provide documentation that their company or subcontractors have successfully worked on a structure/s that contains NSTMs previously and have experience with the required quality control, repairs, and shoring systems. The potential Contractor will be required to provide the specified documentation upon request by ARDOT after the project bids have been reviewed and before the contract is awarded.

WELDING SUBCONTRACTORS AND STRUCTURAL STEEL FABRICATORS: Refer to special provisions in the contract, SS 807-2, and Section 807 “Steel Structures”, and other applicable Sections of the Standard Specifications for Highway Construction, 2014 Edition for project requirements. Required certifications and/or licenses shall be in active status before bidding and remain in effect for the duration of the project.

No direct payment will be made for the requirements of this special provision. They will be considered subsidiary to the various pay items in the contract.

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CONTAINMENT SYSTEM

The Contractor will be required to submit details of their method of tarping enclosure for the Class of Containment. The paint tarping enclosure should be certified by an Arkansas Registered Professional Engineer and meet the requirements of the “Cleaning and Painting of Existing Structural Steel” Special Provision. The Contractor shall also comply with the requirements of Section 820 “Cleaning and Painting of Existing Structural Steel” of the ARDOT Standard Specifications for Highway Construction, 2014 Edition. The details submitted shall be organized, clear and concise, on 8-1/2” x 11” or 11” x 17” paper. The Contractor will present these required details four weeks prior to the anticipated start date for paint tarping installation to the Engineer and receive approval documentation before work can commence.

The SSPC class containment required is as follows:

BRIDGE NUMBER	CLASS OF CONTAINMENT
02899	3

No direct payment will be made for this item. It is considered subsidiary to the item of “Cleaning and Painting Existing Structural Steel (Type II)”.

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SPECIAL SAFETY REQUIREMENTS FOR BRIDGES

DESCRIPTION: This specification covers special safety requirements during the rehabilitation and painting of Bridge No. 02899 over the Mississippi River between Helena-West Helena, Arkansas and Lula, Mississippi. The requirements of this special provision are intended for the safety of both the traveling public, navigation channels traffic, truck traffic under the bridge on the Arkansas side, and the workers. Any modifications to the requirements of this special provision shall be submitted in writing by the Contractor to the Engineer for approval.

REHABILITATION CONSTRUCTION AND PAINTING:

(a) Removal and replacement of structural steel as indicated by the Engineer; placement and removal of safety platforms & shoring systems; tarping & painting; installing, relocating & removal of maintenance of traffic concrete barrier; and other activities that shall require that all traffic be stopped for short intervals of time are not to exceed 15 minutes of traffic disruption. This 15-minute time window is provided in order that the above activities can progress without endangering the traveling public crossing the bridge. Between closure periods the roadway must be opened for sufficient time to allow re-establishment of the normal flow of traffic. Time windows are subject to adjustment by the Engineer when necessary to accommodate special events, situations, or agency permits. The 15-minute closures by the Contractor shall be scheduled when traffic volumes are low to minimize the impact to traffic and the farming community. Refer to the “Maintenance of Traffic” Special Provision.

(b) The Contractor shall notify the Engineer no less than five days before erection of structural steel or any other activities that will temporarily or permanently reduce the vertical clearance over the Mississippi River navigation channels or a vehicle roadway under the bridge. Notification is required for each subsequent activity that will reduce the previous existing clearance. A minimum vertical clearance specified by the Engineer, the U.S. Army Corp of Engineers or U.S. Coast Guard must be maintained over the navigation channels and roadways during all construction activities.

(c) The Engineer shall notify local law enforcement and emergency agencies of temporary 15-minute closures or other activities that will affect normal flow of traffic on the Hwy. 49 Bridge no less than three days before planned activities or deliveries occur. Refer to the “Coordination of Work” Special Provision for contact information.

(d) Precast barriers and portable temporary signals or flaggers shall be placed as shown on the roadway plans before work is performed. Construction activities shall be accomplished without construction equipment obstructing traffic in the open lane on the bridge unless the lane closure is in an approved 15-minute closure.

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SPECIAL SAFETY REQUIREMENTS FOR BRIDGES

(e) During the erection of the steel repairs, sufficient falsework shall be provided for support of the various steel replacements. Highway traffic or navigation channel traffic shall not be allowed to travel under a span while a piece of structural steel on that span is being removed or moved into position and before the steel replacement is securely supported until the safety platform/s are in place. Refer to the “Shoring” and the “Structural Steel Shoring” Special Provisions.

(f) For removal and replacement of structural steel or related components, a safety platform shall be constructed directly under the steel replacements for the spans over the highway or river to protect traffic from falling objects. Details for the safety platform construction - complete with dimensions, design calculations, and kind and condition of materials - must be submitted to the Engineer for informational and record purposes prior to construction. These details must be prepared and/or approved by a Professional Engineer. The Contractor shall construct the platform in accordance with the details submitted to the Engineer and the results obtained using the platform design are the Contractor’s responsibility. Traffic shall not be allowed to travel under a portion of platform being installed or removed.

(g) Refer to the “Cleaning and Painting of Existing Structural Steel” Special Provision for the truss vertical clearance requirement over moving traffic crossing the bridge.

PAYMENT: No direct payment will be made for this work. It shall be considered subsidiary to other items in the contract.

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POLYMER OVERLAY

DESCRIPTION: This item shall consist of surface preparation and application of two courses of a two-component polymer overlay system to bridge decks. The polymer overlay system provided shall be specifically designed for use on concrete bridge decks and the minimum total thickness of the overlay system shall be ¼". The maximum total thickness shall be as recommended by the Manufacturer.

GENERAL: A minimum of 10 business days prior to overlay application, the Contractor shall submit Manufacturer's specifications, product data, and certified test report(s) to the Engineer for approval. Information provided shall include all installation instructions and quality control procedures required to assure an acceptable finished overlay. The certified test report(s) shall be from an independent testing laboratory, shall be for testing made within the 36 months prior to the date of contract advertisement for bid, and shall show that the Manufacturer's specifications are in compliance with the material requirements of this special provision. The Engineer may request samples of the polymer and aggregate for the purpose of acceptance testing by the Department.

In addition to the above submittals, the Contractor shall submit a history referencing past projects where similar work was performed. The work history shall document the successful application of a similar overlay system on either five (5) bridge locations or more than 5,000 square yards of bridge deck by the Contractor or Subcontractor performing the application within the last five (5) years. A brief description of each project and contact information for the facility owner shall be provided. The work history requirement may be waived by the Engineer if the requirements described below in "Contractor with No Work History" are met.

MATERIALS: (a) Polymer Resin. The polymer resin base and hardener shall be composed of a two-component, 100% solids and 100% reactive, thermosetting compound with the following properties:

Property	Requirements	Test Method
Gel Time [A]	15 - 45 minutes @ 73° to 75° F	ASTM C881
Viscosity [A]	700 – 2500 cps	ASTM C881 @ 23 ± 1°C (73 ± 2°F)
Shore D Hardness [B]	60-75	ASTM D2240
Absorption [B]	1% maximum at 24 hr	ASTM D570
Tensile Elongation [B]	30% - 70% @ 7 days	ASTM D638
Tensile Strength [B]	>2000 psi @ 7 days	ASTM D638
Chloride Permeability [B]	<100 coulombs @ 28 days	AASHTO T 277

[A] Uncured, mixed polymer binder [B] Cured, mixed polymer

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POLYMER OVERLAY

(b) Aggregates. Furnish natural or synthetic aggregates as recommended by the polymer Manufacturer that have a proven record of performance in applications of this type. Furnish aggregates that are non-polishing, clean and free of surface moisture, angular in shape; free from silt, clay, asphalt, or other organic materials; and meet the following properties:

Property	Requirement	Test Method
Moisture Content [A]	≤ 0.5 %	AASHTO T 255
Hardness	≥ 6.5 on Mohs scratch hardness	ASTM Special Methods for Hardness
Absorption	≤ 1%	AASHTO T 84

[A] Sampled and tested by Contractor at the time of placement.

Sieve Size	% Passing by Weight
No. 4	100
No. 8	30 – 75
No. 16	0 – 5
No. 30	0 – 1

(c) Overlay System. The required properties of the overlay system are listed in the table below:

Property	Requirement [A]	Test Method
Minimum Compressive Strength	1,000 psi @ 3 hrs 5,000 psi @ 24 hrs	ASTM C579 Method B, Modified [B]
Thermal Compatibility	No Delaminations	ASTM C884
Minimum Pull-off Strength	250 psi @ 24 hrs	ASTM C1583

[A] Based on samples cured or aged and tested at 75°F

[B] Plastic inserts that will provide 2-inch by 2-inch cubes shall be placed in the oversized

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brass molds.

CONSTRUCTION: (a) General: The Contractor shall consult with the Manufacturer's representative prior to construction to establish procedures for maintaining optimum working conditions and coordination of work. The Contractor shall furnish the Engineer a copy of the recommended procedures and apply the overlay system in accordance with Manufacturer's instructions.
The Contractor shall plan and operate in such manner as to protect the traveling public from injury or damage during surface preparation or overlay application. Drains, expansion joints, joint seals, access hatches, or other appurtenances shall be protected from damage during surface preparation and overlay application, and from materials adhering to or lodging in these components. All construction joints shall be taped or formed to provide a clean straight edge.

Materials shall be stored and handled in accordance with Manufacturer's recommendations. All aggregates shall be stored in a dry environment and protected from contaminants on the job site.

(1) Contractor with Work History: A Manufacturer's technical representative experienced with the overlay system installation shall be present during the first overlay system application to ensure that surface preparation and overlay placement procedures are in accordance with Manufacturer's recommendations. The same materials and application thickness, equipment, procedures, and curing period shall be used by the Contractor on any subsequent overlays unless otherwise directed by the Manufacturer's representative or the Engineer.

(2) Contractor with No Work History: A Manufacturer's technical representative experienced with the overlay system installation shall be present during all overlay system applications on the first five (5) bridge decks or 5,000 square yards of bridge deck, whichever comes first, to ensure that surface preparation and overlay placement procedures are in accordance with Manufacturer's recommendations. After these successful applications, the same materials and application thickness, equipment, procedures, and curing period shall be used by the Contractor on any subsequent overlays unless otherwise directed by the Manufacturer's representative or the Engineer.

(b) Deck Preparation: (1) Overlay Removal. The Contractor shall remove any existing asphaltic overlays on bridge decks, approach slabs and approach gutters. Any existing overlay surface treatments shall be removed from the bridge deck. Work performed to remove asphaltic overlays or overlay surface treatments shall be considered subsidiary to the pay item "Polymer Overlay".

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(2) Bridge Deck Repair: The Contractor shall remove all asphaltic patches and unsound or disintegrated areas of the concrete deck as directed by the Engineer. Work performed to repair the concrete deck will be paid for in accordance with Special Provision “Bridge Deck Repair for Polymer Overlays”. Products used for the bridge deck repair shall be compatible with the polymer overlay system. The overlay application shall not be made until the deck repair has been in place the minimum time recommended by the polymer Manufacturer.

(3) Surface Preparation: Surface preparation shall not be performed more than 24 hours prior to the application of the overlay system.

The Contractor shall determine an acceptable shotblasting machine operation (size of shot, flow of shot, forward speed, and/or number of passes) that provides a surface profile meeting CSP 5 according to the International Concrete Repair Institute Technical Guideline No. 03732. If the Engineer requires additional verification of the surface preparation, the Contractor shall test the tensile bond strength according to ASTM C1583. The surface preparation will be considered acceptable if the tensile bond strength is greater than or equal to 250 psi or the failure area at a depth of ¼ inches or more is greater than 50% of the test area. Continue adjustment of the shotblasting machine and necessary testing until the surface is acceptable to the Engineer or a passing test result is obtained.

The entire surface shall be prepared using the final accepted adjustments to the shotblasting machine as determined above. Any areas inaccessible by the shotblasting equipment shall be thoroughly blast cleaned with hand-held equipment. Vertical concrete surfaces adjacent to and a minimum of 2" above the concrete deck shall be prepared according to SSPC-SP13 by using sand blasting, wire wheels, or other approved method.

Immediately prior to overlay placement, use oil-free compressed air to clean all dust, debris, and concrete fines from the prepared surfaces including the vertical surfaces. Any grease, oil, or other foreign matter that rests on or has absorbed into the concrete shall be removed completely. Lightly sandblast the exposed surfaces if any prepared surfaces (including the first course of the polymer overlay) are exposed to rain or dew.

A transitional area adjacent to transverse expansion joints and bridge ends shall be formed using a shotblasting machine or other approved method. The concrete shall be removed to the total depth of the overlay thickness and tapered to the existing surface over a distance of three (3) feet.

The Engineer may consider the use of alternate surface preparation methods in accordance with the overlay system Manufacturer’s recommendations. The Engineer shall approve the final surface profile and surface preparation prior to the Contractor placing the polymer overlay.

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(c) Overlay Application. Perform the handling and mixing of the polymer resin and hardening agent in a safe manner to achieve the desired results in accordance with Manufacturer's instructions. Do not apply the overlay system if any of the following exists:

1. Ambient air temperature is below 50°F;
2. Deck temperature is below 50°F or exceeds 100°F;
3. Deck shows visible moisture after 2 hours when measured in accordance with ASTM D4263;
4. Rain is forecast during the minimum curing periods.
5. Materials component temperatures are below 50°F or above 99°F;
6. The gel time is 10 minutes or less at the predicted high air temperature for the day.

After the deck has been shotblasted or during the overlay curing period, only equipment that is necessary for surface preparation and overlay application will be allowed on the deck. Overlay placement shall begin as soon as possible after completion of the surface preparation.

The polymer overlay system shall consist of a two-course application of polymer and aggregate. Each of the two courses shall consist of a layer of polymer covered with a layer of aggregate in sufficient quantity to completely cover the polymer. Using equipment designed for this purpose, apply the polymer and aggregate in two separate courses in accordance with Manufacturer's recommendations, but not less than the following rate of application:

Course	Minimum Polymer Rate [A] (GAL/100 SF)	Aggregate [B] (LBS/SY)
1	2.5	10+
2	5.0	14+

[A] A grooved deck may require more epoxy polymer.
[B] Application of aggregate shall be of sufficient quantity to completely cover the polymer.

Machine application equipment shall feature positive displacement volumetric metering and be capable of storing and mixing the polymer resins at the proper mix ratio. The Contractor may disperse the aggregate using a standard chip spreader or similar machine. Hand application equipment shall consist of calibrated containers and a paddle-type mixer for mixing the polymer resins, squeegees, notched rakes, or rollers for distribution of the polymer, and brooms, spreaders, or other equipment for the distribution of the aggregate. Either application method is acceptable provided the Contractor demonstrates that they can maintain proper mix ratios,

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adequate mixing and distribution of the resins, and consistent, uniform coverage of aggregate. The Contractor may be required to change methods or equipment if unsatisfactory results are being obtained.

After completion of each course, cure the overlay in accordance with Manufacturer's recommendations, but not less than the following minimum cure times:

	Average temperature of deck, polymer and aggregate components in °F				
Course	**50-69**	**70-74**	**75-79**	**80-84**	**85-99**
1	3 hrs.	2.5 hrs	2 hrs	1.5 hrs.	1 hr.
2	3 hrs.	3 hrs.	3 hrs.	3 hrs.	3 hrs.

After the first course is cured, all loose aggregate shall be removed prior to applying the second course. Each course shall be cured until vacuuming, brooming or other method approved by the Engineer can be performed without dislodging the aggregate or damaging or tearing the surface. Excess aggregate material may be reused if approved by the Engineer and the Manufacturer.

First course applications shall be removed and replaced if insufficient aggregate is applied. A second course applied with insufficient aggregate may be left in place, but will require an additional course before opening to traffic.

At the direction of the Engineer, areas of overlay shall be tested for tensile bond strength in accordance with ASTM C1583, as described above. Successful bond strength test locations will be repaired with polymer overlay material in accordance with the Manufacturer's recommendations. Areas around unsuccessful bond strength tests shall be sounded and checked to determine extents of unbonded or unsatisfactory overlay to be removed and repaired as described below.

The Contractor shall repair all localized areas of unbonded, uncured, or damaged polymer overlay in accordance with Manufacturer's recommendations and at no additional cost to the Department. In the absence of Manufacturer's recommendations, repairs shall be completed by saw cutting in rectangular sections to the top of the existing deck, removing the overlay by scarifying, grinding or other approved methods, and by completing the surface preparation and overlay courses in accordance with this specification. Repair procedures shall be submitted to the Engineer for approval prior to beginning work.

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Apply all courses of the overlay system before opening the area to traffic. Prior to opening to traffic, clean expansion joints, joint seals, and deck drains of all debris as directed by the Engineer. All excess material shall be disposed of by the Contractor in a satisfactory manner.

METHOD OF MEASUREMENT: Polymer Overlay shall be measured by the square yard, complete and in place.

BASIS OF PAYMENT: Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per square yard for Polymer Overlay, which price shall be full compensation for all required submittals and testing; for any removal of asphaltic overlays; for surface preparation; for furnishing materials; for application of polymer overlay courses, curing, and cleanup; for all costs associated with the presence of the Manufacturer's representative during the overlay system applications; for any required repairs; for disposal of excess materials; and for all labor, equipment, tools, and incidentals necessary to complete the work. Bridge Deck Repair for Polymer Overlays will be paid for separately.

Payment will be made under:

Pay Item	**Pay Unit**
Polymer Overlay	Square Yard

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BRIDGE DECK REPAIR FOR POLYMER OVERLAYS

DESCRIPTION: This item shall consist of removing unsound portions of bridge deck concrete, disposing of the removed concrete, and replacing the removed volume with repair concrete in preparation for a polymer overlay meeting the requirements of Job Special Provision "Polymer Overlay". This work shall be completed in accordance with the Standard Specifications, this Special Provision, and as directed by the Engineer.

MATERIALS:

(a) Concrete: Repair concrete shall consist of a rapid-hardening, low shrinkage cement, suitable for structural concrete applications. The cement shall be packaged in 50-pound bags and shall produce a concrete having the following minimum specified characteristics when batched using cement, sand and ¾" crushed gravel or stone at a ratio of 1:1:1 using water necessary to produce a 2" slump.

(1) Minimum Compressive Strength: Compressive strength, as verified by test methods ASTM C39 or AASHTO T 22, shall be as shown below with time being measured from addition of water to mix:

Temperature:	45º F	70º F	95º F
Time:			
2 ½ Hours	1,200 psi.	1,500 psi.	1,200 psi.
1 Day	3,000 psi.	3,000 psi.	3,000 psi.
28 Days	4,000 psi.	4,000 psi.	4,000 psi.

(2) Shrinkage: Maximum allowable shrinkage or expansion for cement shall be 0.20% as determined by AASHTO T 107 and AASHTO T 160.

(3) Certification: The supplier shall submit certification that the material meets these specifications. The Department reserves the right to make independent tests to verify the results.

(4) Working Time under Field Conditions: Initial set from addition of water to mix shall be from 30 to 45 minutes with a minimum of 20 minutes of working time at all temperatures from 45º F to 95º F (Workability must be good.).

(5) Additives: All additives necessary to retard or accelerate the set time to obtain the compressive strength and working time as described above shall be furnished as part of the bid and included with each pallet of cement furnished. Additives shall be in individual packets of an amount necessary for each bag of cement and well-marked as to usage, including instructions for number of packets per bag at a given temperature.

(b) Reinforcing Steel: Replacement reinforcing steel, if required, shall conform to the

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requirements of Section 804.

EQUIPMENT: The equipment used shall be subject to the approval of the Engineer. Removal should be accomplished with power-driven hand tools such as chipping hammers or pneumatic hammers, 45 lb. class maximum. Mechanical chipping tools shall generally not be operated at an angle in excess of 45° measured from the surface of the deck. Surface cleaning equipment shall be capable of properly cleaning the exposed reinforcement and existing concrete surface as defined herein.

The operation or placement of equipment and/or materials on the designated bridge shall be subject to the load restrictions of Subsection 105.14.

PREPARATION OF SURFACE:

(a) Removal: After cold milling or other scarifying of the existing deck surface to remove any asphaltic overlays, the surface shall be sounded and any areas of unsound, delaminated, or otherwise deteriorated concrete to be repaired shall be marked and measured by the Engineer. The area shall be made rectangular with sides parallel or perpendicular to the reinforcing steel. All concrete within the marked area shall be removed with vertical sides to a minimum depth of ¾" below the bottom of the top mat of reinforcing steel or to a greater depth, if necessary, to remove unsound concrete. If the bottom mat of reinforcing is exposed, then the removal and repair shall be made full depth. Care shall be taken to avoid damage to reinforcing steel, steel joint components, drains, or other appurtenances to remain. If damaged, these items shall be repaired or replaced at the Contractor's expense.

The structural integrity and stability of the deck and the structure shall be maintained by limiting the removal to the least area possible and avoiding unnecessary loading near unrepaired removals. Exposed reinforcing steel shall be supported as necessary to protect it from bending by vehicles or equipment loadings.

The Contractor shall provide shielding, as necessary, to ensure containment of all water and dislodged concrete within the removal area in order to protect the traveling public from flying debris and water spray both on and under the work site.

(b) Cleaning: Prior to placement of repair concrete, the surfaces shall be blast cleaned with high-pressure water, sand or other media until all exposed concrete and reinforcing steel are free from laitance, rust, dust, dirt, oil, grease, bituminous material, paint, and all other foreign matter.

(c) Reinforcing: Deteriorated reinforcing steel exhibiting section loss of greater than 25% or reinforcing steel damaged during concrete removal shall be replaced at the direction of the Engineer with new bars of the same or larger size that conform to Section 804. New bars shall be lapped 40 bar diameters to existing bars or dowelled into sound concrete in accordance with

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Subsection 804.06.

Care shall be maintained to prevent coated bars from being damaged. Epoxy coating damaged during surface preparation shall be repaired in accordance with Subsection 804.05.

(d) Formwork: Full depth repairs shall have a bottom surface formed to match the underside of the surrounding deck surface. Existing stay-in-place forms that are sound shall be cleaned and retained, otherwise suitable formwork shall be used and the concrete made to match the surrounding area. Removable formwork shall be removed by the Contractor after the repair has obtained the minimum required compressive strength of 3,000 psi.

PLACING AND FINISHING CONCRETE: The Contractor shall plan operations for a given repair area to be within the working time of the concrete mixture and the maintenance of traffic requirements for the project.

The work area shall be thoroughly wet down with potable water prior to repair placement and be maintained in a “saturated surface dry” condition until placement. The Contractor shall also remove any standing water in depressions with vacuum or oil-free compressed air ahead of the placement.

Repair concrete shall be placed in a continuous operation for a given repair area and the top surface shall match the surrounding concrete. The concrete shall be consolidated by hand or by machine vibration, depending on the depth.

CURING CONCRETE: Immediately after placement, the repair areas shall be cured in accordance with Subsection 802.17. Any curing compounds used shall be compatible with the polymer overlay system. Contractor substitution of lithium silicate curing compounds or other materials for these provisions will not be allowed.

METHOD OF MEASUREMENT: Bridge Deck Repair for Polymer Overlays will be measured by the square foot of the total deck area actually repaired at the direction of the Engineer.

Replacement reinforcing steel, if required, will be measured in accordance with Section 804.

BASIS OF PAYMENT: Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per square foot for Bridge Deck Repair for Polymer Overlays, which price shall be full compensation for the removal and disposal of concrete; for the installation and removal of any required formwork; for surface preparation; for repair of any damaged reinforcing coatings; for furnishing, placing, consolidating, finishing, and curing concrete; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Replacement reinforcing steel, if required, will be paid for in accordance with Section 804.

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Payment will be made under:

Pay Item	**Pay Unit**
Bridge Deck Repair for Polymer Overlays	Square Foot

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SHORING

DESCRIPTION: Work under this item shall consist of the design, construction, and removal of a shoring or bracing system to retain existing and new embankments and to maintain traffic during reconstruction of the West Abutment Backwall for Bridge No. 02899. Shoring may consist of sheet piling, anchored walls, or other bracing systems. The shoring system shall provide sufficient clearance for excavation and construction work and always ensure the safety of the traveling public and workers.

The bridge layout and "Details of West Abutment Backwall Repair" shows the general intent and location of the required shoring. Any other shoring used at the Contractor's option will not be paid for directly but will be considered subsidiary to the various pay items. The Contractor shall notify the Engineer and the U.S. Army Corps of Engineers before any work associated with the west backwall replacement begins. The Contractor shall be responsible for notifying the U.S. Army Corps of Engineers of an anticipated begin work date and providing the required documents for approval. Refer to the plans and notes referencing the backwall replacement. The U.S. Army Corps of Engineers contact information is listed in the "Coordination of Work" Special Provision.

The Contractor shall provide the shoring plans with installation method/s, depth of penetration into the levee, and removal methods to the contact shown. The required submittal for their review and approval shall be submitted a minimum of 30 days prior to any work beginning with the backwall replacement. All correspondence with the U.S. Army Corps of Engineer will be copied to the Engineer, ARDOT Environmental Division – Kayti.ewing@ardot.gov, and Mr. Charles Ellis, ARDOT Bridge Division Head – Charles.ellis@ardot.gov.

WORK TO BE PERFORMED: Prior to construction of the shoring system, the Contractor shall submit the design and details of the system to the Engineer for informational and record purposes. Such submission shall include the design calculations, the kind and condition of materials to be used, working drawings showing all dimensions, and the procedure for installation of the system. The design and details submitted shall be prepared and/or approved by an Arkansas Registered Professional Engineer.

The Contractor shall construct the shoring in accordance with the details submitted to the Engineer for informational purposes. Unless otherwise permitted by the Engineer, all components of the shoring system shall be removed upon completion of their use and shall remain the property of the Contractor.

The Contractor shall be responsible for the adequacy of the shoring during the entire period of construction. The Contractor shall be responsible for any and all damages and/or claims, including injury or death, arising out of the construction and use of shoring.

The Contractor should be aware that the presence of previous shoring may exist in the area of the proposed work due to the 1988 widening project. Any required changes to the shoring system shall be brought to the attention of the Engineer prior to installation.

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The Contractor shall exercise precautions to not do anything to compromise levee integrity. If sheet piling or another shoring system chosen by the Contractor is removed, grouting of any potential voids is required after removal.

The Contractor should schedule the replacement of the backwall when there is no anticipated high water. The Contractor is required to develop an Emergency Action Plan to protect the integrity of the levee in the event of high water for the U.S. Army Corp of Engineers to be included in the shoring plan submittal described above. An observed river stage or forecasted river stage of 48 feet on NOAA's river gauge "Mississippi River at Helena" (NWSLI: HEEA4, Reach ID: 14197803) shall trigger the Contactor's Emergency Action Plan. The river elevation trigger shall require the Contractor to stop excavation in the west backwall area and have a readily available approved material for backfill. The Contractor shall provide any additional reports requested by the U.S. Army Corp of Engineers in the event of levee overtopping or damage due to the backwall replacement.

METHOD OF MEASUREMENT: The design, construction, and removal of the shoring system herein described shall be measured on a lump sum basis for each site.

PAYMENT: Work completed, accepted, and measured as provided above will be paid for at the contract lump sum price bid for "Shoring (Site No. 1)". Such price shall be full compensation for the preparation of required submittals and necessary design details and drawings; for construction and subsequent removal of the shoring; and for all materials, labor, tools, equipment, and incidentals necessary to complete the work. The excavation and backfill necessary for installation of the required shoring will not be paid for directly but shall be considered subsidiary to the item "Shoring (Site No. 1)".

Payment will be made under:

Pay Item	**Pay Unit**
Shoring (Site No. 1)	Lump Sum

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STRUCTURAL STEEL SHORING

DESCRIPTION: Work under this item shall consist of the design, construction, relocation if applicable, and removal of a shoring or bracing system to support existing bridge members as shown in the plans for repair of designated main truss floor beams, replacement of stringer pin & hanger assemblies, replacement of approach floor beams, replacement of wind locks in the main truss and approaches, and other repairs that may require temporary support on Bridge No. 02899 over the Mississippi River at Helena-West Helena. The shoring system shall provide sufficient support and clearance during the removal of designated existing bridge members and the replacement with new members as indicated in the plans. The shoring system chosen by the Contractor for the specific site work shall always ensure the safety of the workers and of any vehicles/barges in the vicinity.

The bridge plan sheets and this special provision show the general intent and location of the required shoring systems. Shoring systems used at the Contractor's option shall follow the submittal process and requirements according to this special provision.

SUBMITTALS: The Contractor shall prepare a submittal package as noted below. Submit shop drawings and design calculations to the Engineer 30 (thirty) consecutive calendar days prior to beginning of any work at repair location.

1. **Heavy Lifter Qualifications:** The Heavy Lifter (the Contractor or Subcontractor to provide jacking equipment and perform jacking operations) shall submit proof that the Heavy Lifter's qualifications have been met with similar projects in the United States completed within the last five years with names and phone numbers of the previous project owners.

   The Heavy Lifter Qualifications shall include the following:
   - **a.** A minimum of five years of experience of heavy lifting, and
   - **b.** shall have successfully completed 3 (three) heavy lifting operations using the chosen method in the United States.

2. **Working Drawings and Calculations for Bridge Shoring**: Working drawings for the Shoring (Type "1 thru 5") shall be submitted to the Engineer a minimum of 30 (thirty) calendar days prior to beginning the work at each location. The design shall be according to AASHTO Standard Specifications for Highway Bridges, 17th Edition. Provide drawings defining the geometry, materials, and member sizes of the bridge and temporary works. If necessary, include foundations and details of temporary bents to support the span under construction, including piling, spread-footings, or other foundations.

   Existing girders may be utilized to support platforms for workers, materials, and equipment; however, no cutting, drilling or welding to any existing structural steel will be allowed. All methods of attachment to girders shall be submitted to the Engineer and approval secured before installation. Unless work is being actively done at the location, any ground access to the work areas shall be positively closed to prevent unauthorized access.

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The Contractor shall submit their analysis and design calculations including load demands throughout each stage of jacking and falsework erection and verification of capacity of all affected members using in-field conditions based on AASHTO Standard Specifications for Highway Bridges, 17th Edition. Provide calculations indicating the bridge temporary works are adequate for the proposed load demands and that settlement or elastic deflections of the bridge temporary works and bridge members will not adversely affect the bridge. Quality Control (QC)/Quality Assurance (QA) review shall be completed and documented by the Contractor. The design and working drawings shall be signed and sealed by a Professional Engineer in the State of Arkansas.

3. **Jacking Plan**: A Jacking Plan shall be prepared for submittal which should include at least the following:
   - **a.** Equipment to be used.
   - **b.** All Equipment Specifications from the Manufacturer and include at least the following:
     - ii. Maximum allowable weight per jack.
     - iii. The allowable maximum height of the jack.
     - iv. Stroke length.
   - **c.** Base plate dimensions and weight.
   - **d.** Material dimensions, specification, and supplier information for any additional steel, concrete, or wood members or bolts used to assist the jacking operation.
   - **e.** Load paths for the additional members.
   - **f.** Jacking displacement limits to prevent damage to the bridge members and deck.
   - **g.** Location of where the monitoring equipment will be placed.
   - **h.** Step by step jacking procedures:
     - i. Include operational details for the control of lifting and setting the bridge superstructure.
     - ii. Include quality control steps the operators take to verify the system is properly set up, and that the setup matches the submitted drawings.
     - iii. Include steps to provide the jacking sequences for safety.
     - iv. Include a schedule of the jacking sequence.

4. **Monitoring Plan**: Provide a monitoring plan either as working drawings, or as a manual, to include at least the following:
   - **a.** Description and details of the monitoring system(s) provided by the manufacturer(s).
   - **b.** Measuring equipment, procedures, required measurements, and locations of geometry control reference points on the bridge or elsewhere. Measurements may be elevations, dimensions, stresses, pressures, loads, or other readings.
   - **c.** Pre-jacking and jacking monitoring.
   - **d.** Warning levels and absolute limit levels. Define allowable tolerances and warning levels.
     - i. Set displacement limits to avoid damage to the bridge during the jacking.
   - **e.** Minimum detectable measurements and system accuracy.
   - **f.** Potential remedial actions that must be implemented when measurements exceed the warning levels.

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i. Required measurements, when they are taken and recorded.

5. **Contingency Plan**: Provide a Contingency Plan that includes potentially disruptive events and a contingency plan for each. Address equipment breakdown, delays during the jacking and shoring operations, severe weather, and any other risks. Define key personnel, their responsibilities, and their required actions if any part of the contingency plan must be implemented. List backup equipment on site and local contacts for replacement parts or service.

6. **Safety and Communication Plan**: Provide a Safety and Communications Plan and include at least the following:
   a. Safety Plan
      i. Schedule of operation
      ii. Organization of machinery
      iii. Safety gear requirements
      iv. Operational perimeter
      v. Communication plan, including communication with maintenance of traffic operations
      vi. Public impacts, methods of communication during bridge jacking, and lead communicator

   b. Contact Information:
      i. Bridge jacking supervisor (primary point of contact for the operation(s))
      ii. Contractor supervisor
      iii. Safety supervisor
      iv. Engineer of Record
      v. Contractor's Engineer
      vi. ARDOT Resident Engineer

7. **Contract Plan Revisions**: The Contractor may submit alternate design plan details or construction methods meeting the following criteria to the Engineer for approval at no cost to the Department**:**
   a. Provide revised plans detailing dimensional, structural, and other physical changes to the permanent structure necessitated by the construction methods.
   b. Design and detail changes according to AASHTO Standard Specifications for Highway Bridges, 17th Edition.
   c. Provide supporting calculations that include at least the following:
      i. Summary of revisions and evaluation.
      ii. Calculations showing that the proposed changes do not adversely impact the load carrying capacity of the structure.
   d. Complete and document QC/QA procedures.
   e. Provide the seal of a Professional Engineer (PE) licensed in the State of Arkansas on plans and calculations covering the plan revisions made.

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8. **Pre-Construction Meeting**. A pre-construction meeting shall be scheduled by the Engineer to be held after receipt and review of the complete work plan and construction experience submittals. The Engineer; the Contractor, including their Superintendent; the specialty subcontractor, including onsite supervisors, shall attend. Attendance is mandatory before jacking or shoring operations begin. The meeting will be conducted to clarify the requirements of the work, to discuss any concerns, and to coordinate the construction schedule and responsibilities. This meeting may be combined with the Safety and Contingency Plan meeting under “Construction Methods and Requirements” if approved by the Engineer.

CONSTRUCTION METHODS AND REQUIREMENTS: All shoring types discussed in this section shall require safety and contingency plans. At a minimum of two weeks prior to jacking or shoring, conduct a safety and contingency coordination meeting involving the Contractor, Heavy Lifter, and the Engineer. Identify all issues or items that have potential impact on the safety of any personnel, bridge component, and the schedule. Establish a two-way communication method that all parties agree upon.
On the day of the jacking, conduct a final walk-through safety meeting immediately prior to jacking the bridge, with the Contractor (Heavy Lifter) and the Engineer. Verify all items identified in the contingency and safety plans have been completed. Reinforce communication and authority responsibilities during the jacking process. Submit final contingency plan to the Engineer a minimum of 48 (forty-eight) hours before the jacking operation begins.

The results obtained by the jacking and shoring methods are the Contractor’s responsibility. The Contractor shall be responsible for any damage caused by the operation in the process of jacking or shoring the structure and shall repair such damage without additional compensation.

1. **Shoring Type 1: Main Truss Spans Floor Beam.** The intent of this shoring method is to provide temporary support during the repair of Floor Beams L25, L43, and L59 and the replacement of the Main Truss Span wind locks at the same locations.

   Jacking of Existing Structure: The proposed method for jacking the structure shall conform to the following:
   - **a.** The existing stringers shall be jacked the minimum amount to allow for the unloading of the stringer self-weight and tributary dead load from the existing floor beam. All stringers shall be carefully jacked simultaneously and uniformly.
   - **b.** Jacking shall be done as shown in the jacking plans.
   - **c.** Suitable blocking (i.e. cribbing, shoring, shimming, falsework), independent of jacks, shall be provided to ensure full support of stringers while the jacking system assembly is placed and removed. Blocking shall be sized such that the overall lateral stability of the blocking is assured. Blocking shall be carefully placed to maintain lateral stability of the span being lifted.
   - **d.** A separate lateral restraint system shall be installed prior to the removal of any wind lock component. Lateral movement during the jacking operation shall be limited to 1/8"

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relative displacement between main truss units. Lateral alignment shall be restored prior to installation of wind locks.

e. After all repairs are completed, the jacks shall be carefully lowered simultaneously and uniformly, and the shoring system shall be removed. The monitoring plan(s) shall be followed through the completion of all work associated with these repairs.

2. **Shoring Type 2: Main Truss Spans Wind Lock.** The intent of this shoring method is to provide temporary lateral restraint between Main Truss Units 1 and 2 during the wind lock replacement at L15.
   a. A lateral restraint system shall be installed prior to the removal of any wind lock component. Lateral movement during the jacking operation shall be limited to 1" relative displacement between main truss units. Lateral alignment shall be restored prior to installation of wind locks.
   b. After all repairs are completed, the temporary restraint shall be carefully removed.

3. **Shoring Type 3: Main Truss Spans Stringer.** The intent of this shoring method is to provide temporary support during the replacement of stringer pin and hanger assemblies and the replacement of stringer connection angles.

   Jacking of Existing Structure: The proposed method for jacking the structure shall conform to the following:
   a. The existing stringer shall be jacked the minimum amount to allow for the unloading of the stringer self-weight and tributary dead load from the existing floor beam.
   b. Suitable blocking (i.e. cribbing, shoring, shimming, falsework), independent of jacks, shall be provided to ensure full support of the stringer while the jacking system assembly is placed and removed. Blocking shall be sized such that the overall lateral stability of the blocking is assured. Blocking shall be carefully placed to maintain lateral stability of the span being lifted.
   c. Shoring shall be designed to accommodate the following minimum service (unfactored) loads:
      1. Weight of shoring: Contractor to determine
      2. Superimposed Dead Load: 21.6 kips
      3. Live Load: 79.4 kips
   d. After all repairs are completed as shown in the plans, the jacks shall be carefully lowered, and the shoring system shall be removed. The monitoring plan(s) shall be followed through the completion of all work associated with these repairs.

4. **Shoring Type 4: Approach Spans Floor Beam.** The intent of this shoring method is to provide temporary support during the replacement of the wind locks and west floor beams at the expansion joints near Piers 7 and 18 in the approach spans and the floor beam at the East Abutment.

   Jacking of Existing Structure: The proposed method for jacking the structure shall conform to the following:

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a. Prior to beginning any jacking operations and after jacks are in place below the stringers, the positive connection between the existing stringers and floor beams shall be removed.
b. The existing stringers shall be jacked the minimum amount to allow for the unloading of the stringer self-weight and tributary dead load from the existing floor beam. All stringers shall be carefully jacked simultaneously and uniformly.
c. Suitable blocking (i.e. cribbing, shoring, shimming, falsework), independent of jacks, shall be provided to ensure full support of stringers while the jacking system assembly is placed and removed. Blocking shall be sized such that the overall lateral stability of the blocking is assured. Blocking shall be carefully placed to maintain lateral stability of the span being lifted.
d. A separate lateral restraint system shall be installed prior to the removal of any wind lock component, if applicable. Lateral movement during the jacking operation shall be limited to 1/8" relative displacement between approach units. Lateral alignment shall be restored prior to installation of wind locks.
e. After all repairs are completed as shown in the plans the jacks shall be carefully lowered simultaneously and uniformly, and the shoring system shall be removed. The monitoring plan(s) shall be followed through the completion of all work associated with these repairs.

5. **Shoring Type 5: Approach Spans Wind Lock.** The intent of this shoring method is to provide temporary lateral restraint between Approach Units 1 and 2 during the wind lock replacement at the expansion joint near Pier 4.
   a. A separate lateral restraint system shall be installed prior to the removal of any wind lock component, if applicable. Lateral movement during the jacking operation shall be limited to 1/8" relative displacement between approach units. Lateral alignment shall be restored prior to installation of wind locks.
   b. After all repairs are completed as shown in the plans the jacks shall be carefully lowered simultaneously and uniformly, and the shoring system shall be removed. The monitoring plan(s) shall be followed through the completion of all work associated with these repairs.

METHOD OF MEASUREMENT: The design, construction, removal, and if applicable, the relocation/reconstruction at another location on the bridge of the shoring system herein described shall be paid on a Lump Sum basis for the “Type”.

PAYMENT: Work completed, accepted, and measured as provided above will be paid for at the contract Lump Sum price bid for the Pay Item. Such bid price shall be full compensation for the preparation of necessary design calculations, details and drawings, and other submittal documents; for construction and subsequent removal of the shoring; and if applicable, reconstruction at another location on the bridge, and for all materials, labor, tools, equipment, and incidentals necessary to complete the work.

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Payment will be made under:

Pay Item	**Pay Unit**
Shoring Type 1: Main Truss Spans Floor Beam	Lump Sum
Shoring Type 2: Main Truss Spans Wind Lock	Lump Sum
Shoring Type 3: Main Truss Spans Stringer	Lump Sum
Shoring Type 4: Approach Spans Floor Beam	Lump Sum
Shoring Type 5: Approach Spans Wind Lock	Lump Sum

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REQUIREMENTS OF U.S. COAST GUARD PERMIT

DESCRIPTION: The following requirements are for Bridge No. 02899 in Job 110812, Hwy. 49 Mississippi River Bridge Rehab. (S), that crosses the Lower Mississippi River from Helena-West Helena, Arkansas to Lula, Mississippi at river mile 661.6.

REQUIREMENTS: All construction operations in and over the navigable waterways and levees shall conform to the requirements or directions of the Engineer, U.S. Army Corps of Engineers – Memphis Division, U.S. Coast Guard – St. Louis District, and /or other authority having jurisdiction.

The Contractor shall submit a work plan with details of construction methods for work platforms, scaffolds, containment systems, etc. over the navigation channel to the U.S. Coast Guard at least 30 days prior to the commencement of the work in the affected area for an issuance of a Work Conditions letter.

Address correspondence to:

(dwb): USCG Heartland District
8th Coast Guard District Bridge Branch
1222 Spruce St.
St. Louis, MO 63103-2832

Attn: Eric Washburn, Bridge Administrator
Email: Eric.Washburn@uscg.mil

A copy of any correspondence to the U.S. Army Corp of Engineers or the U.S Coast Guard, shall be sent to ARDOT Bridge Division, Little Rock, Arkansas.

The U.S. Coast Guard shall be extended an invitation to attend the Preconstruction Conference for this project.

No direct payment will be made for this item. It shall be considered subsidiary to other items in the contract.

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DESCRIPTION: This item shall consist of specifications relative to the coordination of work during construction operations at the beginning, and/or intermediate points, and/or end of contracts or jobs and shall be supplementary to Section 105, Control of Work, of the Standard Specifications, Edition of 2014.

PROJECTS: If awarded to contract by ARDOT, coordination of work may be necessary with the Contractor for Job 110708, Arkansas Midland RR Str. & Apprs., during the construction of Job 110812. Coordination will not be limited to Job 110708, but will include any other Contractors that may have active jobs adjacent to this project during the construction period.

The Mississippi Department of Transportation will have an asphalt mill and inlay project on Hwy. 49 with sawing and sealing on the bridges, starting at the end of Job 110812 and ending at the intersection of Hwy. 49 & Hwy. 1. The project is currently scheduled to start in November 2026 and end in April or May 2027. The project is U.S. Hwy. 49 Coahoma County, Job Numbers STBG-0057-01(008) & SMS 110222-301000. The contact information is as follows:

Ms. MacKenzie Fountain, PE, Pre-Construction Engineer
Office Phone: (662) 563-4541
Email: Mfountain@mdot.ms.gov

The U.S. Army Corps of Engineers will have a Helena Floodwall construction project in the vicinity of Job 110812 anticipated to start July 2027. Their project is USACE-Helena Floodwall-CB-101. (The floodwall plans are available at the Helena ARDOT District 1 Resident Engineer Office #11 upon request and will be sent by email.) The U.S. Army Corps of Engineers contact information is as follows:

Ms. Tanya Wells, P.E.,
Section 408 Coordinator, Inspection Manager/Structural Engineer
U.S. Army Corps of Engineers, Memphis District
Email: Tanya.L.Wells@usace.army.mil
Phone: (901) 500-5326

Refer to the “Shoring” Special Provision for submittal information required by the U.S. Army Corps of Engineers before any work is to begin associated with the west backwall replacement.

Because both the U.S. Army Corps of Engineers Contractor and the Contractor for Job 110812 will be utilizing Warden’s Landing Road for access to their respective projects, maintenance of traffic coordination will be required for the area off of Hwy. 49 to the Levee Road.

BUSINESSES: Poinsett Rice & Grain Inc.currently leases properties to the north and south of Bridge No. 02899 and ARDOT will allow connectivity between the properties. The Engineer will coordinate with **Mr. Kaleb Bevel, Facility Manager for Poinsett Rice & Grain, Inc.** to maintain

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connectivity by allowing trucks to travel between the bridge piers. Mr. Bevel's contact information is as follows:

Mr. Kaleb Bevel, Facility Manager
Mobile phone (870) 995-1605
Work phone (870) 338-8469
Email Kaleb@poinsettrice.com
Office address: 446 PC 400 Rd., Helena, AR 72342

The ARDOT Access Road (Waldens Landing) from Hwy. 49 to the properties leased by Poinsett Rice & Grain Inc. and the Helena Marine Service, Inc., is within the right-of-way owned by ARDOT and will remain in-place at the conclusion of this project. The Engineer will coordinate use of this ARDOT Access Road (Waldens Landing) and closure/opening of the existing road gate during construction with Poinset Rice & Grain, Inc. and the Helena Marine Service, Inc. The contact information for **Mr. Terry Ferebee, VP – Vessel Operations for Helena Marine Service, Inc.** is as follows:

Mr. Terry Ferebee, VP
Mobile phone (870) 995-1604
Work phone (870) 338-8321
Email terry.ferebee@hms-hbt.com
Office address 106 Walden Landing, Helena, AR 72342

The Engineer shall have the final authority to close some of the pier spaces and/or reopen the pier spaces to prevent truck traffic from being in conflict with construction operations or material storage at the specified location/s. The Engineer willl contact Poinsett Rice & Grain three business days, either by phone or email, before closure of pier space/s to allow for redirecting of their truck pattern.

The Engineer will contact both Poinsett Rice & Grain, Inc. and the Helena Marine Service, Inc. two business days before any traffic pattern change or material delivery that would affect the Hwy. 49 Access Rd. (Waldens Landing). Both companies are to divert traffic and employees to the PC 400 River Road. Once the Portable Traffic Signals with Countdown-Timers are installed and operational to manage traffic flow across the bridge during construction, trucks and vehicles will NOT be permitted to cross the bridge into Arkansas and turn left onto the ARDOT Access Road (Waldens Landing) to the area under the bridge. Trucks and vehicles will not be permitted to exit onto Hwy. 49 from the ARDOT Access Road (Waldens Landing). The ARDOT Access Road (Waldens Landing) will be used by the Contractor for the duration of the construction project and will be available for emergencies and Engineer approved special requests from the Helena Marina Service, Inc. and Poinsett Rice and Grain, Inc.

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ENTERGY: There are currently two locations where electrical lines cross under the bridge. ARDOT has requested that Entergy bury the lines crossing under the bridge to facilitate construction of this project and for future maintenance. If there is a delay in this request to bury the lines, then the Contractor is to coordinate with Entergy as follows:

If any construction process called for in the plans requires workers or equipment to be within 15 ft. (vertically or horizontally) of the power lines, coordination by the Engineer will be required with the shown contact for Entergy Arkansas, LLC. Entergy has requested a 30-day advanced notice of a potential power outage to allow for coordination with the affected customers. The duration or number of outages allowed by Entergy will solely be based on the customers' needs. Entergy's contact information is as follows:

Jonathan Loyless, Project Manager, Operations & Construction
Entergy Arkansas, LLC
Mobile phone (318) 669-6231
Email: jloyles@entergy.com

CONSTRUCTION: The Contractor shall schedule and perform the planned operations of construction in such a sequence that work on the facility will progress in an expeditious manner.

The Contractor shall furnish the Engineer for approval a plan or schedule of his proposed work of the project where coordination with another Contractor or company will be necessary. He shall keep the Engineer informed or advised of any action or cause that might affect the successful coordination of work with other Contractors, area businesses, or Entergy.

To relay project information/updates of a non-emergency nature to all local emergency services, local media, and to have the information added to the County Emergency Management Facebook page, the Engineer will contact Ms. Janice Jarrett at (870) 338-5530 or by email at Jay19_82@hotmail.com. Ms. Jarrett handles public notifications for the police, fire, schools, government administration in Helena-West Helena, and other interested parties in the area.

ACCIDENTS/EMERGENCIES: In the event of an accident or emergency, The Engineer or other personnel on site of the accident shall call "911" and provide relevant information requested. The local Helena-West Helena Office of Emergency Management handles emergency events for Arkansas, Mississippi, and for the Mississippi River. They also have the following non-emergency number: (870) 338-5555, ext. 9.

There will be no direct payment for compliance with the requirement in this special provision.

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Subsection 108.02(a) is hereby deleted and the following is substituted therefore:

108.02 Prosecution of Work.

(a) Preconstruction Conference. Before beginning the work specific to the project and unless waived by the Engineer, a preconstruction conference shall be held at a mutually agreed upon time and place. The Engineer will notify subcontractors, utility companies, and other interested parties of the time and place of the preconstruction conference. The Contractor shall submit the following to the Engineer before or at the preconstruction conference:

- A company safety plan and the name of the safety officer;
- An EEO/affirmative action plan and the name of the EEO officer;
- A list of key project personnel and their phone numbers;
- A list of proposed subcontractors;
- The names of Material Testers.

Subsection 108.02(b)(4) and the remainder of Subsection 108.02 is hereby deleted and the following is substituted therefore:

(c) Full Work Order.

(1) Calendar Day Contract. Unless the Contractor is otherwise advised in writing, the Work Order of a calendar day contract shall become effective on the fifteenth calendar day following the execution of the Contract. Should the effective date fall on a Saturday, Sunday, or legal holiday; Monday following a holiday on Sunday, or Friday preceding a holiday on Saturday, the effective date shall be the next work day. The assessment of contract time shall begin on the date the Contractor actually begins work or no later than as specified in the Special Provision “Flexible Beginning of Work - Calendar Day Contract”.

Only work specified in SS 108-2 may begin before the assessment of contract time begins.

(2) Allocation of Department Resources. The Department allocates its resources to a contract based on the total time allowed in the Contract. However, should the Contractor propose an accelerated work schedule, the Department will provide the necessary resources to meet the demands of the accelerated work schedule. Utility and/or Right of Way (ROW) related delays are exempt from impact claims for the first ninety (90) days after the work order date.

(d) CPM Schedule.

(1) General. Prepare and submit to the Engineer a Critical Path Methodology (CPM) schedule in accordance with Section (j) “General Requirements of the Project Schedule” of this special provision utilizing scheduling best practices.

The schedule shall be used to plan, coordinate, and manage the work, whether the Contractor’s personnel are performing the work or not. Copies of the complete baseline schedule, update schedules, and revised schedules shall be shared with all subcontractors, suppliers, and utility companies affected by the work.

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Float is a shared commodity and is not for the exclusive use or benefit of any party. It is available to all parties as needed until it is consumed.

The "Structure of the Project Schedule" document is located on the ARDOT website at https://ardot.gov/divisions/construction/construction-information/ under CPM Schedule Information.

(e) Project Scheduling. Time is of the essence and the contract time requirement is a key factor for success to both the Department and the Contractor. All time limits stated in the Contract Documents are of essence to the Contract. The purpose of the Department requiring the project schedule shall be to:

- Ensure adequate planning during the prosecution and progress of the work in accordance with the allowable number of calendar days and all milestones identified by the Contract;
- Assure coordination of the efforts of the Contractor, Department, Utilities, and others that may be involved in the project;
- Assist the Contractor and Department in monitoring the progress of the work and evaluating proposed changes to the Contract;
- Assist the Department in administering the contract time requirements;
- Ensure that the project is planned for the entire project duration and completed within the contract time as bid.

The observance of the requirements herein is an essential part of the work to be performed under the Contract. No direct compensation will be allowed for fulfilling these requirements, as such work is considered subsidiary to the various bid items of the Contract.

(f) Personnel. The Contractor shall provide an individual, referred to hereafter as the Scheduler, to create and maintain the project schedule. The Scheduler shall be proficient in CPM development and analysis of resources, and shall be able to perform the required tasks using the specified software. The Scheduler shall be present, in person or via tele-conference at the discretion of the Engineer, at all CPM update meetings and made available for discussion or meetings when requested by the Engineer.

(g) Bid Schedule.

(1) General. The apparent low bidder shall provide an electronic ".xer" file, a PDF schedule report, and a bid schedule narrative to the Department's Program Management Division, via Doc Express, by 4:30 p.m. by the 5th calendar day following the opening of bids. Should the apparent low bidder fail to submit the bid schedule and the bid schedule narrative within the time allotted, the proposal will be rejected and the proposal guaranty will be returned to the bidder. Award may then be made to the next lowest responsible bidder, or the work may be re-advertised and constructed under contract or otherwise, as the Commission may decide. The low bidder who failed to produce an acceptable bid schedule, bid schedule narrative, or both will not be permitted to bid on any subsequent advertisement of the project.

(2) The Department shall review and verify the constructability of the bid schedule prior to contract award. At a minimum, the bid schedule shall contain the following:

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- Include external constraints (outside Contractors work, utilities, permitting, Short Term Activity Authorizations (STAA), ROW clearance, etc.). Use the dates provided in the respective Special Provisions.
- High-level activities summarized by the Work Type Code as set forth in the "Activity Codes/Work Type" section of the "Structure of the Project Schedule" document located on the ARDOT website shall be represented in the schedule for each stage.
- Full scope of work for the entire project duration (bid contract time) clearly reflecting the MOT (Staging) plan as reflected in the bid documents in accordance with the MOT (Staging) plan described in the bid documents in accordance with the Work Breakdown Structure (WBS) sections of the "Structure of the Project Schedule" document located on the ARDOT website to level 3 detail of the WBS.
- The bid schedule shall be a CPM logic driven schedule.
- Appropriate work calendars shall be developed and applied for the various activities in accordance with all calendar references under Section (j) "General Requirements of the Project Schedule" of this special provision. Calendars shall include specified holidays, Sundays, and include anticipated adverse weather days.

(3) Bid Schedule Narrative. A schedule narrative shall be provided with the Bid Schedule proposal, and shall include the following information:

- General description of the workflow and plan for completing the project.
- A Time-Line illustrating the MOT (Staging) plan including key milestones such as utility turnover dates, migrating bird netting, ROW clearance date, etc.
- The working days per week, the number of shifts per day, the number of hours per shift, the holidays to be observed, and a description of how the schedule will account for adverse weather days.

(4) Criteria for Acceptance of the Bid Schedule.

- The bid schedule narrative shall meet all criteria as shown in the "Bid Schedule Narrative" subsection of this special provision.
- High level activities shall be included for all applicable Work Type codes for the full scope of work.
- The bid schedule shall be organized by the MOT (Staging) plan described in the bid documents in accordance with the "WBS Structure" sections of the "Structure of the Project Schedule" document located on the ARDOT website to level 3 detail of the WBS.
- The bid schedule shall be a CPM logic driven schedule.
- The bid schedule shall contain appropriate work calendars reflecting holidays, Sundays, and a reasonable number of adverse weather days.
- The bid schedule shall indicate that the work can be reasonably assumed to be completed in the calendar days bid.

The bid schedule and bid schedule narrative submitted by the apparent low bidder will be reviewed by the Department to determine if the criteria noted in this Special Provision have been met. If it is determined by the Department that the submitted bid schedule, bid schedule narrative, or both do not meet the specified criteria, the bidder will be notified in writing, detailing the issues of concern and allowed the opportunity to submit a revised bid

schedule, bid schedule narrative, or both. The revised bid schedule, bid schedule narrative, or both must be submitted within two business days of notification. If the revised bid schedule, bid schedule narrative, or both are deemed unacceptable or not submitted within two business days of notification, just grounds exist for rejection of the proposal. In this case, the bidder will be notified that an acceptable bid schedule, bid schedule narrative, or both have not been submitted and will be provided an opportunity for administrative reconsideration. A request for administrative reconsideration must be submitted to the Chief Engineer within two business days of the Department's notification. As part of the administrative reconsideration, the bidder may provide corrections or arguments concerning the issue of whether the bid schedule and bid schedule narrative meet the specified criteria. The Chief Engineer will render a written decision on the reconsideration explaining the basis for the finding. If the Chief Engineer determines that a bid schedule and a bid schedule narrative are not produced that meet the specified criteria, or no administrative reconsideration is requested, the proposal will be rejected and the proposal guaranty will be returned to the bidder. Award may then be made to the next lowest responsible bidder, or the work may be re-advertised and constructed under contract or otherwise, as the Commission may decide. The low bidder who failed to produce an acceptable bid schedule, bid schedule narrative, or both will not be permitted to bid on any subsequent advertisement of that project.

(h) Baseline Schedule.

(1) General. The Contractor shall provide the Baseline Schedule to the Engineer as soon as possible after notification of contract award. The Engineer will review the Baseline Schedule per Section (j) "General Requirements of the Project Schedule" of this special provision, and notify the Contractor of its acceptability. **The Contractor will not be allowed to start work until the Baseline Schedule has been approved by the Engineer. The contract time will start no later than that specified in the Special Provision "Flexible Beginning of Work - Calendar Day Contract" after the issuance of the work order. No time extension shall be considered for failure to submit an acceptable Baseline Schedule within the time period specified above.**

(2) Baseline Schedule Narrative. The schedule narrative shall not be considered notification of delays, requests for change orders, or other issues. The Contractor shall provide a schedule narrative with the Baseline Schedule including the following information and topics as laid out:

- General description of the workflow and plan for completing the project.
- A timeline illustrating the MOT (Staging) plan according to bid documents; including key milestones such as utility turnover dates, migratory bird netting, ROW clearance date, etc.
- A description of the longest path.
- Subcontractors, equipment (full and part time noted), monthly crew staffing plan.
- List of completion dates for all major milestones.
- The work days per week, the number of shifts per day, the number of hours per shift, and the holidays to be observed, and a description of how the schedule accounts for adverse weather days.
- Activities requiring coordination with the Department, utilities, other parties, etc. (external constraints).

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- Attachment defining each crew completely, describing the equipment, including number and type, required to carry out the work. The number of crews is to be defined by the Contractor. It is expected that a sufficient number of crews will be developed to correspond to the Contractor's plan to complete the project within the time specified. At a minimum, please include a list containing a legend for all abbreviations/acronyms.

Baseline Schedule Joint Review, Revision, and Acceptance. Within fifteen (15) calendar days of receipt of the Contractor's proposed Baseline Schedule, the Engineer shall evaluate the schedule for compliance with this specification and notify the Contractor of the findings. If the Engineer requests a revision or justification, the Contractor shall provide a satisfactory revision or adequate justification to the satisfaction of the Engineer within five (5) calendar days. The Contractor will not be allowed to start work until the Baseline Schedule has been approved by the Engineer.

The contract time will start no later than that specified in the Special Provision "Flexible Beginning of work – Calendar Day Contract" after the issuance of the work order. The Baseline Schedule submitted for acceptance must be sequenced according to the MOT plan provided in the contract documents. If the Contractor submits a Baseline Schedule for acceptance that is based on a sequence of work not in the plans, it will be rejected by the Engineer.

The Engineer's review and acceptance of the Contractor's Baseline Schedule is for conformance to the requirements of the Contract documents only. Review and acceptance by the Engineer of the Contractor's project schedule does not relieve the Contractor of any of its responsibility for the project schedule, or of the Contractor's ability to meet interim milestone dates (if specified) and the contract completion date, nor does such review and acceptance expressly or by implication warrant, acknowledge or admit the reasonableness of the logic, durations, manpower or equipment loading of the Contractor's Baseline Schedule. In the event the Contractor fails to define any element of work, activity or logic and the Engineer review does not detect this omission or error, such omission or error, when discovered by the Contractor or Engineer, shall be corrected by the Contractor at the next schedule submittal and shall not affect the project completion date.

At a time agreeable to the Engineer, the Contractor shall conduct a **Baseline Schedule Presentation Meeting** within seven (7) calendar days after submitting the proposed Baseline Schedule. The purpose of this meeting is for the Contractor to present the Contractor's schedule. The following is a minimum to be covered at the joint review of the schedule:

- Work Breakdown Structure (WBS)
- Sequence of work - step through the schedule activity by activity
- Resources - to include crews and production rates used
- Longest path Review

(3) Criteria for Acceptance of Baseline Schedule. The Engineer will accept a schedule based on the following:

- Baseline Schedule Presentation review meeting.

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- Conformance with Section (j) "General Requirements of the Project Schedule" of this special provision and any other contract requirements.

The Engineer's acceptance of a schedule:

- Does not modify the Contract.
- Does not constitute endorsement or validation by the Engineer of the Contractor's activity logic, activity durations, or assumptions in creating the schedule.
- Does not guarantee that the project can be performed or completed as depicted in the schedule.
- Does not relieve the Contractor of its obligation or responsibility to submit complete and accurate information.

If the Contractor or Engineer discovers an error after the Engineer has accepted a schedule, the Contractor shall correct the error in the next schedule submission.

The Contractor will not be allowed to start work until the Baseline Schedule has been approved by the Engineer.

(i) Update Schedule.

(1) General. On a bi-weekly basis and in alignment with each pay estimate, the Contractor shall perform a complete update including the application of actual resource units. The bi-weekly schedule update shall be provided with each pay estimate. A .pdf schedule report shall be provided to the Engineer, showing each activity's original duration, remaining duration, percent complete, start date, finish date, material resource name, budgeted quantity, actual quantity, quantity to complete, and unit of measure as an attachment to the pay estimate. An electronic ".xer" backup file of the schedule shall be submitted to the Engineer. The Contractor's scheduler must attend each bi-weekly schedule update; either in person, via computer, or tele-conference as determined by the Engineer. The following reports shall be provided as determined by the Engineer; three (3) week look-ahead, critical activities (longest path), productivity/quantities, actual/planned.

The project schedule and narrative shall be updated and submitted in accordance with Section (j) "General Requirements of the Project Schedule" of this special provision every twenty-eight (28) days (every other bi-weekly update) to align with pay estimates. The project schedule shall be updated during a joint project schedule update meeting that will be attended by the appropriate Engineers and Contractor representatives. The Contractor's scheduler must attend the joint project update meeting; either in person, via computer, or tele-conference as determined by the Engineer. The joint project update meeting shall occur within no more than three (3) business days from the pay estimate date. All schedule submittals and time restrictions are required unless otherwise approved by the Engineer in writing. The schedule shall be submitted no later than close-of-business two (2) business days after the joint project schedule update meeting.

The Contractor shall meet with the Engineer to review and input into the project schedule the actual progress made until the data date of the schedule update. The review of progress will include dates for activities actually started and/or completed, and the duration percentage of work completed or remaining duration on each activity started and/or

completed. The percentage of work completed shall be calculated by using the quantity and production rate information.

(2) Assignment of Baseline Schedules. The following Baseline Schedules shall be assigned prior to submission of schedule updates. The submitted schedule ".xer" backup file shall contain the following assigned Baseline Schedules:

- Project Baseline - assign the approved Baseline Schedule.
- Primary Baseline - assign the approved update from the prior month
- Secondary Baseline - assign the approved update from 2 months prior

(3) Store Period Performance. The "Store Period Performance" function shall be performed every twenty-eight (28) days (every other bi-weekly update) to align with pay estimates and the full schedule, reports, and narrative submittal to lock in actual-this-period units to coincide with the joint project update meeting prior to submission of the schedule update for review and disposition.

Failure to attend the scheduled update meeting or submit the schedule update within the specified period may result in the stoppage of work until the Department receives the schedule update and future withholding of estimate payments until the specified evaluation time has elapsed and the Contractor receives approval from the Engineer.

(4) Update Schedule Narrative. The schedule narrative shall not be considered notification of delays, Requests for Changes Orders, or other issues. A schedule narrative shall be provided with each schedule update including the following information and topics as laid out:

- General description of status and what occurred during update period.
- Issues - known and potential
- Mitigation efforts associated with each issue
- General description of planned work during next update period
- Material quantities must align with estimate item codes and schedule resources.
- Schedule Related RFI's
- Schedule Related Change Orders and/or Proposals
- Attached default Claim Digger report
- Oracle Primavera schedule log report

(5) Update Schedule Joint Review, Revision and Acceptance. Within seven (7) calendar days of receipt of the Contractor's submitted Update Schedule, the Engineer shall evaluate the schedule for compliance with this specification, and notify the Contractor of the findings in writing. If the Engineer requests a revision or justification, the Contractor shall provide a satisfactory revision or adequate justification to the satisfaction of the Engineer within seven (7) calendar days. **Failure to provide revisions or justification within seven (7) calendar days may result in future withholding of estimate payments and/or the stoppage of work until a satisfactory response has been received, the specified evaluation time has elapsed, and the Contractor receives approval from Engineer.**

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The update schedule submitted for acceptance must be sequenced according to the MOT plan provided in the contract documents. If the Contractor submits an update schedule for acceptance that is based on a sequence of work not previously approved by the Engineer, it will be rejected. Any MOT change of sequence must be submitted and approved through the change order process before inclusion in the Schedule.

The Engineer's review and acceptance of the Contractor's project schedule is for conformance to the requirements of the contract documents only. Review and acceptance by the Engineer of the Contractor's project schedule does not relieve the Contractor of any of its responsibility for the project schedule, or of the Contractor's ability to meet interim milestone dates (if specified) and the contract completion date, nor does such review and acceptance expressly or by implication warrant, acknowledge, or admit the reasonableness of the logic, durations, manpower, or equipment loading of the Contractor's project schedule. In the event the Contractor fails to define any element of work, activity, or logic and the Engineer review does not detect this omission or error, such omission or error, when discovered by the Contractor or Engineer, shall be corrected by the Contractor at the next schedule submittal and shall not affect the project completion date.

(j) General Requirements of the Project Schedule.

(1) Scheduling Requirements. The following requirements are the minimum for the project schedules submitted by the Contractor to be in compliance with the Contract Documents. The project schedule shall employ computerized CPM for the planning, scheduling, and reporting of the work as described in this specification. The project schedule shall be prepared using the Precedence Diagram Method. The Contractor shall create and maintain the project schedule using scheduling software compatible with Engineer supported scheduling software. The Project will use Oracle Primavera P6 v8 or newer mutually agreed upon version of Oracle Primavera, which shall mean that the Contractor provided electronic file version of the project schedule may be loaded or imported by the Department with no modifications, preparation, or adjustments.

All scheduling software settings within the scheduling/leveling dialog box shall remain ‘default’ unless otherwise approved by the Department. The Contractor shall use retained logic for calculating all project schedules. Out-of-sequence Work shall be itemized and described in the monthly schedule narrative and discussed at monthly project schedule update meetings.

The Schedule will be prepared showing construction to the full contract time.

The Contractor shall create and maintain a CPM project schedule showing the manner of prosecution of work that he intends to follow in order to complete the contract within the allotted time.

- The project schedule shall show the sequence and interdependence of activities required for complete performance of the work. At a minimum all pay items shall be accounted for in the activities in the schedule including all If and Where Directed Items showing the plan quantity being utilized. The Contractor shall be responsible for assuring all work sequences are logical and show a true and coordinated plan of the work.

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Each activity in the project schedule shall be described by:

- An activity ID (number) utilizing an alphanumeric designation system tied to the traffic control plans, as described in the "Activity ID Structure" section of the "Structure of the Project Schedule" document located on the ARDOT website and that is agreeable to the Engineer. At no time shall an activity ID be changed from one schedule version to another (i.e. from bid schedule to baseline schedule to update schedules and between monthly updates).
- Concise and unique description of the work represented by the activity name with no duplicate activity name within the project schedule as described in the "Activity Naming Convention" section of the "Structure of the Project Schedule" document located on the ARDOT website; and
- Activity durations in whole days with a maximum of twenty (20) calendar days. Longer durations may be used for non-construction activities (mobilization, submittal preparation, curing, etc.), and other activities mutually agreeable between the Engineer and Contractor.
- An activity duration shall be based on the quantity for the individual work activity divided by a production rate. Activities that have varying production rates may be required to be separated into multiple activities by the Engineer.
- A User Defined Field shall be utilized to assign production rates to their associated activities and resources. The User Defined Fields shall be developed and structured in accordance with the "User Defined Field" section of the "Structure of the Project Schedule" document located on the ARDOT website.

The activities shall be coded so that organized plots/layouts of the project schedule may be produced as described in the "Activity Codes" subsection of this special provision.

The activities shall be assigned to a WBS as described in the "WBS Structure" sections of the "Structure of the Project Schedule" document located on the ARDOT website.

Administrative activities and milestones shall be incorporated into the schedule and assigned to the 'Admin/Milestones" WBS level as follows:

- All milestones identified by the Contract shall be reflected as start milestones with a 'start no earlier than' constraint or finish milestones with a 'finish no later than' constraint.
- Project Start-Start Milestone for work prior to work order.
- (NTP/Work Order Start)-Start Milestone for work after work order.
- Stage Complete-Finish Milestone for each stage of the project (shall not be constrained unless necessary to reflect MOT (Staging) plan)
- Substantial Completion-Finish Milestone to follow all contracted work scope and punch-list activities required for beneficial use. A Project Level "Must Finish By" date shall be applied on Calendar Day and Fixed Completion Date contracts. Note that the project level "Must Finish By" constraint is as-of 12:01 am.
- Project Complete-Finish Milestone to follow all close-out activities after substantial completion.
- Contract Days-No Level of Effort activities are to be used with the exception of a Level of Effort activity used for tracking the planned, actual, and remaining contract days. Relationships to be Start-to-Start (SS) with NTP/Work Order-Start milestone and

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Finish-to-Finish (FF) with Substantial Completion milestone. This activity will reflect total contract duration and track actual days charged against contract duration.

- Additional milestones used by the Contractor shall be approved by the Engineer.
- Constraints-only constraints associated with the WBS, phasing, staging, milestones, or project completion dates specified in the Contract are allowed. Any constraints to be utilized on the schedule other than the aforementioned dates must be authorized in advance by the Engineer.
- No lags shall be used on Finish-To-Start relationships and no negative lags shall be used at any time.
- No Start-to-Finish relationships shall be used at any time.
- No activity shall have only Start-to-Start successor relationship(s) or only Finish-to-Finish predecessor relationship(s).
- Critical path shall be determined by the longest path.
- No activity shall contain scope that represents multiple Contractors, trades, or types of work.
- The Contractor shall resource-load the project schedule by assigning every construction activity the appropriate material and equipment resources which align with the Contractor's project plan and directly correlate to and support the Estimate Item Codes (Schedule of Values).
- Only project calendars shall be used. No global calendars may be used. Separate calendars shall be developed and assigned to activities for various Work Types, as appropriate.
- Seasonal weather conditions shall be considered and included in the project schedule for all work influenced by temperature and/or precipitation. Seasonal weather conditions shall be determined by an assessment of average historical climatic conditions. Average historical weather data is available through the National Oceanic and Atmospheric Administration (NOAA), company historical records, or any additional reference the Contractors deems necessary to prepare an accurate schedule. These effects will be simulated through the use of work calendars for each major work type (i.e., earthwork, concrete paving, structures, asphalt, drainage, etc.) for all activities.
- The work calendars shall be updated each month to reflect the actual days worked.
- Total Float is the amount of time that an activity can be delayed from its early start date without delaying the project finish date. Free Float is the amount of time that an activity can be delayed without delaying the early start date of any successor activity. Float time in the project schedule is a shared commodity between the Department and the Contractor. Suppression or consumption of float shall not be allowed, including by use of extended activity durations, dummy activities, unspecified or unnecessary milestones, unnecessary logic ties, or preferential sequencing.

At a minimum, include the following work activities, as applicable:

- Work to be performed by the Contractor, subcontractors, and suppliers.
- Work to be performed by the Department and third parties.
- The project start date, scheduled completion dates, and other milestones required by the Contract, start or finish dates for phases, or site access or availability dates.
- Submittal review and approval activities when applicable, including time for the Department's approval as specified in the Contract.

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- Fabrication, delivery, installation, testing, and similar activities for materials, plants, and equipment.
- If and where directed items shall be included in the schedule as an activity showing the plan quantity being utilized.
- Sampling and testing periods.
- Settlement or surcharge periods.
- Cure periods.
- Utility notification and relocation identified in the Contract.
- Installation, erection, and removal identified in contract documents and similar activities related to temporary systems or structures.
- Required acceptance testing, inspections, or similar activities.
- Activities representing acquisition of any necessary permits to be obtained by the Contractor or acquisition of right of way when a delay of occupancy is included in the contract documents.
- Activities shall not be deleted from the schedule. If scope or activity no longer applies, close the activity using the following process:
  - Apply actual start and finish date.
  - Remove activity from current sequence string.
  - Add predecessor of Project start and successor of project complete.
  - Add negative resource quantity(s) so as to have a quantity sum of zero (0).
  - Add note on activity explaining the reason for closing the activity and add the word “CLOSED” to the activity description.
  - Ensure explanation is included in the monthly narrative.

(2) Resource Loading

All construction activities shall be resource loaded as follows:

- Labor resources assigned with associated crews.
- Material resources assigned with associated quantities and appropriate units of measure such as to allow for earned value, production analysis, and s-curves. All material quantities shall be carried on material resources in alignment with and equal to the estimate item code “schedule of value line items” bid/contract quantities.
- Major equipment shall be assigned as resources with associated hours.

(3) Store Period Performance. At the end of each update cycle, “Store Period Performance” shall be performed to lock in actual-this-period units prior to submission of the schedule update for review and disposition. This should occur every twenty-eight (28) days in conjunction with a pay estimate and the full schedule, reports, and narrative submittal.

(4) Earned Value Rules (Performance Measurement). All scheduling software settings within the Earned Value, User Preference Calculations, and User Preference Resource Analysis dialog boxes shall remain ‘default’ unless otherwise approved by the Department.

(5) Level of Schedule Detail/Submission Requirements. Each project schedule submittal shall include a “.xer” electronic backup file and three (3) plots in .pdf or other

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format as determined by the Engineer with the activities logically grouped using the Project's WBS and then by Work Type activity code as set forth in the "WBS" and "Activity Codes" sections of the "Structure of the Project Schedule" document located on the ARDOT website and sorted by start date and total float:

- One bar chart plot showing the entire project schedule, with the longest path through the schedule readily discernible; and
- The second bar chart plot showing only the longest path;
- The third bar chart plot showing a 60-day Look-Ahead schedule, starting with the data date, containing no completed activities.

(6) Project Schedule Revisions. If the Contractor desires to make changes in the project schedule, the Contractor shall notify the Engineer in writing prior to making the revisions. The written notification shall include the reason for the proposed revision, what the revision is comprised of, and how the revision was incorporated into the schedule. In addition to the written notification of the revision, the Contractor shall include a ".xer" electronic backup file of the project schedule that includes the revision and one logically organized plot of the project schedule if requested by the Engineer.

The Department may request the submission of a revised schedule if any of the following circumstances occur:

- There is a delay (actual or projected) to the scheduled milestone or project completion dates.
- There is a difference between the actual sequence or durations of the work and the sequence or durations depicted in the last accepted schedule.
- The Department executes a contract revision that adds or deletes work, modifies the planned sequence of work, or modifies the means and methods of its performance.

The requirement to prepare a revised schedule is not a directive by the Department to accelerate the work.

Prepare and submit the revised schedule as soon as the need for a revised schedule is necessary, but no more than five (5) business days after the Department's request.

Within five (5) business days of receipt of the revised schedule, the Department will respond in writing either accepting the revised schedule or rejecting the revised schedule and identifying the reasons for rejection, or requesting more information. Within five (5) business days after the date of the Department's written response, address the reasons for rejection and resubmit the revised schedule or provide the information requested.

(7) Recovery Schedules. If the work is delayed such that the projected finish date of any completion deadline or contract milestone, in the current update schedule, is behind by twenty-eight (28) calendar days, then the Contractor shall provide a Recovery Schedule within seven (7) calendar days, including a recovery plan detailing how the delay will be recovered and the completion deadline(s) achieved, prior to submittal of its next monthly update schedule. The Recovery Schedule shall demonstrate the Contractor's plan to regain lost progress and achieve all completion deadlines per the Contract Documents.

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(8) Change Orders. Any and all change orders affecting schedule durations, sequencing, and/or material, or equipment quantities shall be incorporated into the schedule, whether additive or deductive.

A fragnet shall be developed for all potential change orders. The fragnet and Time Impact Analysis (TIA) shall be submitted for inclusion with the change order. Failure to submit a fragnet with the change order forfeits any recovery for an associated recoverable project delay at any future date.

Approved Change Orders shall be incorporated into the current schedule with the activity(s) clearly identified and reflected as to the change order number the items are associated with. Potential time extensions based on change orders will be analyzed based on the most recent approved schedule, impact to the longest path, and subsequent movement of the current project completion date in accordance with the Evaluation of Delays and Calculation of Time Extensions section of this special provision.

For each added Change Order activity, the activity ID shall have CO plus the change order number added to the end of the standard activity ID structure. The activity description shall have CO plus the change order number added to the beginning of the standard activity description structure. Leading zeros should be included as part of the three (3) digit change order number.

For Change Orders only affecting resource quantities (not requiring new activities), the changer order resources may be added to existing activities, as appropriate, in accordance with the change order scope.

a. Change Order Resources. Resources shall be created and assigned to activities for each approved change order, whether the resource resides on an existing or new change order activity. Change order resources shall include the entire scope of the change order. The resource code shall have CO plus the change order number added to the end of the standard resource ID structure. The resource description shall contain CO plus the change order number. Any leading zeros should be included as part of the change order number. All resource and cost loading rules apply to change orders.

Subsection 108.06 is hereby deleted and the following is substituted therefore:

108.06 Determination of Time of Completion and Extension of Contract Time.

(a) General. The time bid by the Contractor for the completion of the work included in the Contract will be stated in the proposal and Contract, and will be known as the "Contract Time". The contract time will be specified as calendar days.

The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project according to the plans and specifications within the contract time. The Contractor shall advance the work so that the available time is appropriately utilized in order to complete the work within the contract time.

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Unless an emergency is declared, the Contractor shall not perform work that requires inspection on Sundays or legal holidays designated in Subsection 101.01(c) and the actual holiday if it falls on a Saturday or Sunday. If the Commission declares Friday following Thanksgiving Day as a Department recognized holiday, the Contractor shall not perform work that requires inspection. These days shall be charged in a Calendar Day contract.

No claim for an extension of time will be considered as a result of failure of the Engineer to furnish interpretations of the plans and specifications until 30 calendar days after receipt of such demand in writing as required by Subsection 105.01, and not then unless such request for an interpretation is clearly presented for understanding, reasonable and made in good faith.

The Engineer will determine the date upon which the Contract is substantially complete and time assessment will cease. In the event cleanup is necessary or items found at the final inspection are to be corrected, the Contractor shall complete this work in a timely manner or the Engineer will resume time charges.

(b) Calendar Days. When the contract time is specified in calendar days, time will be assessed for each calendar day in accordance with the Special Provision "Flexible Beginning of Work - Calendar Day Contract". A calendar day is defined under Subsection 101.01.

The Contractor shall take into consideration all normal conditions considered unfavorable to the progress of the work and place a sufficient work force and equipment on the project to ensure completion of the work with the contract time. Inaccessibility to a portion of the work due to utility conflict or utility work will be considered as an adverse condition for time exceeding that specified in the Contract for the utility adjustment.

Contract time will not be assessed during a full suspension of the work as ordered by the Engineer. Contract time will be assessed during a Partial Work Order period according to Subsection 108.02(b)(3). During a partial suspension of the work as ordered by the Engineer, the contract time will be assessed in direct proportion to the ratio of the money value of the items not suspended to the total contract amount.

(c) Extensions to the Contract Time. The Contractor shall immediately notify the Engineer of a delay once the Contractor becomes aware of the delay, not at the conclusion of the delay. The Contractor waives entitlement to a time extension or compensation for delay or costs incurred before the Contractor notified the Engineer of the delay.

Only Department responsible delays in activities that affect the milestone dates or the contract completion date, as determined by CPM analysis, will be considered for a time extension.

The Contractor's plea that the contract time was insufficient is not a valid reason for an extension of time. When the time as extended by the Department falls on a date that is a Sunday or holiday, the Engineer will extend the contract time to the next business day.

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The Department will evaluate the Contractor's documentation and analysis, and determine the time extension due, if any. The Department will not evaluate a request for an extension of the contract time or revise the contract time unless the Contractor notifies the Department in accordance with the contract documents and specifications.

The Engineer will evaluate delays and requests for extensions or revisions to phased or interim start or finish dates, or durations for portions of the project in the same manner as requests for an extension of the contract time for the project as a whole. Comply with the requirements of this subsection when seeking a time extension for phased or interim start or finish dates or durations.

In the event that the Department extends the contract time into a period of the year during which the working conditions are less favorable, the Department will consider a further extension of time based on the nature of the work the Contractor scheduled to perform during the less favorable period. Conversely, if the Department extends the contract time into a period of the year during which the working conditions are more favorable, the Department will consider reducing the contract time extension. If the Department reduces the work required to complete the project or relaxes phase or stage requirements, the Department may reduce the contract time.

(d) Evaluation of Delays and Calculation of Time Extensions. The Engineer will evaluate the Contractor's request for a time extension based on the Contractor's compliance with the following requirements:

- Base all evaluations of delay and all calculations of the appropriate time extensions due on the schedules submitted to and accepted by the Department and current at the time the delay occurred, not schedules created after the delay occurred.
- The delay is on the longest path when the delay occurred.
- The delay results in a scheduled milestone or project completion date that is later than the date required by the Contract.
- When using a CPM schedule, determine the duration of delays as follows:
    - Use time impact analysis (TIA) to identify and measure critical delays that have not yet occurred. Do not use this method to evaluate delays that have already occurred. In general terms, perform a TIA as follows:
        - Develop a "mini" schedule for the changed work. This schedule is known as a fragnet.
        - Identify the current accepted schedule and record the scheduled completion date on that schedule.
        - Insert the fragnet into the current schedule by properly linking the fragnet with the existing activities in the current accepted schedule.
        - Recalculate the current schedule with the fragnet inserted and record this scheduled completion date.
        - The difference in the calculated scheduled completion dates between the current schedule and the schedule calculated with a properly inserted and properly composed fragnet is the delay attributable to the changed work. The time extension due, if any, will be based on this delay.
    - Use a contemporaneous analysis when evaluating delays that have already occurred. In general terms, perform a contemporaneous analysis as follows:

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- Identify the most recent accepted schedule with a data date before the start of the delay being evaluated.
- Identify each accepted schedule in effect during the delay and the schedule with a data date that immediately follows the conclusion of the delay.
- Identify the longest path each day from immediately before the start of the delay to the schedule immediately following the delay.
- Determine whether the delay falls on the longest path.
- If the delay does not fall on the longest path, then no project delay occurred and no time extension is due.
- If the delay falls on the longest path, then determine the number of days the longest path is delayed. The time extension due, if any, will be based on this delay.

(e) Administration of Time Extensions. For a Calendar Day project, the Department will provide a time extension by adding calendar days to the contract time.

(f) Excusable, Non-Compensable Delays. Excusable, non-compensable delays are unforeseeable and unavoidable delays that are not the Contractor's or the Department's fault or responsibility. The Contractor is entitled to a contract time extension but not entitled to compensation for delay costs associated with an excusable, non-compensable delay. The following are excusable, non-compensable delays:

- Delays due to floods, tornadoes, earthquakes, or other natural disasters that affect the project in regions which are declared as disaster areas by governing authorities.
- Delays due to utility or railroad work when the Contractor is required to alter operations due to conflicts with utility facilities not shown in the plans or railroads not shown in the plans.
- Utilities exceeding estimated completion dates noted in the contract that affect the longest path.
- The Contract requires the furnishing of critical materials and the Contractor experiences a delay in delivery because of Federal priorities for defense needs or because of nationwide shortages. Additional contract time may be allowed in an amount equal to the actual lost time resulting from such delay. To obtain additional contract time, the Contractor shall document and file with the Engineer all evidence pertaining to the original agreement with the material supplier or manufacturer. This evidence must indicate that delivery would be made at or before the time the materials would be needed in the normal sequence of construction operations for incorporation in the work.
- In the event that no prior agreement has been made for furnishing a critical material, and the Contractor is unable to locate a supplier or manufacturer that can deliver the material when needed, the Engineer shall be advised of this situation in writing, indicating the date that delivery will be made and the date of the original request for such material. In either of these situations, when work has progressed to the point that critical materials not delivered are delaying progress of the project, the Contractor may make a written request to the Engineer for additional contract time.
    - Delays due to civil disturbances or acts of war or terror.
    - Delays due to epidemics or quarantines.

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- Delays due to labor strikes that are beyond the control of the Contractor, subcontractors, or suppliers and are not caused by the improper acts or failures of the Contractor, subcontractor, or supplier.

(g) Excusable, Compensable Delays. Excusable, compensable delays are delays that are not the Contractor's fault or responsibility but are the Department's fault or responsibility. The Contractor is entitled to a contract time extension and to compensation for delay costs associated with an excusable, compensable delay that affects the longest path. The Department will determine compensation for an excusable, compensable delay. The following are excusable, compensable delays:

- Delays due to an Engineer-ordered suspension.
- Delays due to the Department's neglect.
- Delays due to subsection 104.02(b) "Significant Changes in the Character of Work" that directly delay the longest path. Compensation will be as allowed under subsection 104.02(b).
- Delays due to subsection 104.02(c) "Differing Site Conditions" that directly delay the longest path. Compensation will be as allowed under subsection 104.02(c).

(h) Non-Excusable Delays. Non-excusable delays are delays that are the Contractor's fault or responsibility or delays that the Contractor could have foreseen or avoided, and weather delays not covered by the events listed in the "Excusable, Non-Compensable Delays" subsection of this special provision. Delays due to the Contractor's, subcontractors', or suppliers' insolvency or performance are neither excusable, nor compensable. The Contractor is not entitled to a time extension or compensation for a non-excusable delay.

(i) Concurrent Delays. Concurrent delays are separate delays to critical activities occurring at the same time. When a non-excusable delay is concurrent with an excusable delay, the Contractor is not entitled to a time extension for the period the non-excusable delay is concurrent with the excusable delay. When a non-compensable delay is concurrent with a compensable delay, the Contractor is entitled to a contract time extension but not entitled to compensation for the period the non-compensable delay is concurrent with the compensable delay.

In addition to the requirements above, the following requirement is added utilizing the updated project schedule:

Project Status Spreadsheet. Within twenty-one (21) calendar days after the start of contract time, the Contractor shall provide the project status spreadsheet in the format shown in Attachment A of this item or as directed by the Engineer. The project status spreadsheet will summarize the monthly and cumulative status of the project, revenue, forecasted revenue, anticipated stockpiled material estimate requests, and approved change orders. The project status, revenue status, and forecasted revenue listed on the Project Status Spreadsheet shall be calculated based on the current updated schedule. The Project Status Spreadsheet shall be updated with each bi-weekly estimate and revised every time the current schedule is updated.

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Failure to provide a Project Status Spreadsheet that the Engineer is able to accept may result in future estimate payments being withheld until an acceptable Project Status Spreadsheet is received and appropriate evaluation time has elapsed.

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Attachment A

Project Status Spreadsheet

Report Date	
Project No:	
Highway:	
Contractor's Name:	NAME
Notice-to-Proceed Date:	

First Pay Period Date:	
Estimated Completion Date:	

Original Contract Value:	
Total Approved Change Orders:	$ -
Total Contract Value (This Pay Period):	$ -

Pay Period		TOTAL	1/0/00	1/14/00	1/28/00	2/11/00	2/25/00	HIDE	HIDE	HIDE	HIDE	HIDE	HIDE
Baseline Schedule % Complete		0.00%											
Actual Schedule % Complete	Project Status (Time)	0.00%											
Current Projected % Complete		0.00%											
Baseline Pay Request		$ -											
Actual Pay request	Revenue Status	$ -											
Current Projected Pay Request		$ -											

CUMULATIVE		TOTAL	1/0/00	1/14/00	1/28/00	2/11/00	2/25/00	HIDE	HIDE	HIDE	HIDE	HIDE	HIDE
Schedule % Complete		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Projected/Actual % Complete	Project Status (Time)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Scheduled Baseline		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Projected/Actual $	Revenue Status	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Instructions:

1. Attachment A is due the first week of the month.
2. Update the Report date to the Last Day of the previous month.
3. Add all change orders to the change orders tab.
4. Update all actual periods with Actual payments submitted and actual schedule % complete.
5. Projected information should be updated monthly with your current projections.
6. If there is an error in cell C14 it indicates total Actual + future periods Projected Revenues do not equal the Total Current Contract value.
7. If there is an error in C15 it indicates Actual Schedule % for prior periods + future periods Projected % Complete do not equal 100%.
8. Attachment A should be loaded into DocExpress as an excel workbook into the folder "CPM Schedule Contractor Submittal".

Definitions

Report Date		This should be the last day of the month for the reporting period.
Schedule % Complete		Enter the estimated percent complete for each month based on the Baseline Schedule.
Actual % Complete (bi-monthly)	Project Status	Use duration percent complete from your current schedule.
Current Projected % Complete		Enter your projected % complete for all future periods. For prior months, the values will be equal to Actual % complete. The sum of this line should be 100%.
Original Pay Request schedule		Once Baseline Schedule is approved, enter the monthly estimated pay request. This becomes your "Baseline Pay Request" and should not change over time. The sum of this should be the original contract value.
Actual Pay request	Revenue Status	Enter the actual dollar amount shown on the bi-weekly pay request.
Current Projected Pay Request		Enter the projected bi-weekly pay requests. For prior months, the value will be equal to Actual pay requests. The sum of this line should be the Total Contract Value plus all change Orders.

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WATER POLLUTION CONTROL

Section 110 of the ARDOT Standard Specifications for Highway Construction, Edition of 2014 is hereby amended as follows:
The following is added to **Section 110**:
Sedimentation, turbidity, and other water pollution shall be carefully controlled and minimized on this project due the proximity to the Mississippi River. The Contractor shall, in all operations, make provisions to prevent as much material or debris, resulting from work performed on this project, as practical from entering the waterway. Required actions of the Contractor shall include, but are not limited to, the following:

- No material shall be wasted or temporarily stockpiled in the Arkansas or Mississippi Flood Plains where it can be eroded or washed into the Mississippi River.
- Riprap as specified in Subsection 816.02 (a)(2), or larger, shall be used to construct all approved temporary fills.
- All temporary fill must be removed prior to completion of the project as directed by the Engineer. After removal, salvaged material that meets the requirements of Subsection 816.02 (a)(2) may be reused in other areas that require the utilization of riprap.
- Storage areas of petroleum, paint, cleaning materials, and other chemical products shall be located away from the river and floodplain to prevent all possibility of spillage into the water. The Engineer reserves the right to limit the amount of these products in areas where spillage into the waterway is possible.
- If material or debris resulting from Contractor operations enters the river, the Engineer shall determine whether it shall remain. If it is determined that the material is to be removed from the waterway, the Engineer must preapprove the Contractor's method of removal and the method shall meet the requirements of the agencies that control activities involving the Mississippi River.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT: The work involved in complying with this Special Provision will not be measured or paid for separately, but will be considered included in the contract unit prices bid for other items of the contract.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

PRIME CONTRACTOR PERFORMANCE EVALUATION

All projects with a contract bid amount of $10 million or greater will be evaluated in accordance with the Prime Contractor Performance Report Manual (PCPRM) adopted by the Department on September 30, 2025.

The manual is located on the Construction Contractor Information page on the ARDOT.gov website.

The Engineer will evaluate the contractor using the metrics and at intervals identified in the PCPRM. The evaluation ratings will be used to provide constructive feedback and as a tool to identify areas for improvement. The contractor shall be given opportunity to review and comment on the evaluation as well as the opportunity to appeal the Engineer's rating.

No direct payment will be made for inclusion of the PCPRM in the contract.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

SEQUENCE OF CONSTRUCTION – ALTERNATIVE CONCEPTUAL PROPOSAL (ACP)

DESCRIPTION: This item shall consist of scheduling the various construction items to maintain traffic and provide an orderly progression of work.

The general sequence of construction for the various stages of work on this project are shown on the maintenance of traffic plans.

The sequence as shown on the maintenance of traffic plans is a general outline for the construction of this project, and in no way is it intended to cover every item in the project. Items not critical to the construction sequence may be constructed in any stage as approved by the Engineer.

PRE-BID - ALTERNATE CONCEPTUAL PROPOSAL (Noted as ACP): The Contractor may submit for consideration an Alternate Conceptual Proposal (ACP) for sequence of construction to be used as the basis for developing the bid on this project. The ACP for sequence of construction should be submitted to the Program Management Division at **pmd@ardot.gov**. The deadline to submit an ACP is 6 weeks prior to the scheduled letting date. All ACP's submitted prior to the deadline will receive a response. The ACP will be held in the strictest confidence by the Department, and the response to the requested ACP will only be made to the Contractor submitting the ACP. The Contractor shall have the **written** approval of the Engineer before the ACP may be used for bidding purposes.

Upon execution of the contract, the Contractor will be required to submit for review and approval a traffic control plan of comparable detail to the traffic control plans included in the job, showing all traffic control items necessary to accomplish the work. Upon approval of the traffic control plans, the Contractor's ACP shall become the accepted sequence for this project. Any further alterations or deviations from the accepted ACP shall have the **written** approval of the Engineer. If the Contractor's ACP necessitates additional traffic control devices or other materials beyond the contract amount, such devices and materials shall be provided, maintained, and replaced, if necessary, at no cost to the Department.

POST CONTRACT EXECUTION - ALTERNATE CONCEPTUAL PROPOSAL: The Contractor may submit for consideration an Alternate Conceptual Proposal (ACP) for sequence of construction. If an ACP is approved, the Contractor will be required to submit for review and approval a traffic control plan of comparable detail to the traffic control plans included in the job, showing all traffic control items necessary to accomplish the work. Upon approval of the traffic control plans, the Contractor's ACP shall become the accepted sequence for this project. Any further alterations or deviations from the accepted ACP shall have the **written** approval of the Engineer. If the Contractor's ACP necessitates additional traffic control devices or other materials beyond the contract amount, such devices and materials shall be provided, maintained, and replaced, if necessary, at no cost to the Department.

There will be no direct payment for fulfilling the requirements of this Special Provision, but compensation will be considered to be included in the price bid for the various contract items.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

INSPECTOR'S PERSONAL PROTECTION CLOTHING

The Contractor shall provide respiratory protection and protective clothing to all inspectors entering an area where there is the possibility of exposure to hazardous materials, such as paint containing lead material. Protective clothing and equipment shall be approved by OSHA or other applicable regulatory agencies.

No direct payment will be made for this item. It is considered subsidiary to the pay item of "Cleaning and Painting Structural Steel (Type II)".

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

SITE USE (A+C METHOD) - CALENDAR DAY CONTRACT

1. General. The process for bidding will take into account not only the contract amount bid but also the bidder's stated delivery time in which the Specified Site Use Work will be substantially complete. This method shall be used to determine the successful bidder and to establish the contract time (calendar days). It shall not be used to determine the award amount nor final payment to the Contractor when the project is completed.

2. Definition of Terms.

(a) Specified Site Use Work. The specified site use work, referred to herein as Part C, shall consist of all items of work in the Contract.

(b) Contract Amount. The summation of the products of the quantities shown in the bid schedule multiplied by the unit bid price.

(c) Calendar day. As defined in Subsection 101.01 of the Standard Specifications. Calendar days will be assessed in accordance with the contract Special Provision “Prosecution and Progress With Bid Schedule”.

(d) Contract Time. The number of calendar days established by the bidder to complete the project.

(e) Substantially Complete. The date at which time charges cease due to the completion of all pay items. The Engineer will be the sole authority in determining when the work is substantially complete. Part C Site Use Work will be considered complete on this date.

(f) Daily Road User Cost. The amount which represents the average daily cost to the road user, including but not limited to, user delay costs, vehicle operating costs, crash costs, and emission costs. The daily road user cost for Part C is $ 10,000.

(g) Bid Site Use Time. The number of calendar days specified in the bid by the bidder as the time required to substantially complete the Specified Site Use Work for Part C.

(h) Punch List. A list of items and/or areas of the project requiring correction, replacement, repair, or general cleanup which is furnished by the Engineer following the declaration of the project as Substantially Complete.

3. Preparation of Proposal. The bidder shall establish the number of calendar days to be used to substantially complete the Specified Site Use Work for Part C.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

SITE USE (A+C METHOD) - CALENDAR DAY CONTRACT

The product of the number of calendar days established by the bidder for Part C multiplied by the daily road user cost of $ 10,000 per calendar day will be added to the contract amount bid. The sum of the two amounts will be the amount used for consideration of bids for award.

4. Consideration of Bids. Each bid submitted shall consist of two parts:

(A) The Contract amount.

(C) Total number of calendar days proposed by the bidder to substantially complete the Specified Site Use Work for Part C.

The successful bid will then be determined by the Department as the lowest combination of (A) and (C) according to the following formula:

(A)
+ [(C) x (daily road user cost of $ 10,000)]
= Bid amount for award consideration.

The preceding formula shall be used only to determine the successful bidder and shall not be used to determine the contract award amount nor final payment to the Contractor, except as may be adjusted under sections 6 and 7 below.

5. Assessment of Site Use Time. Site use time will begin in accordance with contract time detailed in the special provision “Flexible Beginning of Work – Calendar Day Contract”.

Unless an emergency is declared or unless allowed by other job provisions, the Contractor shall not perform work that requires inspection on Sundays, legal holidays designated in Subsection 101.01 of the Standard Specifications, Edition of 2014, and Monday following a holiday on Sunday or Friday preceding a holiday on Saturday. If the Commission declares Friday following Thanksgiving Day as a Departmental holiday, the Contractor shall not perform work that requires inspection on this day. These days will be charged in a “Calendar Day” contract.

Extensions of the Bid Site Use Time for Part C will be granted ONLY for the following reasons:

(a) The work has been delayed by any act or omission of the Commission. This includes suspension of the work when the suspension is not the fault of the Contractor.

(b) Change Orders affecting the work that results in additional time being required to complete the Specified Site Use Work.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

SITE USE (A+C METHOD) - CALENDAR DAY CONTRACT

Requests for extension of the Bid Site Use Time shall be made in writing and shall state the reasons for the request and identify the specific days for which extension is requested.

6. Early Completion of Specified Site Use Work. The Contractor will be paid $ 10,000 for each calendar day the Specified Site Use Work is substantially complete before the number of calendar days stated by the Contractor in the bid, including extensions granted in accordance with paragraph 5 above. The maximum number of calendar days for which this payment will be made is 195 days. Payment for early completion will be made after all items identified on the punch list have been completed to the satisfaction of the Engineer.

7. Failure to Substantially Complete the Specified Site Use Work in the Time Bid. Failure to substantially complete the Specified Site Use Work within the number of calendar days stated by the Contractor in the bid, including extensions granted in accordance with paragraph 5 above, will result in the Daily Road User Cost of $ 10,000 being assessed for every calendar day in excess of the stated number, up to the time in which the Specified Site Use Work is substantially complete.

This assessment will be deducted from any compensation due the Contractor or recovered if sufficient compensation is not due.

The Engineer will be the sole authority in determining when the Specified Site Use Work is substantially complete.

8. Contract Time and Liquidated Damages. Determination of calendar days charged, extensions of Contract Time, and assessment of liquidated damages for failure to complete all work within the Contract Time limit will be made in accordance with the Standard Specifications Section 108. Liquidated Damages under Section 108 of the Standard Specifications are ***separate and in addition*** to the Daily Road User Cost assessed under this Special Provision.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 110812

PARTNERING REQUIREMENTS

Section 104 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added to **subsection 104.01:**

The Department encourages on this project the establishment and use of a voluntary cohesive partnership agreement between the Department and its Prime Contractor and subcontractors. Toward this end, a partnership may be structured between these parties to draw on the strengths of each to identify and achieve their mutual goals. The objectives of this are:

- Effective contract performance,
- Efficient contract performance,
- Completion of the project within budget,
- Completion of the project on schedule, and
- Construction of the project in accordance with the contract.

This partnership will be shared equally between the Department and the Prime contractor and subcontractors. Participation in this "partnering" concept is voluntary on this project. The Prime Contractor and approved subcontractors shall bear the costs associated with their personnel's time while participating in seminars, workshops, and meetings for successful "partnering" on this project.

In order to obtain a successful partnering relationship and agreement, the Department shall arrange for a partnership development/team building workshop prior to the preconstruction conference. Persons required to attend this workshop are:

- Contractor and approved Subcontractor President, Vice President, or General Superintendent,
- Contractor and approved Subcontractor project Superintendent,
- Department District Engineer,
- Department Resident Engineer,
- Appropriate Department Design personnel,
- Department Staff Construction Engineer, and
- Department Area Materials Engineer.

The Federal Highway Administration and other interested parties shall be invited to attend and participate, but their attendance will not be required.

The Department and/or the Contractor may bring other personnel at their option.

Follow-up meetings shall be held periodically throughout the duration of the contract. The establishment of a partnership charter on this project will not change the legal relationship of the Department and the other participating parties to the contract nor relieve either party from any of the terms of the contract.

The partnership agreement shall NOT constitute authority to change the contract, plans, or Specifications.

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SPECIAL PROVISION

JOB NO. 110812

VALUE ENGINEERING

Section 104 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added as a new subsection:

104.08 Value Engineering Change Proposals (VECP):

(a) General. The Contractor may submit a Value Engineering Change Proposal at any time after execution of the Contract by the Department. Any VECP submitted before this date shall be deemed to have been submitted on the date the Contract was executed by the Department and the time allowed for consideration of the VECP shall begin on that date. Any cost savings generated to the Contract as a result of a VECP submitted by the Contractor and approved by the Department shall be shared equally between the Contractor and the Department.

The Contractor may submit a VECP for an approved subcontractor. Subcontractors may not submit a VECP except through the Contractor.

Bid prices shall not be based on the anticipated approval of a VECP. If a VECP is rejected, the Contract shall be completed at the Contract bid prices.

If the Department determines that the time for response indicated in the submittal is insufficient for review, the Contractor will be promptly notified. Based on the additional time needed by the Department for review and the effect on the Contractor's schedule occasioned by the added time, the Department will evaluate the need for a time extension.

The Contractor shall have no claim against the Department for any delay to the Contract based on the failure to respond within the time indicated in the submittal if additional information is needed to complete the review.

VECPs contemplated are those that could produce a savings to the Department without impairing essential functions and characteristics of the facility; including but not limited to, service life, economy of operation, ease of maintenance, desired appearance, and safety.

The Contractor may submit for review a “VECP Concept” provided that it contains enough information to clearly define the work involved and the benefits to be realized. Written notification by the Department that the review has been completed and that the “VECP Concept” appears to be favorable merely indicates that the engineering and plan development may continue for submittal of the VE Change Proposal and is not authorization for any construction work to begin. Should the final design not reflect the expected benefits, the Department may reject the “VECP Concept” and the VE Change Proposal without recourse by the Contractor.

(b) Submittal of Proposal: The following materials and information shall be submitted with each proposal:

1. A statement that the proposal is submitted as a VECP.
2. A description of the difference between the existing Contract and the proposed change, and the cooperative advantages and disadvantages of each,

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

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VALUE ENGINEERING

including effects on service life, economy of operations, ease of maintenance, desired appearance, and safety.

3. A complete set of plans and specifications showing the proposed revisions relative to the original Contract features and requirements.

4. A complete analysis indicating the final estimate costs and quantities to be replaced by the Proposal compared to the new costs and quantities generated by the Proposal.

5. A statement specifying the date by which a Change Order adopting the Proposal must be executed to obtain the maximum cost reduction during the remainder of the Contract. This is the review time.

6. A statement detailing the effect the Proposal will have on the Contract time for completing the Contract.

7. A description of any previous use or testing of the Proposal and the conditions and results. If the Proposal was previously submitted on another Department project, indicate the date, Contract number, and the action taken by the Department.

(c) Conditions: VECPs will be considered only when all the following conditions are met:

1. VECPs, approved or not approved by the Department, apply only to the ongoing Contract(s) referenced in the Proposal and become the property of the Department. The Proposal(s) shall contain no restrictions imposed by the Contractor on their use or disclosure. The Department has the right to use, duplicate, and disclose in whole or in part any data necessary for the utilization of the Proposal. The Department retains the right to utilize any accepted Proposal or part thereof on other projects without obligation to the Contractor. This provision is not intended to deny rights provided by law with respect to patented materials or processes.

2. If the Department is already considering certain revisions to the Contract or has approved certain changes in the Contract for general use that are subsequently incorporated in a VECP, the Department will reject the Proposal and may proceed without obligation to the Contractor.

3. The Contractor shall have no claim against the Department for additional costs or delays resulting from the rejection of a VECP, including but not limited to, “VECP Concept” acceptance, engineering and development costs, loss of anticipated profits, increased material or labor costs.

4. The Department will determine if a Proposal qualifies for consideration and evaluation. It may reject any Proposal that requires excessive time or costs for review, evaluation, and/or investigations, or that is not consistent with the Department's design policies and criteria for the project.

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5. The Engineer will reject all or any portion of work performed under an approved VECP if unsatisfactory results are obtained. The Engineer will direct the removal of such rejected work and require construction to proceed under the original Contract requirements without reimbursement for work performed under the proposal, or for its removal. Where modifications to the VECP, other than changes to the estimated quantities, are approved to adjust to field or other conditions, reimbursement will be limited to the total amount payable for the work at the Contract bid prices as if it were constructed under the original contract requirements. The rejection or limitation of reimbursement shall not constitute the basis of any claim against the Department for delay or for other costs.
6. The proposed work shall not contain experimental features but shall be proven features that have been used under similar or acceptable conditions on other projects or locations acceptable to the Department.
7. Proposals will not be considered if equivalent options are already provided in the Contract.
8. The savings generated by the Proposal must be sufficient to warrant a review and processing.
9. A Proposal changing the type and/or thickness of the pavement structure or revising quantities simply by adjusting grades will not be considered.
10. Additional information needed to evaluate Proposals, shall be provided in a timely manner. Untimely submittals of additional information will result in rejection of the Proposal. Where design changes are proposed, the additional information could include results of field investigations and surveys, design computations, and field change sheets. The review time shall be extended by the number of days between the request by the Department for additional information and the delivery of such additional information.

(d) Payment: If the VECP is accepted, the changes and payment will be authorized by Change Order.

Reimbursement will be made as follows:

1. The changes will be incorporated into the Contract by changes in quantities or unit prices of existing pay items, by the addition of new pay items, or any combination of these methods, as appropriate. Existing pay items are the original Contract pay items and any pay items that have been added to the Contract by Supplemental Agreement on or before the date the VECP is submitted.
2. The cost of the revised work as determined from the changes will be paid as specified in the Change Order. In addition, the Department will pay the Contractor 50 percent of the actual savings to the Department as reflected by the difference between the cost of the revised work and the cost of the related

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construction required by the original Contract computed at Contract bid prices. This payment will be made upon satisfactory completion of all work under the VECP.

3. Costs for “VECP Concept” acceptance, engineering and development, design, and implementation associated with the VECP are not eligible for reimbursement.

4. Payments as designated above will be made to the Contractor. If the VECP was originated by a subcontractor, the Contractor shall be responsible for any and all payments to the subcontractor arising from the approval of the VECP.

ARKANSAS DEPARTMENT OF TRANSPORTATION

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JOB NO. 110812

UTILITY ADJUSTMENTS

Utility facilities at the approximate locations noted in Appendix A will be removed, relocated and/or adjusted in accordance with separate agreements between the Arkansas Department of Transportation and the respective utility owners.

In accordance with Subsection 105.07, Cooperation with Utilities, of the Standard Specifications, Edition of 2014, the Contractor is forewarned that such work may be underway concurrently with the work under this contract.

1. Owner –Entergy Arkansas, LLC
   Contact Jonathan Loyless, 318-669-6231, 425 W. Capitol, Little Rock, AR, 72201.

Entergy Arkansas, LLC has been issued a work order and will be coordinating with highway construction.

The utility status were based on information received from the utility companies and the most current information available at this time; therefore, the information is subject to change.

In case there is a delay beyond the information as set forth above, and should such delay necessarily cause a delay in the Contractor's prosecution of the work, an equitable extension of contract time will be granted to the Contractor. No claim for extra compensation will be allowed, however, because of such delay.

An approved Highway-Utility Agreement, a letter of commitment, or other appropriate document evidencing satisfactory arrangements for the orderly removal, relocation, and/or adjustment of separately owned utility facilities located within the limits and interfering with the construction under this contract is on file with the Arkansas Department of Transportation.

The Contractor is required to make every effort to locate buried utilities including, but not limited to, calling Arkansas One Call Center (800) 482-8998.

Approximate Utility Locations

Utility Owner	Facility Type	Location	Log Mile	Est. Comp. Date
Entergy Arkansas, LLC	Aerial Electric	Crossing	L.M. 0.731	Coordinate With Highway Construction
	Aerial Electric	Crossing	L.M. 0.824	

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

LIQUIDATED DAMAGES

As specified in the Contract, liquidated damages for this project will be as shown in the following table:

WORKING DAY PROJECTS

ORIGINAL CONTRACT AMOUNT		
FROM MORE THAN	**TO AND INCLUDING**	**RATE**
$ 0	$ 100,000	$ 140
100,000	500,000	400
500,000	1,000,000	660
1,000,000	2,000,000	800
2,000,000	5,000,000	1,380
5,000,000	10,000,000	1,800
10,000,000	15,000,000	2,620
15,000,000	20,000,000	2,720
20,000,000	30,000,000	2,940
30,000,000	----------	3,500

FIXED DATE PROJECTS

ORIGINAL CONTRACT AMOUNT		
FROM MORE THAN	**TO AND INCLUDING**	**RATE**
$ 0	$ 100,000	$ 60
100,000	500,000	80
500,000	1,000,000	220
1,000,000	2,000,000	300
2,000,000	5,000,000	420
5,000,000	10,000,000	1,000
10,000,000	15,000,000	1,200
15,000,000	20,000,000	1,300
20,000,000	30,000,000	1,400
30,000,000	----------	1,520

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

CONTRACTOR'S LICENSE

Section 102 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The third paragraph of **Subsection 102.01, Prequalification of Bidders,** is hereby deleted and the following substituted thereof:

The attention of prospective bidders is directed to Ark. Code Ann. §17-25-101 et seq., Act 150 of the 1965 Acts of Arkansas, being an "Act Regulating the Practice of Contracting in the State of Arkansas", and any subsequent amendments made thereto. When the work offered is financed in whole with State funds and is estimated to cost $50,000 or more, the prospective bidder must show evidence of its license and evidence of registration or license of its subcontractors with the Contractors Licensing Board for the State of Arkansas before being furnished with a proposal form.

The third paragraph of **Subsection 108.01, Subletting of Contract,** is hereby deleted and the following substituted thereof:

It shall be the responsibility of the Contractor to determine that all parties performing work amounting to $50,000 or more are currently licensed or registered by the Contractors Licensing Board for the State of Arkansas.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

DEPARTMENT NAME CHANGE

All references to the Arkansas State Highway and Transportation Department contained within the Standard Specifications for Highway Construction (Edition of 2014), the Qualified Products List, the Manual of Field Sampling and Testing Procedures, plan sheets, Supplemental Specifications, and all Special Provisions contained in this proposal are hereby deleted and replaced with the title of Arkansas Department of Transportation.

All references to AHTD contained within the Standard Specifications for Highway Construction (Edition of 2014), the Qualified Products List, the Manual of Field Sampling and Testing Procedures, plan sheets, Supplemental Specifications, and all Special Provisions contained in this proposal are hereby deleted and replaced with the abbreviation ARDOT.

All references to the Arkansas State Highway Commission contained within the Standard Specifications for Highway Construction (Edition of 2014), the Qualified Products List, the Manual of Field Sampling and Testing Procedures, the Standard Drawings, plan sheets, Supplemental Specifications, and all Special Provisions contained in this proposal remain in effect.

ARKANSAS DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION
ISSUANCE OF PROPOSALS

Section 102 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection 102.04(j) is hereby deleted and the following is substituted therefore:

(j) If the prospective bidder is the Contractor on a current Contract with the Commission on which Liquidated Damages are being assessed, and there are no pending time extensions warranted to remove the project from Liquidated Damages.

Subsection 102.04(k) is hereby deleted and the following is substituted therefore:

(k) If the prospective bidder has a current Contract in default.

Subsection 102.04(n) is hereby added:

(n) If the prospective bidder has an individual, as an officer/owner/partner of any firm, partnerships or corporation, that has entered into a previous or current contract with the Commission that in the Department's sole discretion, is subject to any of the reasons listed in Subsection 102.04(a)-(m).

ARKANSAS DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION
PREQUALIFICATION OF BIDDERS

Section 102 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following paragraph has been added to **Subsection 102.01**:

A contractor with common officers/owners/partners of any firm, partnerships, joint ventures, or corporations that is seeking prequalification, has been prequalified, or has entered into a previous or current contract with the Commission may have the prequalification denied, limited, or revoked for the reasons listed in Subsection 102.04(a)-(m).

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

CONTACT INFORMATION FOR MOTORIST DAMAGE CLAIMS

Section 103, AWARD AND EXECUTION OF CONTRACT, of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added as the fourth paragraph of **Subsection 103.05(b), Liability Insurance:**

Prior to beginning construction, the Contractor shall provide the Engineer with the name, phone number and e-mail address for the individual within their organization responsible for submission of claims for damages to motorists' vehicles inside the work zones. This information shall be updated annually or whenever this responsibility changes within the Contractor's organization. The information will be made available to the public on the Department's webpage.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

MAINTENANCE DURING CONSTRUCTION

Division 100 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection 105.15 is hereby modified as follows:

The first paragraph **of Subsection 105.15** is hereby deleted and the following substituted therefor:

105.15 Maintenance During Construction. The Contractor shall maintain the work during construction and until the project is accepted. For contracts containing a Flexible Beginning of Work special provision, the responsibility for maintenance by the Contractor will begin at the earlier date of the following:

- when the Contractor begins work, or
- on the date of the beginning of time charges in accordance with the Work Order if the Contractor has not commenced work.

This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces, to the end that the roadway or structures are kept in satisfactory condition at all times.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

RESTRAINING CONDITIONS

Section 107 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is hereby added after the first bullet of the first paragraph of **Subsection 107.10 Restraining Conditions (a), General**:

- Human remains, burials, and/or associated burial artifacts

The following is hereby added after the second paragraph of **Subsection 107.10 (b), Restraining Conditions Within the Right-of-Way**:

When restraining conditions under (1) and (2) below are encountered, the following provisions should be executed.

(1) If archeological sites and/or historically significant cultural resources are unexpectedly impacted or subsequently discovered during construction, the Contractor shall stop work with no ground-disturbing activities occurring within a two hundred (200)-foot radius of the location of the discovery. The Engineer shall be notified immediately, who will then notify the Environmental Division. A Department staff archeologist will inspect the discovery and determine if the established buffer radius is appropriate. The radius may be decreased or increased based on the nature of the discovery at the discretion of the archeologist. Work in the buffer radius shall not resume until the Environmental Division has provided written notification to the Engineer that construction activities can proceed.

(2) If human remains, burials, and/or associated burial artifacts are encountered during construction, the Contractor shall stop work with no ground-disturbing activities occurring within a two hundred (200)-foot radius of the location of the discovery and the location secured and protected by flagging or fencing. The human remains shall be covered with a canvas tarp and shall not be removed or collected. The Engineer shall be notified immediately, who then will notify the Environmental Division. A Department staff archeologist will inspect the remains and determine if the established buffer is appropriate. The radius may be decreased or increased based on the nature of the discovery at the discretion of the archeologist. The local law enforcement and Chief Medical Examiner will be notified by the Environmental Division. Work in the buffer radius shall not resume until the Environmental Division has provided written notification to the Engineer that construction activities can proceed.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

RESTRAINING CONDITIONS

The following is hereby added after the third sentence of the first paragraph of **Subsection 107.10 (c), Restraining Conditions Outside the Right-of-Way, (2) Non-commercially Operated Site:**

The Contractor shall limit the amount of acres submitted for an off-site location to no more than 10 acres, except for commercial areas, previously approved locations, or where previous ground disturbance exists. If a Contractor requires more than 10 acres for a proposed off-site location, the Contractor may, at no cost to the Department, acquire approval for use of the site from the State Historic Preservation Officer and a qualified archeological consultant.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

AGGREGATE BASE COURSE

Section 303 of the Standard Specifications for Highway Construction, Edition 2014, is hereby amended as follows:

The second paragraph of **Subsection 303.02, Materials** is hereby deleted and the following substituted therefor:

> The Contractor shall have the option of using any higher numbered class Aggregate Base Course than that specified, provided that payment will be for the class specified. Acceptance criteria shall be for the class specified. Different classes of Aggregate Base Course shall not be mixed in the same location.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

QUALITY CONTROL AND ACCEPTANCE

Division 300 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The first sentence of the third paragraph **Subsection 306.03 Acceptance Testing** is hereby deleted and the following substituted therefor:

> If the material being furnished is crushed stone the Department will furnish the PL, LL, and PI for the material, further tests for PL, LL, and PI are waived.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

CEMENT TREATED BASE COURSE

Division 300 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The first and second paragraph of **Subsection 307.03(b), Cement,** are hereby deleted and the following substituted therefor:

(b) Cement. Portland cement, blended cement, fly ash, and slag cement shall be from sources that are listed on the Department's Qualified Products List (QPL) in Division 500 and that have executed a certification agreement with the Department.

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SUPPLEMENTAL SPECIFICATION

CEMENT STABILIZED CRUSHED STONE BASE COURSE

Division 300 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The first and second paragraph of **Subsection 308.03(b), Cement,** are hereby deleted and the following substituted therefor:

(b) Cement. Portland cement, blended cement, fly ash, and slag cement shall be from sources that are listed on the Department's Qualified Products List (QPL) in Division 500 and that have executed a certification agreement with the Department.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

TACK COATS

Division 400 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Section 401, Prime and Tack Coats and Emulsified Asphalt in Base Course, is hereby modified as follows:

The first sentence of **Subsection 401.03(a)** is hereby deleted and the following substituted therefore:

> The surface to be treated with prime or tack coat shall be cleaned of dust, dirt, and loose or foreign material by sweeping with mechanical brooms immediately preceding the application of the prime or tack coat.

Third sentence of **Subsection 401.03(c)** is hereby deleted and the following is substituted therefore:

> No dilution beyond that which is part of the emulsification process is permitted. The tack coat shall not be diluted, cut, or otherwise thinned after receipt from the manufacturer's facility.

The fifth sentence of **Subsection 401.03(c)** is hereby deleted and the following substituted therefore:

> The rate of application shall be from 0.03 gallon to 0.05 gallon per square yard of residual asphalt as designated by the Engineer.

Section 410, Construction Requirements and Acceptance of Asphalt Concrete Plant Mix Courses, is hereby modified as follows:

The sixth paragraph of **Subsection 410.05** is hereby deleted and the following substituted therefore:

> For foreign material, or when the time lapse between courses is more than 8 hours, the earlier course shall be cleaned and given a tack coat before placing the succeeding course. When directed, the tack coat shall be applied and paid for under Section 401. If directed by the Engineer, a tack coat shall be used even though the elapsed time has been less than 8 hours.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES

Division 400 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Section 404, QUALITY CONTROL OF ASPHALT MIXTURES, is hereby modified as follows:

The fifth sentence of the second paragraph of **Subsection 404.01, Design of Asphalt Mixtures, (a) General,** is hereby deleted and the following substituted therefor:

> A mix design that has not been produced on an ARDOT project in the last two years is inactive. The Contractor may submit a passing field verification test for the inactive asphalt mix design to the Materials Division to be reactivated. Asphalt mix designs with an expiration date may remain in production if they are not inactive.

The third through fifth paragraphs of **Subsection 404.04, Quality Control of Asphalt Mixtures,** are hereby deleted and the following substituted therefor:

> The accepted mix design shall be field verified by the Contractor at the start of mix production or after an interruption of more than 120 calendar days. Production of Department approved mix designs for placement on non-ARDOT projects may be used for mix verification. The Contractor shall be allowed two attempts to verify the mix design if being placed on an ARDOT project and three attempts to verify the mix design if being placed on a non-ARDOT project. The Contractor shall notify the Engineer sufficiently in advance for Department personnel to witness all testing of this production and shall provide copies of all test results to the Department.
>
> Verification will begin with testing the plant produced mix using the aggregate proportions and asphalt binder content shown on the accepted mix design. After the first attempt of verification of the initial design, the Contractor may elect to adjust aggregate proportions to vary the accepted mix design gradations and bring the mix properties near the center of the compliance limits. If the mix is in sublot rejection, all future attempts will only be allowed on non-ARDOT projects.
>
> The mix will be verified if the test values for air voids, asphalt binder content, and VMA are within the compliance limits shown in Table 410-1, and when the accepted mix design has been produced within the gradation tolerances according to Subsection 404.04.
>
> The Contractor may request a one-time field mix design be accepted by the Engineer of Materials. The Contractor will be notified in writing if the field mix design is accepted. A field mix design allows the Contractor to use the adjusted aggregate proportions for future verification of the mix design. Cold feed adjustments will be allowed to both the initial mix design and field mix design if they do not exceed more than 10% for any single cold feed or 20% overall from the initial mix design. No individual cold feed will be allowed to be eliminated by such changes. Gradation tolerances will be based off the initial job mix formula. All cold feed adjustments exceeding the limits outlined above will require a new mix design.
>
> Once verified, the asphalt binder content shall be adjusted at the plant to obtain the optimum asphalt binder content shown on the mix design during production based on the lot average. At no time shall the asphalt binder content be adjusted in a manner to produce an asphalt binder content lower

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SUPPLEMENTAL SPECIFICATION

DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES

than the design value. Adjustments to the asphalt binder content are not allowed for control of any volumetric property. All changes to be made to the asphalt binder content must first be reported to the Engineer. If adjustments do not give the intended result, production shall be stopped, and the asphalt plant and equipment shall be recalibrated and adjusted so the asphalt binder content can be successfully obtained.

The test method ARDOT 461, (NOTE 3), and (NOTE 4) in the table of the tenth paragraph of **Subsection 404.04, Quality Control of Asphalt Mixtures,** are hereby deleted.

The thirteenth and fourteenth paragraphs of **Subsection 404.04, Quality Control of Asphalt Mixtures, NOTE 3 and NOTE 4** are hereby deleted.

The eighteenth paragraph of **Subsection 404.04, Quality Control of Asphalt Mixtures,** is hereby deleted.

The fourth and fifth sentences in the nineteenth paragraph of **Subsection 404.04, Quality Control of Asphalt Mixtures,** are hereby deleted and the following substituted therefor:

Individual aggregate cold feeds should be adjusted to bring the mix design properties near the center of compliance limits. If excessive changes are required, production will be suspended, and a new mix design shall be developed according to the applicable specifications. Excessive changes are cold feed adjustments that exceed more than 10% for any single cold feed change or 20% overall from the initial mix design. No individual cold feed will be allowed to be eliminated by such changes. All cold feed adjustments exceeding the limits outlined above will require a new mix design.

Section 410, CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES, is hereby modified as follows:

The first through third sentences in the first paragraph of **Subsection 410.09(a), General,** are hereby deleted and the following is substituted therefor:

The accepted mix design shall be verified by the Contractor at the start of mix production for that design or after an interruption of more than 120 calendar days. A maximum of 200 tons (200 metric tons) of materials may be placed on the roadway during the verification process. If the mix produced does not verify the mix design, the material placed on the roadway shall be declared a partial lot. If all verification attempts have been exhausted, a new mix design shall be required.

Section 411, ASPHALT CONCRETE COLD PLANT MIX, is hereby modified as follows:

The third sentence of **Subsection 411.05 (b), Acceptance,** is hereby amended and the following is substituted therefor:

The accepted mix design shall be field verified by the Contractor at the start of mix production or after an interruption of more than 120 calendar days.

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SUPPLEMENTAL SPECIFICATION
PERCENT AIR VOIDS FOR ACHM MIX DESIGNS

Division 400 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The fourth sentence of the first paragraph of **Subsection 404.01(b), Design Requirements,** is hereby deleted and the following substituted therefor:

The optimum asphalt content is the asphalt binder content at 3.5% air voids for all asphalt mixtures.

The first bullet of the first paragraph of **Subsection 404.01(b), Design Requirements,** is hereby deleted and the following substituted therefor:

- All binder grades for all asphalt mixtures will be designed using 3.5% air voids.

The second paragraph of **Subsection 404.01(b), Design Requirements**, is hereby deleted and substituted therefor:

All Asphalt Base and Binder Courses will be designed at a Ndes of 75 gyrations. All Asphalt Surface Courses will be designed at a Ndes of 60 gyrations.

The second sentence of the second paragraph of **Subsection 404.04, Quality Control of Asphalt Mixtures,** is hereby deleted and the following substituted therefor:

Adjustments to the accepted mix design to conform to actual production values without redesign of the mixture shall be based on production of the mixture at a target value of 3.5% air voids in all asphalt mixture specimens and an asphalt binder content not less than that specified in the accepted mix design.

The table in the tenth paragraph of **Subsection 404.04, Quality Control of Asphalt Mixture,** is hereby amended by deleting the test method ARDOT 449/449A, AASHTO T 308, and Note 4 for asphalt binder content determination and substituting ARDOT TM 483, "Test Method for Determination of Binder Content and Development of Binder and Aggregate Correction Factors by Ignition Method."

The following is hereby added after the tenth paragraph of **Subsection 404.04, Quality Control of Asphalt Mixtures**:

Ignition Ovens (Single, Multiple, and Replacement). A single ignition oven shall be used for all ignition-oven determinations performed for Acceptance on a project unless otherwise approved in writing by the Engineer.

Ignition oven requirements apply only to mixtures for which asphalt binder content or gradation is determined using ignition methods for Acceptance.

A correction factor for determining asphalt binder content and gradation using the ignition oven shall be established in accordance with ARDOT TM 483. A separate correction factor shall be developed for each JMF and for each ignition oven used. The correction factor shall be reestablished at a minimum frequency of once every 12 months.

Documentation of the established correction factor shall be submitted to the Engineer prior to the start of production. The Engineer shall be given the opportunity to witness the correction factor determination process.

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When the mass of a sample exceeds the capacity of the ignition oven or basket, the sample shall be reduced into multiple test portions using approved splitting procedures and tested in separate ignition-oven determinations using the same approved ignition oven. Asphalt binder content results shall be combined on a mass-weighted basis, and aggregate shall be recombined for gradation determinations.

Use of More than One Ignition Oven (Prior Approval). The use of more than one ignition oven may be approved in writing by the Engineer prior to the start of production for projects with high production rates, extended paving durations, or multiple simultaneous production operations. When more than one ignition oven is approved, the following shall apply:

1. Each ignition oven shall be identified and approved in writing by the Engineer prior to use.
2. A separate correction factor shall be established and documented for each approved ignition oven in accordance with ARDOT TM 483 prior to use for project testing.
3. Each approved ignition oven shall be assigned to a specific plant, production line, or testing stream and shall not be alternated based on test results.
4. Acceptance testing shall be performed using the assigned ignition oven for the applicable production stream.
5. Selection between approved ignition ovens based on test results shall not be permitted.
6. Changes to approved ignition oven assignments shall be made only with prior written approval from the Engineer.

Replacement Ignition Oven During Production. The use of a replacement ignition oven during production may be approved in writing by the Engineer only in the event of equipment failure or other unavoidable circumstances. When a replacement ignition oven is approved, the following shall apply:

1. Ignition-oven determinations intended for Acceptance shall be suspended until a correction factor is established for the replacement ignition oven.
2. A correction factor shall be established and documented for the replacement ignition oven in accordance with ARDOT TM 483 before results from the replacement ignition oven are used for Acceptance or for Department testing.
3. Once approved, the replacement ignition oven shall be used for the remainder of the project unless otherwise approved in writing by the Engineer.

Bulk Specific Gravity. When AASHTO T 166 is determined by the Department to be unsuitable, bulk specific gravity shall be determined using an automatic vacuum sealing system in accordance with AASHTO T 331. Use of AASHTO T 331 shall be permitted only when directed by the Department. Suitability shall be based on the ability to obtain reliable results in accordance with the applicable test method requirements. The vacuum sealing system shall be approved by the Engineer prior to use.

AASHTO T 275, Bulk Specific Gravity of Compacted Asphalt Mixtures Using Paraffin-Coated Specimens, shall not be permitted for use in mixture design or Acceptance testing.

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The Contractor shall furnish the Department with access to a compliant vacuum sealing system for testing when bulk specific gravity is required to be determined in accordance with AASHTO T 331, when specified by the Department. This requirement may be satisfied through the Contractor's primary laboratory or by providing additional approved equipment as necessary to ensure that testing is performed in accordance with the specified method. The Department may also perform testing using Department-owned or independently furnished equipment.

Table 405-1 of **Subsection 405.03, Materials** is hereby deleted and the following substituted therefor:

Table 405-1
Design Requirements for Asphalt Concrete Hot/Warm Mix Base Course (1½")

	Control Points
Sieve	Percent Passing (%)
1½"	100
1"	90 - 100
¾"	90 max.
No. 4	-
No. 8	15 - 41
No. 16	-
No. 30	-
No. 50	-
No. 200	0 - 6

Asphalt Binder Content	Design Value	
% Air Voids	3.5	
% VMA	11.5 - 13.0	
Minimum Water Sensitivity Ratio	80	
% Anti-strip	As Required	
Fines to Asphalt Ratio*	0.6 - 1.4	
Wheel Tracking Test	Design PG Grade	Maximum Rut
(8000 cycles, 100 psi, 64ºC)	64-22 or 67-22	0.315 in. (8.000 mm)
	70-22 or 76-22	0.197 in. (5.000 mm)

*Fines to asphalt ratio shall be defined as the percent materials passing the No. 200 sieve (expressed as a percent of total aggregate weight) divided by the effective asphalt binder content.

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PERCENT AIR VOIDS FOR ACHM MIX DESIGNS

Table 406-1 of **Subsection 406.04, Construction Requirements and Acceptance,** is hereby deleted and the following substituted therefor:

Table 406-1
Design Requirements for Asphalt Concrete Hot/Warm Mix Binder Course (1")

Sieve	Control Points Percent Passing (%)
1½"	100
1"	90 - 100
¾"	90 max.
No. 4	-
No. 8	19 - 45
No. 16	-
No. 30	-
No. 50	-
No. 200	1 - 7

Asphalt Binder Content	Design Value	
% Air Voids	3.5	
% VMA	12.5 - 14.0	
Minimum Water Sensitivity Ratio	80	
% Anti-strip	As Required	
Fines to Asphalt Ratio*	0.6 - 1.4	
Wheel Tracking Test	Design PG Grade	Maximum Rut
(8000 cycles, 100 psi, 64ºC)	64-22 or 67-22	0.315 in. (8.000 mm)
	70-22 or 76-22	0.197 in. (5.000 mm)

*Fines to asphalt ratio shall be defined as the percent materials passing the No. 200 sieve (expressed as a percent of total aggregate weight) divided by the effective asphalt binder content.

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PERCENT AIR VOIDS FOR ACHM MIX DESIGNS

Table 407-1 and Table 407-2 of **Subsection 407.04, Construction Requirements and Acceptance,** are hereby deleted and the following substituted therefor:

Table 407-1
Design Requirements for Asphalt Concrete Hot/Warm Mix Surface Course (1/2")

	Control Points
Sieve	Percent Passing (%)
¾"	100
½"	90 - 100
3/8"	90 max.
No. 8	28 - 58
No. 16	-
No. 30	-
No. 50	-
No. 200	3 - 7

Asphalt Binder Content	Design Value	
% Air Voids	3.5	
% VMA	14.5 - 16.0	
Minimum Water Sensitivity Ratio	80.0	
% Anti-strip	As Required	
Fines to Asphalt Ratio*	0.6 - 1.2	
Wheel Tracking Test	Design PG Grade	Maximum Rut
(8000 cycles, 100 psi, 64ºC)	64-22 or 67-22	0.315 in. (8.000 mm)
	70-22 or 76-22	0.197 in. (5.000 mm)

*Fines to asphalt ratio shall be defined as the percent materials passing the No. 200 sieve (expressed as a percent of total aggregate weight) divided by the effective asphalt binder content.

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PERCENT AIR VOIDS FOR ACHM MIX DESIGNS

Table 407-2
Design Requirements for Asphalt Concrete Hot Mix Surface Course (3/8")

	Control Points	
Sieve	Percent Passing (%)	
½"	100	
3/8"	90 - 100	
No. 4	90 max.	
No. 8	32 - 67	
No. 16	-	
No. 30	-	
No. 50	-	
No. 200	3 - 7	
Asphalt Binder Content	Design Value	
% Air Voids	3.5	
% VMA	15.5 - 17.0	
Minimum Water Sensitivity Ratio	80.0	
% Anti-strip	As Required	
Fines to Asphalt Ratio*	0.6 - 1.4	
Wheel Tracking Test	Design PG Grade	Maximum Rut
(8000 cycles, 100 psi, 64ºC)	64-22 or 67-22	0.315 in. (8.000 mm)
	70-22 or 76-22	0.197 in. (5.000 mm)

*Fines to asphalt ratio shall be defined as the percent materials passing the No. 200 sieve (expressed as a percent of total aggregate weight) divided by the effective asphalt binder content.

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PERCENT AIR VOIDS FOR ACHM MIX DESIGNS

The Table 410-1 in **Subsection 410.09(b), Acceptance of the Pavement,** is hereby amended as follows:

TABLE 410-1
COMPLIANCE, PRICE REDUCTION AND REJECTION LIMITS FOR ASPHALT COURSES

Property	Compliance Limits	Price Reduction Limits	Lot Rejection Limits	Sublot Rejection Limits
Asphalt Binder Content	±0.3 from mix design value	more than ±0.3 from mix design value	more than ±0.6 from mix design value	±0.8 from mix design value
Air voids (AV)	2.5% to 4.5%	1.9% to 2.4% 4.6% to 5.0%	1.8% or less 5.1% or more	1.4% or less 5.6% or more
Voids in Mineral Aggregate (VMA)*				
Asphalt Base Course (1½")	11.0% to 13.5%	10.5% to 10.9% 13.6% to 14.0%	10.4% or less 14.1% or more	9.9% or less 14.6% or more
Asphalt Binder Course (1")	12.0% to 14.5%	11.5% to 11.9% 14.6% to 15.0%	11.4% to less 15.1 or more	10.9% or less 15.6% or more
Asphalt Surface Course (1/2")	14.0% to 16.5%	13.5% to 13.9% 16.6% to 17.0%	13.4% or less 17.1% or more	12.9% or less 17.6% or more
Asphalt Surface Course (3/8")	15.0% to 17.5%	14.5% to 14.9% 17.6% to 18.0%	14.4% or less 18.1% or more	13.9% or less 18.6% or more
Density (% of theoretical)	92.0% to 97.0%	91.0% to 91.9% 97.1 to 98.0%	90.9% or less 98.1% or more	89.9% or less** 99.1% or more
Density (% of theoretical) where minimum specified is 90.0%	90.0% to 97.0%	89.0% to 89.9% 97.1% to 98.0%	88.9% or less 98.1% or more	87.9% or less** 99.1% or more

*The values for $VMA_{(actual)}$ shall be determined by calculating the $VMA_{(effective)}$ and reducing it by the correction factor shown on the mix design.
**Subject to further evaluation, see text.

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LIQUID ANTI-STRIP ADDITIVE

Division 400 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Section 404, DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES, is hereby modified as follows:

The following is added as the last bullet following the first paragraph of **Subsection 404.01(b), Design Requirements:**

- All ACHM mixes must contain a liquid, anti-strip additive.

Section 409, MATERIALS AND EQUIPMENT FOR ASPHALT CONCRETE PLANT MIX COURSES, is hereby modified as follows:

The second paragraph of **Subsection 409.02 Asphalt Binder** is hereby deleted and the following substituted therefor:

The asphalt binder for all Asphalt Concrete Hot Mixes shall contain a heat-stable, liquid anti-strip additive. The additive shall be furnished from the Qualified Products List. The additive shall not harm the completed bituminous concrete mixture and must be compatible with the aggregate and asphalt binder supplied for the project. The anti-strip additive shall be added either by an in-line blending process just before introduction of the asphalt binder to the mixer or by blending with the asphalt binder at the asphalt binder terminal. If blended at the terminal, the bill of lading accompanying the load being delivered to the hot mix asphalt plant shall include the anti-strip manufacturer's name, product name, and quantity of all anti-strip additive included in the load.

The liquid anti-strip additive shall be added at rates as indicated below:

- For ACHM mixes where the use of an anti-strip additive is required as determined by the laboratory analysis and mix design procedures, the anti-strip additive shall be added at the rate of 0.5% to 0.75% (0.05% to 0.10% for organosilane based materials) by weight of asphalt binder as determined by the laboratory analysis and laboratory mix design procedures.
- For all other mixes, the manufacturer's recommended dosage of the additive shall be used, but the rate of liquid anti-strip additive shall not be less than 0.25% (0.05% for organosilane based materials) by weight of the asphalt binder.

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SUPPLEMENTAL SPECIFICATION

TRACKLESS TACK

Sections 401 and 403 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is hereby added after the second sentence of **Subsection 401.02 Materials:**

Trackless Tack meeting the requirements of this supplemental specification may be used as Tack Coat at no additional cost to the Department.

The following is hereby added after the fifth sentence of **Subsection 401.03(c), Application of Tack Coat:**

When Trackless Tack is used, the Contractor shall follow the manufacturer's recommendations for storage, application temperature, and application rate.

The following is hereby added as the second paragraph of **Subsection 401.06, Basis of Payment:**

If the Contractor elects to use Trackless Tack in lieu of Tack Coat, the application and payment for the material used will be measured and paid for at the contract unit price bid for Tack Coat per gallon (liter).

The following is hereby added after the second sentence of the first paragraph **Subsection 403.03, Asphalt Materials:**

The manufacturer shall submit certified test results for Trackless Tack to the Engineer.

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SUPPLEMENTAL SPECIFICATION

TRACKLESS TACK

The following is hereby added as **Subsection 403.03 (g), Trackless Tack:**

Trackless tack shall be an anionic or cationic asphalt emulsion conforming to the requirements below:

	Test Method	Min	Max
Viscosity, Saybolt Furol at 25°C SFS	AASHTO T59	20	150
Storage stability test, 24-h, %	AASHTO T59		1
Sieve test, %	AASHTO T59		0.3
Residue by distillation, %	AASHTO T59	50	
Tests on residue from distillation:			
Penetration, 25°C, 100 g, 5 s	AASHTO T59		20
*Solubility %	AASHTO T44	97.5	
*Ash Content	AASHTO T111		1
Softening Point °C	AASHTO T53	65	

*Ash Content or Solubility may be used for testing purposes of the residue from distillation.

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DESIGN OF ASPHALT MIXTURES

Section 400 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added after the first sentence of paragraph 3 **Subsection 404.01 Design of Asphalt Mixtures. (b) Design Requirements:**

Any use of recycled engine oil bottoms (REOB) or other engine oil derivatives in the manufacture or modification of a binder are strictly prohibited. Ground Tire Rubber (GTR) may be added to asphalt binder with blending of GTR into asphalt occurring only at the asphalt terminal. GTR shall be Class 80-1 ground tire rubber as defined by ASTM D5603.

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ASPHALT LABORATORY FACILITY

Division 400 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection 409.03(h), Plant Inspection, is hereby deleted and the following substituted therefor:

(h) Plant Inspection. The Engineer shall have access to all parts of the plant.

The Contractor shall provide and maintain a laboratory facility for the exclusive use of the Engineer. This facility shall be located at the plant site. The dimensions and other requirements specified herein are minimums. The facility may be built by the Contractor for the specific purposes stated. Portable structures used as lab facilities must be anchored to the ground and have adequate reinforcement to the floor to provide stability for lab equipment. It is not intended, however, to preclude the use of commercially built trailers or prefabricated buildings that may deviate in minor dimension or detail from the requirements listed but may in some features exceed these requirements and in all major respects be entirely suitable for the purpose intended. The Contractor may furnish, in lieu of a separate building, a facility having sufficient space in a building, parts of which are used for other purposes, provided that the facility furnished meets all other requirements of this subsection; is physically separated from the remainder of the building; and has an outside entrance with unrestricted access allowed and reserved for the exclusive use of the Engineer. Adequate space shall be provided for parking of at least three Department vehicles in the vicinity of the facility. The Engineer will determine the suitability of any facility furnished.

General requirements for the laboratory facility are:

- Minimum working laboratory space of 380 square feet (35.3 sq m) for building widths between 8' to 12' (2.4 to 3.7 m) or 208 square feet (19.3 sq m) with a width of 12' (3.7 m) or greater.
- Minimum designated office space of 30 square feet (2.8 sq m) shall be included in addition to the laboratory square footage.
- A ceiling height of 8' (2.4 m) or greater.
- A desk or table approximately 24" x 36" (600 mm x 900 mm), with at least two drawers, each approximately 13" x 13" x 18" (330 mm x 330 mm x 450 mm) for storing records and at least three office style rolling chairs.
- At least one door with a substantial lock and all keys placed in the possession of the Engineer. The door must be a minimum of 36" (900 mm) wide. A second entry door at the end of trailers that are greater than 30' (9.1 m) in length will be required for safety reasons.
- Access to a well-maintained restroom, with a functioning sink, within reasonable proximity to the Department laboratory facility. Portable restrooms are not acceptable.
- Floored, weatherproof, and reasonably dustproof.

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ASPHALT LABORATORY FACILITY

- Level and stable with substantial/durable structure capable of supporting required laboratory equipment. Movement in the lab shall not affect testing operations such as scale readings, etc.
- At least two glazed screened windows capable of being opened and locked only from the inside.
- Basic utility services shall be provided year-round as long as the plant is listed on the QPL. If utility services to the Department lab are voluntarily suspended at any time, the plant may be removed from the QPL.
- Equip the lab with heating and air conditioning units that maintain the ambient air temperature between 65 °F and 80 °F (18 °C and 27°C). The lab must be climate-controlled year-round.
- A work counter approximately 30" to 36" (760 to 900 mm) high with a minimum depth of 30" (760 mm). The countertop shall be metal capped with a rolled back edge of 2" (50 mm) if adjacent to the wall or other comparable durable surface. Total length of the work counter shall be approximately 35' (10.7 m) with a minimum of 12' (3.7 m) of counter length 36" (900 mm) deep.
- A minimum of 54" (1370 mm) width between parallel work counters.
- Adequate electric lights suitable for the purposes intended. At least one power outlet per every four feet of counter. At least two power outlets shall provide 220 VAC.
- An exhaust outlet with at least 3" (76 mm) inside diameter no farther than 8' (2.4 m) from the ignition oven shall be included near one of the 220 VAC outlets. Provide a surface for the ignition oven that is level, sturdy, and fireproof with at least 6" (152 mm) of clearance between the furnace and other vertical surfaces. The exhaust fumes exiting the furnace exhaust port may reach 270 °C (518 °F).
- An exhaust fan shall be installed over the equipment clean up area. The exhaust fan shall be equipped with a rheostat control and capable of exhausting in one minute a volume of air equal to the volume of the entire laboratory. The exhaust fan shall be maintained operational.
- A sink, approximately 24" (610 mm) square with a minimum depth of 9" (230 mm) with an outside drain.
- A clean water supply providing a minimum of 50 gallons (200 liters) storage capacity (or connected to a public or private water system), discharging through a faucet above the sink. A thermostat controlled hot water supply shall be provided to the laboratory sink.
- Adequate shelves and/or cabinets for storage of testing equipment that do not impede the operation of testing equipment.

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ASPHALT LABORATORY FACILITY

- A storage area for storing nuclear equipment, complete with a substantial lock and all keys to this area placed in the possession of the Engineer.
- At least one Type ABC fire extinguisher (10-pound size minimum) with up-to-date inspection tag per 300 square feet of building.
- A local access touchtone telephone line (with access to toll free telephone numbers but otherwise blocked for outgoing long-distance calls), with a landline modular jack and touchtone telephone, shall be provided in the laboratory facility for use by Department personnel.
- Reliable Broadband Internet Service shall be provided.

The Broadband Internet Service shall be provided with an Internet Protocol (IP) address which is reachable on the global Internet (public) and which is permanently assigned (static). The Contractor is not required to provide this service if an IP address which is both static and public is not available.

If this service is not available at the beginning of a project but becomes available during the life of the project, the Contractor shall provide the service immediately from the date of availability.

The data transfer rate shall be 3 megabits per second (Mbps) download and 500 kilobits per second (kbps) upload, or higher, with latency not to exceed 150 milliseconds. If the Broadband Internet Service meets all of the requirements of this specification except for the data transfer rate and/or latency, then the best performing available connection shall be provided. The Broadband Internet Service shall be provided with equipment providing a minimum of one Ethernet port.

Prior to the selection of the Broadband Internet Service provider, the Contractor shall submit to the Resident Engineer, in writing, the proposed method for providing Broadband Internet Service. The Resident Engineer shall review this submittal and respond in writing regarding the acceptability of the proposed method.

Adequate maintenance of the laboratory facility shall be required for plant inclusion on the QPL and will be included as part of the annual ACHM plant inspection. Maintenance shall include, but is not limited to, HVAC and electrical systems, and plumbing. The Resident Engineer may determine a lab is in reasonable compliance with this specification if all required testing can be accomplished with reasonable ease by the Construction Materials Inspector.

The requirements of this Supplemental Specification shall be implemented to receive the next scheduled ACHM Plant Certification. If the requirements are not met and the Resident Engineer determines the laboratory is not within reasonable compliance an ACHM Plant Certification will not be provided until all requirements are fulfilled and/or the Resident Engineer is satisfied with the conditions of the facilities.

The field laboratory for asphalt mixing plants and the utility services provided will not be paid for directly but will be considered a part of the asphalt mixing plant.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES

Section 410, Construction Requirements and Acceptance of Asphalt Concrete Plant Mix Courses, of the Standard Specifications for Highway Construction, Edition of 2014, is hereby modified as follows:

Subsection 410.10 Incentives is hereby deleted.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS

Section 410 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The fourth sentence of the first paragraph of **Subsection 410.08, Rolling and Density Requirements and Joints,** is hereby deleted and the following substituted therefor:

> The Engineer will observe the Contractor's use of an electromagnetic surface contact device that meets ASTM D7113/D7113M or the use of a nuclear density gauge to verify that the maximum densities possible are obtained.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

EVALUATION OF ACHM SUBLOT REPLACEMENT MATERIAL

Section 410 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following shall be added to the second to the last paragraph of **Subsection 410.09 (a) General:**

If the material used to replace unacceptable material is a different mix design from what was originally placed, the remaining material in the lot and the replacement material shall both be evaluated as separate partial lots.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

RECYCLED ASPHALT PAVEMENT

Division 400 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The fourth paragraph of **Subsection 416.03, Materials and Composition,** is hereby deleted and the following substituted therefor:

To ensure the "production" stockpile is distinguishable to anyone involved in the production of asphalt at the plant and no "unprocessed" materials are introduced into the process of ACHM mix manufacturing, the following shall be required for the use of Recycled Asphalt Pavement (RAP):

- RAP stockpiles should have only binder covered aggregates and therefore, there shall be no virgin aggregate or deleterious materials present in any RAP stockpile. Uncoated aggregate from asphalt plant produced material shall not be considered virgin aggregate as it applies to RAP. Plant startup and shut down materials will be considered binder covered and are allowed.

- Unprocessed RAP and processed RAP stockpiles shall be separated by distance and each stockpile signed accordingly.

- Only processed RAP shall be introduced into asphalt mixes. Processed is defined as efforts to create a uniform stockpile of material and may include, but is not limited to, crushing and/or fractionating. Use of the scalper screen on the plant does not define processed RAP.

- Processed RAP stockpiles shall be of adequate size for multiple operational days of asphalt mix production at the plant's maximum production rate. Processed RAP must be stockpiled before use in plant production. Processed RAP may not be taken from underneath the crusher and placed directly into the cold feed bins. If the crusher is feeding the processed stockpile, the loader must load the cold feed bins from the opposite end of the processed stockpile.

Quality control testing for asphalt binder content and gradation of RAP shall be the contractor's responsibility and conducted as follows:

- Tested as part of the field verification process. Field verification test results may be transferred from another ARDOT job given they are from the same mix design and were completed within 120 days of the current job's field verification process.

- Minimum of one set of tests per job for jobs that contain at least 1,000 tons of ACHM.

- One set of tests for every 10,000 tons of ACHM produced.

- The first tests on the job must be performed within the first 3 days of production on the job.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

RECYCLED ASPHALT PAVEMENT

The Contractor has the option of quality control testing while the processed stockpile is being built in lieu of testing during production. Quality control testing for asphalt binder content and gradation of RAP shall be the Contractor's responsibility and conducted as follows:

- Tested as part of the field verification process. Field verification test results may be transferred from another ARDOT job given they are from the same mix design and were completed within 120 days of the current job's field verification process.
- One set of tests for every 1,500 tons of RAP produced for each stockpile.
- The quantity of RAP being placed in the processed stockpile must be tracked.

The Contractor shall pick only one option of quality control method per processed RAP stockpile. The Engineer shall be given the opportunity to witness all testing. Test results shall be submitted to the Engineer by the next business day. The Contractor shall keep a logbook to track the consistency of the asphalt binder content and gradation.

If testing determines the properties of the RAP have deviated significantly from the mix design, as determined by the Engineer, changes to virgin binder content and/or aggregate proportions will be required before production of the ACHM continues. Once adjustments are made and the plant produced mix has the desired properties, the Contractor may request that a field mix design be accepted by the Engineer.

To create uniform, repeatable testing for RAP binder content, asphalt binder content of the RAP shall be determined using AASHTO T 308 with the specific requirements as follows:

- Sample shall be dried to a constant mass as per AASHTO T 329 using a drying temperature of 230 °F ± 9 °F.
- The ignition oven burn temperature used during the mix design process must be used for quality control. The burn temperature shall be reported on the mix design submittal.
- Asphalt Binder Content = % loss – Aggregate Correction Factor (ACF)
- An ACF for each processed RAP stockpile shall be submitted with the mix design if used. An ACF for the job mix formula shall be submitted on the mix design if used. If multiple ignition ovens are used, an ACF for each oven shall be submitted.
- Determination of the ACF may be based on regional historical data at the time of the change. This will ensure all parties involved are aware of the correction factor and therefore avoiding disagreements pertaining to manipulation/fluctuation in aggregate correction factors that could be used to adjust binder content data.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

PORTLAND CEMENT CONCRETE PAVEMENT

Division 500 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The first and second paragraph of **Subsection 501.02(a), Cement,** are hereby deleted and the following substituted therefor:

(a) Cement. Portland cement, blended cement, fly ash, and slag cement shall be from sources that are listed on the Department's Qualified Products List (QPL) in Division 500 and that have executed a certification agreement with the Department.

The first and second sentence of the third paragraph of **Subsection 501.02(a), Cement,** are hereby deleted and the following substituted therefor:

The total alkalis in the Portland cement or blended cement (Na_2O + 0.658 K_2O) shall not exceed 0.60%. The total alkali content in the cementitious material shall not exceed 5 lb/cu yd (2.4 kg/cu m).

The fifth paragraph of **Subsection 501.02(b), Fine Aggregate,** is hereby deleted.

The sixth paragraph of **Subsection 501.02(c), Coarse Aggregate,** is hereby deleted.

Subsection 501.02(f), Cement Replacements, (1) Fly Ash, is hereby deleted and the following substituted therefor:

(1) Fly Ash. Fly ash for use with Portland cement or blended cement shall comply with the requirements of AASHTO M 295, Class C or Class F. Mixing of Class C or Class F fly ashes will not be permitted.

The sixth through thirteenth paragraphs of **Subsection 501.03 Mix Design. (a), General,** are hereby deleted and the following substituted therefor:

Fly ash may be used as a partial replacement for Portland or blended cement, not exceeding 25% by weight. Substitution shall be made at the rate of one pound (kilogram) of fly ash for each pound (kilogram) of cement replaced. Fly ash will not be allowed as a substitute for high early strength cements.

Slag cement may be used as a partial replacement for Portland or blended cement, not exceeding 25% by weight. Substitution shall be made at a rate of one kilogram (pound) of slag cement for each pound (kilogram) of cement replaced. Slag cement will not be allowed as a substitute for high early strength cements. Ternary mixes (cement, fly ash, and slag cement) are not allowed.

The minimum 28-day compressive strength shall be 4000 psi (28.0 MPa) when tested according to AASHTO T 22. Test specimens will be made and cured according to AASHTO T 23 or T 126 as applicable.

The mixed concrete shall a have a uniform consistency with a slump, as determined by AASHTO T 119, not exceeding the tolerances as listed on the mix design. All admixtures shall comply with Subsection 501.02(e).

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

PORTLAND CEMENT CONCRETE PAVEMENT

Fine and coarse aggregate shall be added only in such proportion that satisfactory plasticity, workability, and consistency of the mix are maintained, with the further provision that the ratio of the fine aggregate to cement, based on dry and rodded measure, shall be not less than 1.5 nor more than 2.5.

The specified water/cement ratio shall not be exceeded, and the minimum compressive strength shall be met.

A minimum of 15 working days prior to the commencement of paving operations, the contractor shall submit to the Engineer of Materials for review and approval the following:

- Certification for the low alkali cement proposed for use OR the results of fine and coarse aggregates Potential Alkali Reactivity test (AASHTO T 303) in accordance with Options 1 or 2 of Subsection 501.02.
- A Job Mix Formula (JMF) that contains sources of all aggregates proposed for use, a composite gradation of all aggregates, and proportions of each aggregate. Individual gradations of each aggregate shall be included. The JMF may only be changed upon written approval of the Engineer. Composite gradations will be calculated using ARDOT Test Method 558.
- A completed ARDOT Concrete Mix Design Submittal form. This form is located on the Materials Division website for download.

The last sentence of the third paragraph of **Subsection 501.05(c), Measuring Materials, (1) General,** is hereby deleted and the following substituted therefor:

The load ticket shall show the following information:

1. Unique ticket number.
2. Identification of the truck.
3. Date and time of batching.
4. Total weights and/or volumes of each component.
5. Total volume of mix.
6. Total quantity of water added after batching.
7. Time of discharge.
8. ARDOT Mix Design ID

The first sentence of **Subsection 501.08, High Early Strength Concrete Pavement,** is hereby deleted and the following substituted therefor:

Cement used in High Early Strength Concrete shall conform to AASHTO M 85, Type III, AASHTO M 240, Table 3, or a Rapid Hardening Hydraulic Cement in compliance with ASTM C1600.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

WELDED WIRE REINFORCEMENT

Section 502 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The fourth paragraph of **Subsection 502.02** is hereby deleted and the following substituted therefor**:**

Welded Wire Reinforcement shall comply with AASHTO M 336.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

INCIDENTAL CONSTRUCTION

Sections 609, 611, 617, and 618 of the Standard Specifications for Highway Construction, Edition of 2014, are hereby amended as follows:

Subsection 609.02(c), Materials for Drop Inlets and Junction Boxes, is hereby deleted and the following is substituted therefor:

(c) Steel for welded steel grates and frames shall comply with ASTM A709, Grade 36 (250).

Subsection 611.02(a)(2), Materials for Pipe Underdrains, Outlet Protectors, and Covers, is hereby deleted and the following is substituted therefor:

(2) Corrugated Polyethylene Tubing. The tubing shall be the heavy duty type and shall comply with AASHTO M 252. The tubing shall have a minimum pipe stiffness of 46 psi (3.23 kg/cm^2) at 5% deflection and shall be capable of 60 percent vertical deflection in parallel plate loading without splitting or cracking when tested in accordance with ASTM D 2412.

The second sentence of **Subsection 617.02(a)(2), Materials for Steel Posts,** is hereby deleted and the following is substituted therefor:

(2) Steel Posts. The steel shall comply with ASTM A709, Grade 36 (250).

Subsection 617.02(b)(3), Materials for Terminal Anchor Posts, is hereby deleted and the following is substituted therefor:

(3) The steel anchor posts shall consist of structural shapes of the section shown on the plans, or as otherwise specified, and shall comply with ASTM A709, Grade 36 (250). The upper 15” (380 mm) of the anchor assembly shall be galvanized according to AASHTO M 111.

The third sentence of the third paragraph **Subsection 618.02(a), Posts for Guard Cable,** is hereby deleted and the following is substituted therefor:

The steel shall comply with ASTM A709, Grade 36 (250).

Subsection 618.02(d), Materials for Bolts, Nuts, and Washers, is hereby deleted and the following is substituted therefor:

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

INCIDENTAL CONSTRUCTION

(d) Bolts, Nuts, and Washers. Bolts, nuts, and washers shall conform to the plans and shall be steel complying with ASTM A 307, ASTM F3125, Grade A325, Heavy Hex, Type 1, or ASTM A449 (Heavy Hex), galvanized according to AASHTO M 232. Threads on bolts and nuts shall conform to Unified Coarse Thread Series Class 2A, ANSI B 1.1 (Metric Coarse Thread Series, ANSI B 1.13M, 6g tolerance).

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

LANE CLOSURE NOTIFICATION

Division 600 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Section 603, Maintenance of Traffic and Temporary Structures, is hereby modified as follows:

The first sentence of the third paragraph **Subsection 603.02 (d)** is hereby deleted and the following substituted therefor:

The Contractor shall provide the Engineer with a minimum of five full business days advance, written notification of any nonemergency lane closure or lane width restriction. The first full business day shall commence at midnight on the first business day following written notification to the Engineer. This advanced notification is required to allow adequate notice for the issuance of over width load permits by the Department.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES

Section 604 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is inserted after the first paragraph of Subsection 604.02(b):

Retroreflective sheeting used on traffic drums shall meet the requirements of ASTM D4956 for Type III or IV with the additional requirements for Reboundable Sheeting. Retroreflective sheeting for delineators shall comply with section 728.

Retroreflective sheeting shall be applied to a properly treated substrate with mechanical equipment and in a manner specified by the sheeting manufacturer. Sign material (substrate) shall be of sufficient thickness and stability to maintain a substantial, effective sign for the duration of the project. One splice will be allowed in retroreflective sheeting on sign blanks. "Left", "Right", "Distances", and "Ahead" will be allowed on signs as inserts. All letters and numerals on inserts shall be of the same size and series as those on the sign face.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)

Section 604 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The first paragraph of **Subsection 604.02 Materials (a) General** is hereby deleted and the following substituted therefor:

All work zone traffic control devices used on the project, including sign supports, barricades, traffic drums equipped with flashing lights, crash cushions, and impact attenuators, manufactured after December 31, 2019, shall comply with the requirements of the Manual for Assessing Safety Hardware (MASH). Such devices manufactured on or before December 31, 2019, and successfully tested to the requirements of National Cooperative Highway Research Program (NCHRP) Report 350 or the 2009 edition of MASH, may continue to be used throughout their normal service lives. The Contractor shall furnish a certification of such compliance from the manufacturer or supplier of all work zone traffic control devices prior to using the devices on the project. The certification shall state the device meets the requirements of MASH, or in the case that the device was manufactured on or before December 31, 2019, the certification shall state the device meets the requirements of NCHRP 350 or MASH. The certification shall include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments for each device. Devices shall be fabricated and installed in accordance with the plans and with the crash testing documentation provided in the FHWA approval letter which is available at:
http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/.

ARKANSAS DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION
GUARDRAIL TERMINAL (TYPE 2)

Section 617 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The third paragraph of subsection **617.01 Description** is hereby deleted and the following substituted therefor:

> The item "Guardrail Terminal (Type 2)" shall consist of furnishing and installing an acceptable crashworthy end terminal for W-beam guardrail at the locations shown in the plans or as directed by the Engineer. The guardrail terminal shall be specifically designed as a W-beam guardrail terminal, and shall provide an anchor against which the full tensile strength of the rail can be developed for downstream hits while remaining crashworthy for end-on impacts. The guardrail terminal shall satisfy the Manual for Assessing Safety Hardware (MASH) Test Level 3 (TL-3). The guardrail terminal shall be of a configuration that will be compatible with the site geometry shown on the plans. Guardrail terminals that require additional grading or require anchoring outside the limits of the site shown on the plans will be acceptable; however, the cost of any additional site work shall be included in the price bid for the particular type of guardrail terminal used. Guardrail terminals shown on the plans shall be 50 feet (15 meters) in length. Any additional length of guardrail needed to fulfill the 50 feet (15 meters) requirement shall be included in the price bid for the particular type of guardrail terminal used.

The first paragraph of subsection **617.02(f), Guardrail Terminal (Type 2),** is hereby deleted and the following substituted therefor:

> The Contractor shall furnish a certification from the manufacturer or supplier that the guardrail terminal meets the requirements of MASH Test Level 3 (TL-3). All materials shall be new. Rail elements and posts shall meet the requirements above. All steel components shall be galvanized. All parts shall be clearly identified for proper assembly and replacement.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

GUARDRAIL DELINEATORS

Division 600 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Section 617, GUARDRAIL is hereby modified as follows:

The following is hereby added as **Subsection 617.02(g) Delineators.**

Guardrail delineators shall be included on the Department's Qualified Product List (QPL).

The following is hereby added as **Subsection 617.03 (g) Delineators.**

Guardrail delineators shall be installed at 37.5' spacing maximum in tangent sections except that any individual run of guardrail shall have no less than three delineators installed. Spacing may be reduced in curves as directed by the Engineer.

Guardrail delineators shall have a minimum reflective area of 8.0 sq. in. per side, be made of galvanized metal with a 12-gauge minimum thickness, and be capable of being bolted to the guardrail web. The delineator shall have two (2) reflective surfaces and shall use reflective sheeting conforming to ASTM D4956 Types VIII or IX. Reflective sheeting used shall be listed on the Department's Qualified Products List (QPL) 723 Reflective Sheeting.

The following is hereby added as the last sentence of **Subsection 617.05 Basis of Payment. (a)**

Payment for the Guardrail Delineators will not be paid for separately, but full compensation therefor will be considered included in the contract unit price for Guardrail (Type ___).

ARKANSAS DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION
Mulch Cover

Section 620 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection **620.02 Materials (d)** is hereby deleted and the following substituted therefore:

(d) Mulch cover. Shall be a mulch cover system as listed on the Department's Qualified Products List (QPL) or shall consist of straw from threshed rice, oats, wheat, barley, or rye; of wood excelsior; or of hay obtained from various legumes or grasses, such as lespedeza, clover, vetch, soybeans, bermuda, carpet sedge, bahia, fescue, or other legumes or grasses; or a combination thereof. Mulch shall be dry and reasonably free from Johnson grass or other noxious weeds, and shall not be excessively brittle or in an advanced state of decomposition. All material will be inspected and approved prior to use.

The following is inserted after Subsection **620.03 Construction Requirements (c) Seeding (3) Hydro-seeding**:

(4) Mulch Cover. If a mulch cover system listed on the Department's Qualified Products List (QPL) is used then the mulch cover and the seed may be incorporated into one operation.

Subsection **620.03 Construction Requirements (d)** is hereby deleted and the following substituted therefore:

(d) Mulch Cover. If a Mulch Cover system listed on the Department's Qualified Products List (QPL) is used then refer to the application rate listed in the QPL otherwise the mulch cover shall be applied at the rate of 4000 pounds per acre (4500 kg/ha). If the mulch cover and seed are not incorporated into one operation then apply the mulch cover immediately after seeding and spread the mulch cover uniformly over the entire area by approved power mulching equipment. When approved by the Engineer, the Contractor may use hand methods to apply mulch cover to small or inaccessible areas. If the Contractor so elects, an approved mulching machine may be used, whereby the application of mulch cover and tackifier may be combined into one operation. If this method is used, no change in application rates will be allowed. In its final position, the anchored mulch shall be loose enough to allow air to circulate, but compact enough to partially shade the ground and reduce the impact of rainfall on the surface of the soil. Care shall be taken to prevent tackifier materials from discoloring or marking structures, pavements, utilities, or other plant growth. Removal of any objectionable discoloration shall be at no cost to the Department.

ARKANSAS DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION

Mulch Cover

The first paragraph of subsection **620.03 Construction Requirements (e)** is hereby deleted and the following substituted therefore:

(e) Mulch Anchoring. If a mulch cover system is selected from the Department's Qualified Products List (QPL) then no additional anchoring is needed. If a mulch cover system is not used then immediately following or during the application of mulch cover on seeded areas, the mulch shall be anchored by one of the following methods.

ARKANSAS DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION
FILTER SOCKS

Section 621 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added to **Subsection 621.01**:

(p) Filter Socks. This item shall consist of furnishing, installing, maintaining, and removing filter socks at locations indicated on the plans or as otherwise directed by the Engineer. Filter socks consist of filter media (compost or non-treated wood) encased in a three-dimensional fabric tube for the purposes of filtering silt, sediment, and other pollutants out of stormwater.

The following is added to **Subsection 621.02**:

(o) Compost or non-treated wood used for filter sock filter media shall be weed, disease, and pathogen free and derived from a clean source of woody organic matter. The media shall be free of any refuse, contaminates, or other materials toxic to plant growth. Test methods for the parameters shown in Table 621-2 should follow the recommendations provided in the AASHTO Standard Practice for Compost for Erosion and Sediment Control (R 51). Compost products must be supplied with a Seal of Testing Assurance (STA) by the U.S. Composting Council from the manufacturer. The Engineer may request a sample for approval prior to being used and materials must comply with all local, state, and federal regulations.

Table 621-2
Filter Sock Media Parameters

Parameters	Reported as (units of measure)	Test Method	Required Value
pH	pH Units	AASHTO R 51	5.0-8.5
Moisture Content	%, wet weight basis	AASHTO R 51	<60%
Organic Matter Content	%, dry weight basis	AASHTO R 51	>30%
Particle Size	% passing a selected mesh size, dry weight basis	AASHTO R 51	99% passing a 2” sieve <40% passing a 3/8” sieve
Physical Contaminates (man-made inert material)	%, dry weight basis	N/A	<1%

Filter sock containment shall be produced from 5-mil-thick continuous high density polyethylene (HDPE) filament or multi-filament polypropylene (MFPP), woven or knitted into a tubular mesh netting. Openings in the mesh shall range from $1/8^{th}$ to $3/8^{th}$ inch. This tube shall then be filled to the specified diameter of the sock with filter media which meets the specifications outlined in Table 621-2. Filter sock fabric shall have a minimum functional longevity of 9 months.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

FILTER SOCKS

Furnish filter socks with a diameter of 8-9, 12, 18, or 24 inches in diameter in variable lengths as directed by the Engineer.

Use 2" by 2" hardwood stakes of a length which will allow them to be driven at least one foot into the soil while leaving at least 3" projecting above the sock after installation. In rocky or other difficult locations steel stakes may be used if directed by the Engineer. Sandbags may be used as necessary to anchor the filter sock for installation on paved surfaces. Placement shall be as directed by the Engineer.

The following is added to **Subsection 621.03**:

(q) Trenching of filter socks is not required but woody vegetation shall be cut at ground level or otherwise removed, and uneven or rocky surfaces shall be graded or raked to ensure the socks uniformly contact the ground. The socks shall be secured with stakes driven through the center of the devices or installed as recommended by the manufacturer. For perimeter control or on slopes, stakes shall be installed on a maximum of 10 foot centers and the ends of the socks shall be directed upslope to prevent storm water from running around the end of the sock. For ditch checks and drop inlets, stakes shall be installed on a maximum of 4 foot centers. Additional stakes may be necessary as directed by the Engineer. Filter socks may be laid end to end or overlapped according to the manufacturer's directions.

Routinely maintain the socks in good condition (including staking, anchoring, etc.) Accumulated sediment shall be removed when the sediment reaches one-half the height of the sock or as directed by the Engineer. Sediment removed shall be deposited and stabilized as described in Section 110 of the Standard Specifications for Highway Construction, Edition of 2014. Repair of or complete replacement of torn or damaged socks shall be performed as required or as directed by the Engineer. Filter socks shall be carefully removed and replaced as required to facilitate construction operations.

When the required work has been completed, the area has been stabilized, and the filter socks are no longer required as approved by the Engineer, the containment material shall be cut and the core material shall be evenly distributed on the surrounding ground area. Containment shall be removed and disposed of.

The following is added to **Subsection 621.04**:

(q) Filter Socks will be measured by the linear foot (meter) complete in place; measurement will be made along the centerline of the top of the filter sock. No payment will be made for overlap. No payment will be made for additional length beyond that approved by the Engineer.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

FILTER SOCKS

The following is added to **Subsection 621.05:**

> **(q)** Filter Socks completed and accepted and measured as provided above will be paid for at the contract unit price bid per linear foot (meter) for Filter Socks, which price shall be full compensation for furnishing all materials; for installation and maintenance of filter socks; for temporarily removing and replacing filter socks as required to facilitate construction operation; for removal and disposal of the filter socks as directed; and for all labor, equipment, tools, and incidentals necessary to complete the work.

The following is added as the last Pay Item in **Subsection 621.05**:

Pay Item	**Pay Unit**
Filter Sock (___")	Linear Foot (Meter)

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

TRAFFIC CONTROL FACILITIES

Sections 712, 713, 714, 715, 728 and 730 of the Standard Specifications for Highway Construction, Edition of 2014, are hereby amended as follows:

Subsection 712.02(a) Materials for Span Wire Support Pole With Foundation is hereby deleted and the following is substituted therefor:

(a) Pole shafts shall comply with ASTM A 1011, SS, Grade 50 (345), ASTM A709, Grade 50 (345), ASTM A 595 Grade A, or ASTM A 572, Grade 50 or Grade 65. Galvanizing shall comply with AASHTO M 111, Thickness Grade 100.

Subsection 712.02(c) Materials for Span Wire Support Pole With Foundation is hereby deleted and the following is substituted therefor:

(c) Anchor base plates shall comply with ASTM A709, Grade 36 (250). Galvanizing shall comply with AASHTO M 111, Thickness Grade 100.

Subsection 712.02(e) Materials for Span Wire Support Pole With Foundation is hereby deleted and the following is substituted therefor:

(e) Hex nuts shall comply with AASHTO M 292 Grade 2H or ASTM A653 Grade 2H or ASTM A653 Grade DH or DH3 (Grade 10S or 10S3). The thread series shall correspond with that of the bolt furnished. Washers shall comply with ASTM F436. Galvanizing shall comply with AASHTO M 232 or ASTM B 695 Class 40 or 50. Nuts shall be galvanized by the same process as that of the bolts.

Subsection 712.02(f) Materials for Span Wire Support Pole With Foundation is hereby deleted and the following is substituted therefor:

(f) Concrete shall comply with Section 802 for Class S concrete. The Department will perform all acceptance sampling and testing at the frequencies shown for Contractor acceptance in Subsection 802.06. Reinforcing steel shall comply with Section 804 for Grade 60 steel.

The third paragraph of **Subsection 713.02 Materials for Span Wire Assembly** is hereby deleted and the following is substituted therefor:

Suitable cable ties shall be provided to suspend the traffic control cable at intervals not to exceed 18” (450 mm). Necessary eyebolts, washers, nuts, and fittings shall be galvanized steel complying with AASHTO M 232 or ASTM B695, Class 40 or 50.

Subsection 714.02(a) Materials for Traffic Signal Mast Arm and Pole with Foundation is hereby deleted and the following is substituted therefor:

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(a) Poles and mast arms shall be ASTM A 1011, SS, Grade 50 (345), ASTM A709, Grade 50 (345), ASTM A 595 Grade A or ASTM A 572, Grade 50 or Grade 65. Galvanizing shall comply with AASHTO M 111, Thickness Grade 100.

Subsection 714.02(c) Materials for Traffic Signal Mast Arm and Pole With Foundation is hereby deleted and the following is substituted therefor:

(c) Anchor Base Plates shall be ASTM A709, Grade 36 (250). Galvanizing shall comply with AASHTO M 111, Thickness Grade 100.

Subsection 714.02(e) Materials for Traffic Signal Mast Arm and Pole With Foundation is hereby deleted and the following is substituted therefor:

(e) Hex nuts shall comply with AASHTO M 292 Grade 2H or ASTM A563 Grade DH or DH3 (Grade 10S or 10S3). The thread series shall correspond with that of the bolt furnished. Washers shall comply with ASTM F436. Galvanizing shall comply with AASHTO M 232 or ASTM B695, Class 40 or 50. Nuts shall be galvanized by the same process as that of the bolts.

Subsection 714.02(f) Materials for Traffic Signal Mast Arm and Pole With Foundation is hereby deleted and the following is substituted therefor:

(f) Clamp Plates shall be ASTM A709, Grade 36 (250). Galvanizing shall comply with AASHTO M 111, Thickness Grade 100.

Subsection 714.02(g) Materials for Traffic Signal Mast Arm and Pole With Foundation is hereby deleted and the following is substituted therefor:

(g) Flange and Gusset Plates shall be ASTM A709, Grade 36 (250). Galvanizing shall comply with AASHTO M 111, Thickness Grade 100.

Subsection 714.02(h) Materials for Traffic Signal Mast Arm and Pole With Foundation is hereby deleted and the following is substituted therefor:

(h) Clamp and Flange Bolts shall be ASTM F3125, Grade A325, Type 1, Heavy Hex with the requirements of Annex A2. Galvanizing shall comply with AASHTO M 232 or ASTM B695, Class 40 or 50.

Subsection 714.02(i) Materials for Traffic Signal Mast Arm and Pole With Foundation is hereby deleted and the following is substituted therefor:

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(i) Concrete shall comply with Section 802 for Class S concrete. The Department will perform all acceptance sampling and testing at the frequencies shown for Contractor acceptance testing in Subsection 802.06. Reinforcing steel shall comply with Section 804 for Grade 60 steel.

Subsection 715.02(c) Materials for Traffic Signal Pedestal Pole With Foundation is hereby deleted and the following is substituted therefor:

(c) Anchor Base Plates shall be ASTM A709, Grade 36 (250). Galvanizing shall comply with AASHTO M 111, Thickness Grade 100.

Subsection 715.02(e) Materials for Traffic Signal Pedestal Pole With Foundation is hereby deleted and the following is substituted therefor:

(e) Hex nuts shall comply with AASHTO M 292 Grade 2H or ASTM F436 Grade DH or DH3 (Grade 10S or 10S3). The thread series shall correspond with that of the bolt furnished. Washers shall comply with ASTM F436. Galvanizing shall comply with AASHTO M 232 or ASTM B695, Class 40 or 50. Nuts shall be galvanized by the same process as that of the bolts.

The fifth and sixth paragraphs of **Subsection 728.02 Materials for Delineators** are hereby deleted and the following are substituted therefor:

Steel posts for bridge rail installation shall be a 1” x 1” x 3/16” (25 mm x 25 mm x 4.76 mm) angle weighing 1.61 pounds per foot (2.4 kg/m), and manufactured from ASTM A709, Grade 36. Length of post and spacing of holes shall be as shown on the plans.

All delineators posts shall be hot dip galvanized in accordance with ASTM A123 and all fabrication, including punching or drilling holes, shall be completed before the posts are galvanized.

The second and third paragraphs of **Subsection 730.02 Materials for Breakaway Sign Support** are hereby deleted and the following are substituted therefor:

All structural steel, except pipe posts but including base plates on pipe posts, and steel fuse plates, shall comply with AASHTO M 270 Grade 50. Pipe posts shall be structural steel complying with ASTM A 53 Grade B pipe. Steel bolted or welded to the primary support posts and not affecting the breakaway function, may be AASHTO M 270 Grade 36.

All high strength bolts, nuts, and washers shall comply with ASTM F3125, Grade A325, Type 1, Heavy Hex with the requirements of Annex A2.

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The third paragraph of **Subsection 730.03 Fabrication for Breakaway Sign Support** is hereby deleted and the following is substituted therefor:

All structural steel shall be galvanized after fabricating according to AASHTO M 111. All bolts, nuts, and washers shall be galvanized according to AASHTO M 232 or ASTM B695, Class 40 or 50.

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Section 723 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection 723.02(b) is hereby deleted and the following is substituted therefor:

(b) Sign Panels. Standard signs shall consist of a single sheet of aluminum alloy (ASTM B 209, Alloy 5052 H38) without stiffeners on the back. Minimum sign blank thickness shall be 0.080" (2.0 mm) for a sign size of 9 square feet (0.84 sq m) or less or 0.100" (2.5 mm) for a sign size greater than 9 square feet (0.84 sq m). Sign blanks shall be flat and straight and within commercial tolerances established by the aluminum industry.

Guide signs shall be fabricated using one piece extruded panels fabricated of aluminum alloy (ASTM B221, Alloy 6063 T6).

Extruded panel signs shall consist of sign panels; stringers or horizontal supporting members; necessary fasteners for assembling the units; reflective materials; letters; numerals; symbols; and border. All extrusions and fasteners shall be applied without causing objectionable projections on the sign face.

The one piece extruded aluminum panels shall be a minimum of 12" (300 mm) in width except one 6" (150 mm) panel may be used per sign face when necessary to construct the sign as shown on the plans.

All extruded panels shall be bolted together at every other hole (every 24" [610 mm]) with the faces and ends in alignment.

Single sheet and extruded panels to which reflective sheeting is to be applied shall be conversion coated as specified in ASTM B449 or ASTM B921 per the sheeting manufacturer's recommendations.

All fabrication, including cutting and punching of holes, excluding holes for demountable letters, numerals, symbols, and borders, shall be completed before conversion coating.

Sign panels shall be free of buckles, warp, dents, cockles, burrs, and defects resulting from fabrication. The surface of all sign panels shall be flat.

The Contractor shall submit a Certified Test Report to the Engineer covering the sign panels.

The first paragraph of **Subsection 723.02(c)** is hereby deleted and the following is substituted therefor:

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(c) Retroreflective Sheeting. The retroreflective sheeting for signs shall comply with ASTM D4956 for Type III, IV, VIII, or IX retroreflective sheeting, except that Type IX retroreflective sheeting shall be used on all W1-6, W1-8, and OM-3 signs. ASTM D4956 Type XI sheeting shall be used on all R5-1 and R5-1a signs. All retroreflective sheeting shall have either Class 1 or Class 2 backing.

Subsection 723.02(d) is hereby deleted and the following is substituted therefor:

(d) Legend. All legend, which includes letters, numerals, symbols, arrows, and border, shall have a regular outline, be clean cut and sharp, and shall have a continuous stroke and border without ragged or torn edges.

All legend on guide signs shall be of the size shown on the plans. Legend on standard signs shall comply with the latest revision of FHWA Standard Highway Signs.

The legend on freeway main lane guide signs shall be demountable. Unless otherwise specified, the legend on all other guide signs shall be manufactured using either direct application or acrylic overlay film. All other signs shall be manufactured using standard industry processes, including silk screening, acrylic overlay film, and digital printing. Digitally printed signs shall be overlaid with a clear UV film per the sheeting manufacturer's recommendation.

All demountable legend shall be of the same manufacturer. The sign area outside the corner radius shall not be trimmed to match the border radius.

Frames for border strips, corners, shields, and legend shall be fabricated from 0.063" (1.6 mm) sheet aluminum complying with the requirements of ASTM B209, Alloy 5052-H38. Mounting holes shall be provided with the frames to permit the use of screws, bolts, rivets, or other fasteners of stainless steel, galvanized steel, or aluminum to fasten the frames to the sign face, subject to the condition that dissimilar metals shall be insulated to prevent corrosion.

The aluminum frames shall comply with Subsection 723.02(b).

All border material shall be secured from the same company that furnishes the cutout letters, numerals, etc. and shall be mounted in the same manner as the cutout letters.

Transparent colors, inks, paints, and films used in the sign manufacturing process shall be of the type and quality recommended by the manufacturer of the reflective sheeting and shall conform to red, blue, yellow, and green colors approved by the FHWA and shown in the MUTCD and FHWA Standard Highway Signs. The Contractor shall provide a sheeting manufacturer's full component system warranty, and shall provide certification that the materials used shall meet all MUTCD minimum requirements for retroreflectivity and contrast for the warranty period of the sheeting.

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CHANNEL POST SIGN SUPPORT

Section 729 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following paragraph is added after the last paragraph of **Subsection 729.02 Materials**:

All posts used on the project, manufactured after December 31, 2019, shall comply with the requirements of the Manual for Assessing Safety Hardware (MASH). Such devices manufactured on or before December 31, 2019, and successfully tested to the requirements of National Cooperative Highway Research Program (NCHRP) Report 350 or the 2009 edition of MASH, may continue to be used throughout their normal service lives. The Contractor shall furnish a certification of such compliance from the manufacturer or supplier of all posts prior to using the devices on the project. The certification shall state the post meets the requirements of MASH, or in the case that the post was manufactured on or before December 31, 2019, the certification shall state the post meets the requirements of NCHRP 350 or MASH. The certification shall include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments for each device. Devices shall be fabricated and installed in accordance with the plans and with the crash testing documentation provided in the FHWA approval letter, which is available at:

http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/.

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BREAKAWAY SIGN SUPPORT

Section 730 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following paragraph is added after the last paragraph of **Subsection 730.02 Materials**:

All breakaway sign supports used on the project, manufactured after December 31, 2019, shall comply with the requirements of the Manual for Assessing Safety Hardware (MASH). Such devices manufactured on or before December 31, 2019, and successfully tested to the requirements of National Cooperative Highway Research Program (NCHRP) Report 350 or the 2009 edition of MASH, may continue to be used throughout their normal service lives. The Contractor shall furnish a certification of such compliance from the manufacturer or supplier of all devices prior to using the devices on the project. The certification shall state the device meets the requirements of MASH, or in the case that the post was manufactured on or before December 31, 2019, the certification shall state the device meets the requirements of NCHRP 350 or MASH. The certification shall include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments for each device. Devices shall be fabricated and installed in accordance with the plans and with the crash testing documentation provided in the FHWA approval letter, which is available at:

http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/.

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Sections 802, 805, 807, 809 and 817 of the Standard Specifications for Highway Construction, Edition of 2014, are hereby amended as follows:

The fifth sentence of the ninth paragraph **802.14(b), Permanent Steel Deck Forms,** is hereby deleted and the following is substituted therefor:

(b) However, welding of form supports to flanges of steels other than ASTM A709, Grade 36 (250), 50 (345), or 50W (345W) of a weldable grade, and to those portions of a flange subject to tensile stresses will not be permitted except as provided for in the plans. Welding shall be accomplished by certified welders and according to Subsection 807.26 except that 1/8" (3mm) fillet welds will be permitted.

Subsection 805.03(c) is hereby deleted and the following is substituted therefor:

(c) Unless otherwise specified, steel piles shall consist of structural shapes of the section shown on the plans and shall comply with ASTM A709, Grade 36 (250).

Subsection 807.05, Structural Steel, is hereby deleted and the following substituted therefor:

Unless otherwise specified, structural steel shall conform to the requirements of Structural Steel for Bridges, ASTM A709, except that the Charpy V-Notch Impact test requirements shall apply only to materials designated on the contract drawings as main load carrying member components. When Charpy V-Notch tests are required, the test results shall conform to the requirements specified for Zone 1 minimum service temperature.

Grade 36 (250) shall be furnished unless otherwise specified.

Steel shall be furnished according to the following specifications:

(a) Carbon Steel. Unless otherwise specified, structural carbon steel for bolted or welded construction shall conform to ASTM A709**,** Grade 36 (250). Fill or shim plates ¼" (6mm) or less in thickness used in high strength bolted connections may be ASTM A1011, SS, Grade 36 (250), Type 2, Grade 40 (275), Grade 50 (340), or Grade 55 (380) or ASTM A 1011 HSLAS, Grade 50 (340), Class 1 or Grade 55 (380), Class 1.

(b) High Strength Low-Alloy Structural Steel. High strength low alloy structural steel shall conform to ASTM A709, Grades 50 (345) or 50W (345W). Fill or shim plates ¼" (6mm) or less in thickness used in high strength bolted connections of painted bridges may be ASTM A 1011, SS, Grade 50 (340), or Grade 55 (380) or ASTM A 1011 HSLAS, Grade 50 (340), Class 1 or Grade 55 (380), Class 1.

Fill or shim plates ¼" (6mm) or less in thickness used in high strength bolted connections of unpainted weathering steel may be ASTM A 606, Type 4.

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(c) High-Yield-Strength, Quenched and Tempered Alloy Steel Plate. High yield strength, quenched and tempered alloy steel plate shall conform to ASTM A514, Grade 100 (690).

Quenched and tempered alloy steel structural shapes and seamless mechanical tubing shall meet all of the mechanical and chemical requirements of ASTM A514, Grade 100 (690), except that the specified maximum tensile strength may be 145,000 psi (1000 MPa) for seamless mechanical tubing.

(d) Structural Steel for Eyebars. Steel for eyebars shall be of a weldable quality conforming to ASTM A709, Grade 36 (250), Grade 50 (345), or Grade 50W (345W).

Subsection 807.06, High Strength Bolts, Nuts, and Washers for Structural Steel Connections, is hereby deleted and the following is substituted therefor:

(a) Specifications. High strength bolts shall be heavy hex and shall conform to the requirements of ASTM F3125, Grade A325, Heavy Hex, except as modified herein. Type 1 bolts shall be provided when used with painted structural steel or when galvanized bolts are specified. Type 3 bolts shall be provided when used with unpainted weathering structural steel. The maximum hardness of high strength bolts shall be 33 Hardness Rockwell C.

Nuts shall be heavy hex and shall conform to the requirements of ASTM A563 or AASHTO M 292. Nuts for plain, uncoated Type 1 bolts shall be Grade 2H, Grade DH or DH3. Nuts for Type 3 bolts shall be Grade DH3. Nuts for galvanized bolts shall be Grade 2H or Grade DH. When galvanized nuts are furnished, the zinc coating, overtapping, lubrication, and proof loading shall be in accordance with ASTM A563.

Washers shall conform to the requirements of ASTM F436. Where necessary, washers may be clipped on one side to a point not closer than 7/8 of the bolt diameter from the center of the washer. Beveled washers shall be used in the flanges of American Standard beams and channels. Weathering steel washers shall be used with Type 3 bolts.

When galvanized bolt assemblies are specified, the bolts, nuts, and washers shall be galvanized according to AASHTO M 232, Class C, or ASTM B695, Class 50. All components in a fastener assembly shall be galvanized by the same process.

Galvanized nuts shall be provided with a lubricant that is clean and dry to the touch. The lubricant shall contain a visible dye so that a visual check can be made for the lubricant at the time of field installation. Plain, uncoated bolts, nuts, and washers must be "oily" to the touch when installed.

(b) Required Tests. High strength fasteners, plain and galvanized, shall be subjected to a rotational capacity test according to ASTM F3125 Annex A2, and shall meet the following requirements:

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1. Go through two times the required number of turns (from snug tight conditions) indicated in Table 807-1, in a Skidmore-Wilhelm Calibrator or equivalent tension measuring device, without stripping or failure.
2. During this test, the maximum recorded tension shall be equal to or greater than 1.15 times the Minimum Bolt Tension as shown in Table 807-3.
3. The measured torque needed to produce the Minimum Bolt Tension shall not exceed the value obtained by the following equation:

$$\text{Torque} = 0.25 * P * D$$

where:
Torque = Maximum Measured Torque
(Foot-pounds [newton meter])
P = Measured Bolt Tension (pounds [kilonewtons])
D = Nominal Diameter (Feet [mm])

Proof load tests according to ASTM F606M (F606) Method 1 are required for the bolts. Wedge tests of full size bolts are required according to Section 10 of ASTM F3125. Galvanized bolts shall be wedge tested after galvanizing. Proof load tests according to ASTM A563 are required for the nuts. The proof load tests for nuts to be used with galvanized bolts shall be performed after galvanizing, overtapping, and lubricating.

The Engineer shall be furnished with a manufacturer's certification for all high strength bolts, nuts, and washers used on the project. This certification shall provide a lot number, shop order number, or other identification such that the heat number from which the items were made can be traced. This identifying number shall also appear on the sealed shipping containers. The certification shall indicate when and where all testing was done, including the rotational capacity tests, and shall include the zinc thickness when galvanized bolts, nuts, and washers are used.

Item (1) of **Subsection 807.26(b), Modification of Structural Welding Code,** is hereby deleted and the following is substituted therefor:

(1) Subparagraph 1.3.4 is modified to include:

Electroslag welding shall not be used as a welding process on bridge structures.

The first paragraph of **Subsection 807.71, High Strength Bolt Connections,** is hereby deleted and the following is substituted therefor:

(a) General. High strength bolts meeting the requirements of ASTM F3125, Grade A325, Heavy Hex, including Annex A2, shall be furnished unless otherwise specified.

Subsection 807.77, Materials (a) Inorganic Zinc-Rich Primer, is hereby deleted and the following is substituted therefor:

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(a) Inorganic Zinc-Rich Primer. The prime coat shall be an inorganic zinc-rich paint complying with the requirements of AASHTO M 300 for Type 1 or Type II.

The paint shall qualify for a Class A classification (slip coefficient of 0.33 or greater) when tested according to "Testing Methods to Determine the Slip Coefficient for Coatings used in Bolted Joints", in Appendix A of *Specification for Structural Joints Using High-Strength Bolts* as published by the Research Council on Structural Connections.

The first paragraph of **Subsection 809.02(b), Armored Joint with Neoprene Strip Seal,** is hereby deleted and the following is substituted therefor:

(b) Armored Joint with Neoprene Strip Seal. The armored joint shall consist of steel extrusions with neoprene strip seal. Steel extrusions shall conform to the requirements of ASTM A709, Grade 50W, or as specified.

Subsection 817.02(b), Steel Items, is hereby deleted and the following is substituted therefor:

(b) Steel Items. Bars, plates, and structural shapes shall be of steel conforming to the requirements of ASTM A709, Grade 36 (250), except that Charpy V-Notch Impact tests are not required.

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Section 802 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The fourth paragraph of **Subsection 802.19(b)(1), Class 1, Ordinary Surface Finish,** is hereby deleted and the following is substituted therefor:

The tops of caps shall be properly finished with a steel trowel to a smooth finish at the plan elevation and shall not be deformed, recessed, or irregular. Any misalignment in the area of the bridge seat shall be corrected to form a level surface. All corrective action (including changes to the finished elevation of the concrete surface) greater than 1/8" (3 mm) must be submitted to the Engineer for review and approval.

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Division 800 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection 802.02(a), Cement, are hereby deleted and the following substituted therefor:

(a) Cement. Portland cement and blended cement shall be from sources listed on the QPL.

The total alkali content of portland, or blended cement expressed as Na2O + 0.658 K2O, shall not exceed 0.60%. The total combined alkali content of cement and Class C fly ash shall not exceed 5 lb/yd^3.

Changes in cement source shall require written approval. Cement from an approved source that produces erratic results in strength, setting time, or other performance characteristics shall not be used.

The fifth and sixth paragraph of **Subsection 802.02(b), Fine Aggregate,** is hereby deleted.

The fifth and sixth paragraph of **Subsection 802.02(c), Coarse Aggregate,** is hereby deleted.

Subsection 802.02(e), Admixtures, is hereby deleted and the following substituted therefor:

(e) Admixtures. Admixtures shall be from sources that are listed on the QPL. Admixtures will be reviewed and approved during the mix design submittal. Admixtures shall be compatible with each other, as advised by the manufacturer. The admixture dosage rate range as recommended by the manufacturer shall be used. Should the dosage rate for any admixture not yield desirable characteristics in concrete, the dosage of admixture used shall be based on test results obtained by trial batches.

Admixtures shall be added to the mixing water by means of a mechanical dispenser that will accurately meter the additive throughout the mix water cycle. The dispenser shall be constructed and connected so that the amount of admixture entering the mixing water can be readily determined.

Subsection 802.02(f), Fly Ash, is supplemented by the following:

Fly ash may replace up to 25% by weight of Portland or blended cement at a rate of one pound of fly ash for each pound of cement replaced. Fly ash shall not be substituted in high early strength mixtures. Fly ash used as a replacement shall be included in the total cementitious materials content and in the calculation of the water-to-cementitious materials ratio. Mixtures containing fly ash shall meet all applicable requirements for the specified class of concrete.

Subsection 802.02(g), Slag Cement, is supplemented by the following:

Slag cement may replace up to 25% by weight of Type I Portland cement at a rate of one pound of slag cement for each pound of cement replaced. Slag cement shall not replace blended cement and shall not be used as a replacement in high early strength or Seal concrete. Slag cement used as a replacement shall be included in the total cementitious materials content and in the calculation of the water-to-cementitious materials ratio. Mixtures containing slag cement shall meet all applicable requirements for the specified class of concrete.

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Subsection 802.04, Classes of Concrete, is amended as follows:

Class B concrete is deleted.

Class DS and Class DS-1 concrete are added for drilled shafts. The class required for each drilled shaft shall be as shown in the plans.

Subsection 802.05, Mix Design, is deleted in its entirety and the following substituted therefor:

802.05 Mix Design.

(a) General. Concrete mixtures shall be designed and prepared by the Contractor and proportioned to provide the required workability, durability, and conformity to the material properties specified in this Section. Approval of a mix design does not relieve the Contractor of responsibility for meeting production and acceptance requirements.

Concrete mixtures shall be proportioned to provide the required workability and durability for each class of concrete using the absolute volume method.

The minimum cementitious content, maximum water-to-cementitious materials ratio, required air content range, and specified minimum compressive strength shall conform to the limits shown in Table 802-1, which summarizes the requirements for each class of concrete.

Workability shall be determined by slump or slump flow, as applicable to the concrete class, in accordance with the test methods in Subsection 802.06(a). The slump or slump flow range established on the approved mix design shall govern for production and process control unless otherwise specified in the Contract.

(b) Mix Design for Class A, S, S(AE), and Seal. Concrete mixtures for these classes may be proportioned using one of the following:

(1) Standard Gradation. Aggregates shall conform to the grading requirements in Table 802-3 when tested in accordance with AASHTO T 27.

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Table 802-3
Standard Aggregate Gradation for Class A, S, S(AE) and SEAL Concrete

Sieve	Coarse aggregate, percent passing	Fine aggregate, percent passing
1½ in.	100	—
1 in.	95–100	—
1/2 in.	25–60	—
3/8 in.	—	100
No. 4	0–10	95–100
No. 8	0–5	70–95
No. 16	—	45–85
No. 30	—	20–65
No. 50	—	5–30
No. 100	—	0–5

(2) Optimized Gradation. For Class S and S(AE) concrete, the Contractor may propose a Job Mix Formula (JMF) using a combined aggregate gradation in lieu of meeting the individual standard gradations in Table 802-3. The combined gradation shall be evaluated against the Department's Tarantula Curve workability zones shown in the Contract.

The combined gradation shall be determined and reported for the 1½-inch, 1-inch, 3/4-inch, 1/2-inch, 3/8-inch, No. 4, No. 8, No. 16, No. 30, No. 50, No. 100, and No. 200 sieves. The nominal maximum aggregate size shall not exceed 1½ inches when tested in accordance with AASHTO T 27. The JMF shall identify each aggregate source and stockpile, the proportion of each aggregate in the blend, and the target combined gradation.

The Department may approve a mixture that does not fully conform to a Tarantula Curve workability zone when equivalent or superior workability and stability are demonstrated through one or more of the following:

1. Optimized paste volume management or the use of approved viscosity-modifying admixtures to control segregation and bleeding.
2. Documented field performance of an essentially identical combined gradation produced from the same aggregate sources and nominal maximum aggregate size in comparable structural placements.
3. Satisfactory results on an approved workability or segregation resistance test, demonstrating correlation with finishing quality, formwork stability, and complete form filling for the intended structural element.

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Any alternatives approved under this Subsection shall be incorporated into the Job Mix Formula (JMF) and shall govern production control and Acceptance testing.

(c) Mix Design for Drilled Shaft Concrete, Class DS and DS-1. Concrete for drilled shafts shall be proportioned to provide flowability suitable for placement by tremie or pump without mechanical vibration while resisting segregation, bleeding, and aggregate washout when placed under water or slurry.

Supplementary cementitious materials (SCMs), such as fly ash, slag cement, or other approved pozzolans, may be used as partial replacement for cement. The use of SCMs and appropriate chemical admixtures is recommended to improve workability, durability, stability, and thermal performance of drilled shaft concrete.

Coarse and fine aggregates shall conform to the gradation requirements of Table 802-4. For each mix design, the Contractor shall select and use only one of the coarse aggregate gradations shown in Table 802-4 for a given mix design. Fine aggregate shall constitute less than 50% by weight of the total aggregate.

For the purposes of Table 802-4, "Coarse Agg" refers to coarse aggregate conforming to AASHTO M 43.

Table 802-4
Gradation Requirements for Class DS and DS-1 Concrete

Sieve	Coarse Agg (M 43 No. 7) % Passing	Coarse Agg (M 43 No. 78) % Passing	Fine Agg % Passing
3/4 in.	100	100	—
1/2 in.	90–100	90–100	—
3/8 in.	40–70	40–75	100
No. 4	0–15	5–25	95–100
No. 8	0–5	0–10	70–95
No. 16	—	0–5	45–85
No. 30	—	—	20–65
No. 50	—	—	5–30
No. 100	—	—	0–5

(1) Trial Batches. Mix designs proposed by the Contractor for Class DS and DS-1 concrete shall be verified by trial batches prepared with the specific materials, including admixtures, intended for use on the project. Each trial batch shall consist of at least 3 cubic yards and shall be produced at the plant.

Trial batching shall be performed in the presence of a Department representative unless otherwise approved.

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A mix design may be approved for compressive strength when at least three trial batch cylinders meet or exceed the minimum required strength at an age from 3 through 56 days. Early-age strength results used for mix design approval shall not modify the specified Acceptance age for production concrete. Approval based on early-age strength does not relieve the Contractor of responsibility for meeting strength requirements at the specified Acceptance age.

Trial batches for drilled shaft concrete shall demonstrate compliance with the properties specified in Table 802-5 and with the compressive strength requirements specified in Table 802-1.

Trial batches shall be sampled and tested in accordance with the test methods shown in Subsection 802.06(a). Trial batch documentation shall include the certified laboratory, certified tester, material sources, batch proportions, test results, and any adjustments made during the trial batch.

Table 802-5
Class DS and DS-1 Mix Design Properties

Property	Test method	Requirement
Initial slump flow	AASHTO T 347	18–26 in.
Slump flow retention	ARDOT TM 801	Pass
Static segregation, column technique	ASTM C1610	10% maximum
Visual Stability Index	AASHTO T 351	1 maximum

Slump flow retention testing shall be performed for each trial batch. Additional slump flow retention tests shall be performed for each incremental increase of 20 °F above the ambient temperature at which the initial trial batch is tested. Testing shall simulate the highest anticipated ambient temperatures expected during concrete production and placement.

The concrete mixture shall maintain a minimum slump flow of 12 inches for the anticipated placement time identified in the approved Drilled Shaft Work Plan, plus an additional 1 hour, without visual evidence of segregation exceeding the specified limits.

Concrete mixes that do not maintain acceptable slump flow characteristics under the simulated temperature conditions shall not be approved for Drilled Shaft construction.

(d) Mix Design Submittals and Approval. Concrete shall be produced only from mix designs that have been submitted and approved by the Department in accordance with this Section. At least 15 business days prior to the start of concrete production, the Contractor shall submit all applicable test results, material certifications, and concrete mix design data to the Department for review, using the Department's Concrete Mix Design Submittal Form.

Mix designs will be reviewed for conformity with the requirements of this Section. When approved, the Department will assign an official Mix Design Identification Number. Approved mix designs are not project-specific and may be used on multiple projects, subject to compliance

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

CONCRETE FOR STRUCTURES

with the requirements of the Contract. Prior to production, the Contractor shall designate the approved mix design to be used on the project and obtain authorization for its use. Concrete shall not be produced using a mix design that has not received written approval from the Department and authorization for use on the project. Concrete produced using an unapproved or unauthorized mix design will be subject to rejection.

All admixtures proposed for use in production shall be included in the mix design submittal. Any change in materials, sources, or proportions shall require a revised submittal and written approval by the Department prior to use.

Approved mix designs shall remain on file with the Department and may be referenced for use on other projects, subject to continued compliance requirements.

The Contractor shall submit proposed slump or slump flow ranges as part of the mix design submittal. Allowable tolerances shall be established during the Department's review and approval of the mix design.

Early-age compressive strength results used to support mix design approval shall not replace Acceptance testing at the specified acceptance age unless otherwise specified in the Contract.

The existing **Table 802-1** is deleted and the following substituted therefor:

Table 802-1
Structural Concrete Class Requirements

Characteristic	**A**	**DS**	**DS-1**	**S**	**S(AE)**	**Seal**
Minimum cement content, lb per cubic yard						
Standard gradation	470	—	—	564	564	—
Optimized gradation	—	—	—	517	517	—
Drilled shaft mixture	—	658	658	—	—	—
Seal mixture	—	—	—	—	—	517
Minimum compressive strength, *f'c*, at 56 days, psi	3,000	3,500	5,000	3,500	4,000	2,100
Maximum water-to-cementitious materials ratio, *w/cm*	0.49	0.44	0.44	0.49	0.44	0.58
Air content, percent	—	—	—	—	4–8	—

The gradation and mixture types shown apply only to the indicated classes. Class S or S(AE) concrete used in prestressed concrete members shall have a minimum compressive strength of 5,000 psi at 56 days unless otherwise shown in the plans. Its maximum aggregate size shall be 1 inch.

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Subsection 802.06(a), Quality Control by the Contractor, is supplemented by the following:

The Contractor shall submit individual aggregate gradation results and, for a mixture using optimized gradation, the combined aggregate gradation calculated from those results. The initial gradation tests shall be completed and submitted to the Engineer before production of each class of concrete. During production, each aggregate stockpile shall be tested at the minimum frequency specified in this Subsection: one test per 500 cubic yards of concrete produced, with a minimum of one set of tests per bridge structure.

For concrete using standard gradation, individual aggregates shall conform to the applicable grading requirements of Table 802-3. For concrete using optimized gradation, the combined aggregate shall conform to the approved Job Mix Formula (JMF) within the limits of Table 802-6 and remain within the applicable Tarantula Curve workability zone shown in the Contract, except for a departure expressly approved as part of the JMF. Compliance with the JMF tolerances does not waive an applicable Tarantula Curve limit.

Concrete for Class DS and Class DS-1 shall conform to the gradation requirements of Table 802-5.

If a gradation test indicates noncompliance with an applicable individual aggregate limit, approved JMF tolerance, or Tarantula Curve limit, production of the affected mixture shall cease. The Contractor shall correct or replace the affected aggregate, perform the required testing, and submit passing results to the Engineer before production resumes.

Table 802-6
Percent Variation from Job Mix Formula (JMF)

Sieve size	Allowable variation in percent passing
No. 4 and larger	±5 percentage points
No. 8 through No. 30	±4 percentage points
No. 50	±3 percentage points
No. 100	±2 percentage points
No. 200, combined aggregate	3.0% maximum passing

If gradation, slump, slump flow, VSI, or air content measurements fall outside the specified tolerances, the Contractor shall immediately adjust the mixture and increase process control as necessary to regain compliance. If the Contractor fails to make timely adjustments, or if observable nonconforming concrete characteristics occur (including segregation, excessive bleeding, inadequate consolidation, or loss of workability), operations shall be suspended until corrective actions are implemented and compliance is demonstrated to the satisfaction of the Engineer.

In **Subsection 802.06(a), Quality Control by the Contractor,** the list beginning “Test procedures shall be:” and its accompanying footnotes are deleted and the following substituted therefor:

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Test procedures shall be:

Property	**Test method**
Coarse and fine aggregate gradation	AASHTO T 27(1)
Aggregate moisture content	AASHTO T 255
Concrete air content	AASHTO T 152
Concrete slump	AASHTO T 119
Concrete slump flow, when applicable	AASHTO T 347
Making and curing concrete test specimens in the field	AASHTO R 100
Concrete compressive strength	AASHTO T 22(2)

(1) A minimum of one test per aggregate stockpile per 500 cubic yards of concrete produced is required. A minimum of one set of aggregate gradation tests per bridge structure is required.
(2) A minimum of two cylinders shall be made and tested for each required strength test. The test result shall be the average of the two cylinders.

Subsection 802.06(a), Quality Control by the Contractor, is further supplemented by the following:

Air Content Monitoring for Class C Fly Ash. When Class C fly ash is used as a partial replacement for cement and its source uses powdered activated carbon to comply with EPA mercury emission requirements, the Contractor shall increase the frequency of quality control air content testing. At least one test shall be performed at the beginning of placement and thereafter at intervals not exceeding 20 cubic yards.

This increased frequency is for quality control and does not change the acceptance sampling and testing requirements of Subsection 802.06(b). The Engineer may require more frequent quality control testing when successive air content results differ by more than 1.5 percentage points or otherwise indicate instability of the air-void system.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

REINFORCING STEEL FOR STRUCTURES

Section 804 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection 804.02 Materials (b) Wire and Wire Fabric is hereby deleted and the following is substituted therefor:

(b) Wire and Welded Wire Reinforcement. Wire, when used as reinforcement in concrete, shall conform to the requirements of AASHTO M 336. For plain wire, Grade 70 shall be furnished unless otherwise specified.

Welded wire reinforcement, when used as reinforcement in concrete, shall conform to the requirements of AASHTO M 336. For welded wire reinforcement, Grade 65 shall be furnished unless otherwise specified. The type of welded wire reinforcement shall be approved by the Engineer.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

STEEL STRUCTURES

Division 800 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Section 807, Steel Structures, is hereby modified as follows:

The first paragraph **Subsection 807.02** is hereby deleted and the following substituted therefor:

All structural steel fabricators shall be certified for AISC Category SBR (Simple Steel Bridge Structures), IBR (Intermediate Steel Bridge Structures - Major), ABR (Advanced Steel Bridge Structures - Major), or CPT (Bridge Component Standard), as appropriate, except as provided herein. In addition, the fabricator shall have the appropriate Complex Coatings Endorsement (P1, P2, or P3) which qualifies them to apply complex coating systems.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

INSTALLATION OF ELASTOMERIC BEARINGS

Section 808 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The first paragraph of **Subsection 808.08** is hereby deleted and the following is substituted therefor:

808.08 Installation. Reinforced bearings shall be placed on level, uniform surfaces that are properly finished to the plan elevation and shall not be deformed, recessed, or irregular. Any misalignment in the support area of the bridge seat shall be corrected to form a level surface. All corrective action (including changes to the finished elevation of the concrete surface) greater than 1/8" (3 mm) must be submitted to the Engineer for review and approval. Reinforced bearings shall be set level in their specified position and shall have uniform bearing upon the support area. Bottom external load plates (masonry plates), when used, shall be set on unreinforced pads. Preformed fabric pads meeting the requirements of Subsection 807.15(a) may be used in lieu of unreinforced pads.

ARKANSAS DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION
ELASTOMERIC BEARINGS

Section 808 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The third and fourth paragraph of **Subsection 808.02 Materials** is hereby deleted and the following is substituted therefor:

Steel lamina shall be rolled mild steel confirming to ASTM A709, Grade 36 [250] (except that Charpy V-Notch Impact tests are not required), ASTM A 1011, SS, or HSLAS, or equivalent, shall have a minimum yield strength of 30,000 psi (205 MPa), and shall be ordered to the nominal thickness specified on the plans.

External load plates shall conform to the requirements of ASTM A709, Grade 36 (250), 50 (345), or 50W (345W) as noted on the plans, except that Charpy V-Notch Impact tests are not required.

The following is added to **Subsection 808.04 Tolerances**

(b) External load plates:
5) Relation to centerline of bearing ..... ± 1/8" (± 3 mm)

ARKANSAS
STATE HIGHWAY COMMISSION

STANDARD SPECIFICATIONS
FOR
HIGHWAY CONSTRUCTION

EDITION OF 2014

PROPOSAL DOCUMENTS
AND
SCHEDULE OF ITEMS

ARKANSAS STATE HIGHWAY COMMISSION
PROPOSAL DOCUMENTS

PROPOSAL FOR CONSTRUCTING:

THE PURPOSE OF THIS PROJECT IS TO REHABILITATE THE MISSISSIPPI RIVER BRIDGE INCLUDING DECK REPLACEMENT AND POLYMER OVERLAY ON HIGHWAY 49 IN PHILLIPS COUNTY. THIS PROJECT CONSISTS OF REMOVAL AND DISPOSAL ITEMS, STONE BACKFILL, TRENCHING AND SHOULDER PREPARATION, AGGREGATE BASE COURSE, PORTLAND CEMENT CONCRETE BASE, ACHM SURFACE COURSE, COLD MILLING ASPHALT PAVEMENT, ACHM PATCHING OF EXISTING ROADWAY, APPROACH SLABS AND GUTTERS, PORTLAND CEMENT CONCRETE PAVEMENT PATCHING, MAINTENANCE OF TRAFFIC, GUARDRAIL, GEOTEXTILE FABRIC, TRAFFIC SIGNAL ITEMS, MODIFICATION OF EXISTING BRIDGE STRUCTURE, STEEL REPAIR, LIGHTWEIGHT CONCRETE, BRIDGE JACKING, AND MISC. ITEMS.

State Highway 49, Section 11, in **PHILLIPS** County, Arkansas, in accordance with Standard Specifications for Highway Construction, Edition of 2014; the Supplemental Specifications and Special Provisions attached hereto; and the Construction Plans on file in the Office of the State Highway Commission, designated as

Job **110812** **FEDERAL AID PROJECT NHPP-PRTT-HIPBIP-0054(31)**

Job Name: **HWY. 49 MISSISSIPPI RIVER BRIDGE REHAB. (S)**

said project being approximately **1.163 miles in length.**

Proposal received until 10:00 a.m. on January 20, 2027

TO THE ARKANSAS STATE HIGHWAY COMMISSION:

Gentlemen: By submission of your bid, you agree to the following:

It is hereby certified that a careful examination has been made of the Plans, Specifications, Supplemental Specifications, Special Provisions, and Form of Contract and the site of the work throughout its whole extent. On the basis of the Plans, Specifications, Supplemental Specifications, Special Provisions, and Form of Contract, the bidder proposes to furnish all necessary machinery, equipment, tools, labor and other means of construction, and to furnish all materials as specified, in the manner and at the time prescribed, and to finish the entire project within the time hereinafter proposed. The bidder understands that the quantities of work mentioned herein are approximate only, and are subject to increase or decrease, and hereby proposes to perform all quantities of work, whether increased or decreased, in accordance with the provisions of the Specifications, and at the unit prices bid in the attached Schedule of Items.

Receipt is hereby specifically acknowledged, and complete examination expressly guaranteed of the following:

1. Standard Specifications for Highway Construction, Edition of 2014.
2. Supplemental Specifications.
3. Special Provisions.
4. Proposal Documents.
5. Schedule of Items.
6. Construction Plans.

The bidder further proposes to perform all Extra Work that may be required, on the basis provided in the Specifications, and to give such work personal attention, and to secure economical performance.

The bidder further proposes to execute the contract agreement, and to furnish satisfactory bonds within ten days after he has received notice that he has been awarded the contract. The bidder further agrees to begin work when ordered by the Engineer, or within ten days thereafter, and to complete the work **within the number of calendar days bid by the bidder in accordance with the Job Special Provision "Site Use (A+C Method)-Calendar Day Contract."**

The bidder also proposes to furnish a surety Performance bond or bonds in a sum equal to the full amount of the contract and a surety Payment bond or bonds in a sum equal to 80% of the full amount of the contract. These bonds shall not only serve to guarantee the completion of the work and payment of all bills and claims by the bidder, but also to guarantee the excellence of both workmanship and material until the work is finally accepted and the provisions of the Plans, Specifications and Special Provisions fulfilled.

The bidder shall furnish a Proposal Guaranty in the form specified in Subsection 102.09 of the Specifications, in the amount of five percent (5%) of the total amount bid, which is submitted as a guarantee of the good faith of the proposal, and that the Bidder will enter into written contract, as provided, to do the work should the award be made to him; and it is hereby agreed that if, at any time other than as provided in Subsection 102.11 of the Standard Specifications, Withdrawal/Modification of Proposals, the bidder should withdraw his proposal, or should fail to execute the contract and furnish satisfactory bonds as herein provided, if his proposal is accepted, the Arkansas State Highway Commission, in either of such events, shall be entitled and is hereby given the right to retain the Proposal Guaranty, not as a penalty, but as liquidated damages, it being understood and agreed by the bidder that the amount of the Proposal Guaranty is a reasonable sum to be fixed as liquidated damages considering the damages the Arkansas State Highway Commission will sustain in the event of the bidder's withdrawal of his proposal, or failure to execute the contract and furnish satisfactory bonds if his proposal is accepted, and said amount is herein agreed upon and fixed as liquidated damages because of the difficulty of ascertaining the exact amount of damage that may be sustained by reason of the above set out circumstances.

Arkansas Department of Transportation
Schedule of Items

State Job No.: 110812 Date Estimated: 6/24/2026

Job Name: HWY. 49 MISSISSIPPI RIVER BRIDGE REHAB. (S) Date Revised: 10/8/2026

Federal Aid Project: NHPP-PRTT-HIPBIP-0054(31)

Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
Section 01 - PROPOSAL ITEMS					
0001	202 - REMOVAL AND DISPOSAL OF CONCRETE PAVEMENT	32.000	SQYD		
0002	202 - REMOVAL AND DISPOSAL OF APPROACH SLAB AND GUTTERS	2.000	EACH		
0003	202 - REMOVAL AND DISPOSAL OF GUARDRAIL	1,604.000	LF		
0004	202 - REMOVAL AND DISPOSAL OF EXISTING CONDUIT AND CABLING	1.000	L.S.		
0005	202 - REMOVAL AND DISPOSAL OF EXISTING ITS EQUIPMENT	1.000	L.S.		
0006	202 - REMOVAL AND DISPOSAL OF EXISTING NAVIGATION LIGHTING SYSTEM	1.000	L.S.		
0007	202 - REMOVAL AND DISPOSAL OF EXISTING OBSTRUCTION LIGHTING SYSTEM	1.000	L.S.		
0008	SPSS210 - UNCLASSIFIED EXCAVATION	25.000	CUYD		
0009	SP&210 - COMPACTED EMBANKMENT	16.000	CUYD		
0010	SP&215 - TRENCHING AND SHOULDER PREPARATION	5.000	STA		
0011	SPSS303 - AGGREGATE BASE COURSE (CLASS 7)	83.000	TON		
0012	SPSS309 - PORTLAND CEMENT CONCRETE BASE (10" UNIFORM THICKNESS)	117.000	SQYD		
0013	SS&401 - TACK COAT	513.000	GAL		
0014	SPSS407 - MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	538.000	TON		
0015	SPSS407 - ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2") (MINIMUM BID $120.00)	34.000	TON		
0016	SP&412 - COLD MILLING ASPHALT PAVEMENT	4,930.000	SQYD		
0017	SPSS414 - ASPHALT CONCRETE PATCHING FOR MAINTENANCE OF TRAFFIC	5.000	TON		
0018	SPSS415 - ACHM PATCHING OF EXISTING ROADWAY	25.000	TON		
0019	SPSS504 - APPROACH SLABS	94.800	CUYD		
0020	SPSS504 - APPROACH GUTTERS	18.840	CUYD		

State Job No.: 110812 Date Estimated: 6/24/2026
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Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
0021	SPSS507 - PORTLAND CEMENT CONCRETE PAVEMENT PATCHING (9" UNIFORM THICKNESS)	32.000	SQYD		
0023	SP&602 - FURNISHING FIELD OFFICE	1.000	EACH		
0024	SPSS603 - MAINTENANCE OF TRAFFIC	1.000	L.S.		
0025	SP&603 - TRAFFIC CONTROL SUPERVISOR	1.000	L.S.		
0026	SS&604 - SIGNS	612.000	SQFT		
0027	SPSS604 - CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	4.000	EACH		
0028	SS&604 - BARRICADES	80.000	LF		
0029	SS&604 - TRAFFIC DRUMS	31.000	EACH		
0030	SS&604 - FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	5,266.000	LF		
0031	SS&604 - RELOCATING PRECAST CONCRETE BARRIER (MAX. BID 25% OF ITEM NUMBER 0030)	8,466.000	LF		
0032	604 - CONSTRUCTION PAVEMENT MARKINGS	25,297.000	LF		
0033	604 - REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	8,822.000	LF		
0034	604 - REMOVAL OF PERMANENT PAVEMENT MARKINGS	800.000	LF		
0035	SS&604 - VERTICAL PANELS	158.000	EACH		
0036	SP - MOTORIST ASSISTANCE PATROL	1.000	L.S.		
0037	SP - WRECKER SERVICE	1.000	L.S.		
0038	SP - PORTABLE CAMERA TRAILER	2.000	EACH		
0039	SP - DEVICE RELOCATION	4.000	EACH		
0040	SP - FURNISH AND INSTALL VARIABLE MESSAGE SIGN	4.000	EACH		
0041	SP - VMSS MOBILIZATION	1.000	L.S.		
0042	SP - VMSS OPERATION	36.000	MNTH		
0043	SPSS604 - WARNING SIGN ASSEMBLY WITH FLASHING BEACONS	6.000	EACH		
0044	SPSS604 - FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER (TYPE SPECIAL)	240.000	LF		
0045	SPSS604 - RELOCATING PRECAST CONCRETE BARRIER (TYPE SPECIAL)	240.000	LF		
0046	SS&617 - GUARDRAIL (TYPE A)	1,450.000	LF		

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Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
0047	SS&617 - GUARDRAIL TERMINAL (TYPE 2)	2.000	EACH		
0048	SS&617 - THRIE BEAM GUARDRAIL TERMINAL	2.000	EACH		
0049	620 - LIME	1.000	TON		
0050	620 - SEEDING	0.500	ACRE		
0051	SS&620 - MULCH COVER	1.000	ACRE		
0052	620 - WATER	61.200	MGAL		
0053	621 - TEMPORARY SEEDING	0.500	ACRE		
0054	621 - SEDIMENT REMOVAL AND DISPOSAL	12.000	CUYD		
0055	621 - ROCK DITCH CHECKS	18.000	CUYD		
0056	SS&621 - FILTER SOCK (12")	1,584.000	LF		
0057	621 - WATTLE (20")	54.000	LF		
0058	623 - SECOND SEEDING APPLICATION	0.500	ACRE		
0059	SP - EQUIPMENT CABINET, TYPE B	3.000	EACH		
0060	SP - PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED	156.000	WEEK		
0061	SP - ETHERNET SWITCH, T100 HARDENED (8-PORT)	7.000	EACH		
0062	SP - E-NET CABLE (EXTERIOR CAT 6)	1,340.000	LF		
0063	SP - CELLULAR MODEM	7.000	EACH		
0064	SP - TRAFFIC TIMER UNIT - COUNTDOWN	156.000	WEEK		
0065	SP - ROAD WEATHER INFORMATION SYSTEM	2.000	EACH		
0066	SP - PTZ CAMERA SYSTEM	16.000	EACH		
0067	SP - ELECTRICAL CONDUCTORS IN CONDUIT (3C/8, A.W.G., E.G.C.)	8,260.000	LF		
0068	SP&709 - GALVANIZED STEEL CONDUIT (2”)	8,260.000	LF		
0069	719 - THERMOPLASTIC PAVEMENT MARKING WHITE (6")	13,015.000	LF		
0070	719 - THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	12,282.000	LF		
0071	719 - THERMOPLASTIC PAVEMENT MARKING (WORDS)	2.000	EACH		
0072	719 - THERMOPLASTIC PAVEMENT MARKING (ARROWS)	4.000	EACH		
0073	721 - RAISED PAVEMENT MARKERS (TYPE II)	98.000	EACH		
0074	SP - BRIDGE POST MOUNTED SIGN SUPPORT	2.000	EACH		

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Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
0075	SS&725 - GUIDE SIGN-ROADSIDE MOUNTED (DIRECT APPLIED LEGEND)	215.000	SQFT		
0076	SP - BARRIER WALL DELINEATOR	2,080.000	EACH		
0077	SS&731 - TEMPORARY IMPACT ATTENUATION BARRIER	8.000	EACH		
0078	SS&731 - TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	16.000	EACH		
0079	SS&731 - TEMPORARY IMPACT ATTENUATION BARRIER (RELOCATION)	64.000	EACH		
0080	SP - TEMPORARY FALSEWORK (SITE NO. 1)	1.000	L.S.		
0081	SP - BRIDGE JACKING (SITE NO. 1)	1.000	L.S.		
0082	SPSS802 - CLASS S CONCRETE-BRIDGE	11.800	CUYD		
0083	SPSS802 - CLASS S(AE) CONCRETE-BRIDGE	2.500	CUYD		
0084	SP - LIGHTWEIGHT AGGREGATE CONCRETE (AE)	2,552.200	CUYD		
0085	SP&803 - CLASS 2 PROTECTIVE SURFACE TREATMENT	2,309.800	SQYD		
0086	SPSS804 - REINFORCING STEEL-ROADWAY (GRADE 60)	12,536.000	LB		
0087	SPSS804 - LCCR REINFORCING STEEL-BRIDGE (GRADE 100)	413,880.000	LB		
0088	SS&804 - EPOXY COATED REINFORCING STEEL (GRADE 60)	115,180.000	LB		
0089	SPSS807 - STRUCTURAL STEEL IN PLATE GIRDER SPANS (A709, GR. 36)	33,630.000	LB		
0090	SPSS807 - STRUCTURAL STEEL IN PLATE GIRDER SPANS (A709, GR. 50W)	3,720.000	LB		
0091	SPSS807 - STRUCTURAL STEEL IN TRUSS SPANS (A709, GR. 36)	267,350.000	LB		
0092	SPSS807 - STRUCTURAL STEEL IN TRUSS SPANS (A709, GR. 50W)	3,870.000	LB		
0093	SP - REPAIR TYPE A: FLOOR BEAM TOP FLANGE	1.000	EACH		
0094	SP - REPAIR TYPE B: FLOOR BEAM BOTTOM FLANGE	11.000	EACH		
0095	SP - REPAIR TYPE C: FLOOR BEAM WEB	10.000	EACH		
0096	SP - REPAIR TYPE D: FLOOR BEAM STIFFENER	48.000	EACH		

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Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
0097	SP - REPAIR TYPE E: STRINGER PIN AND HANGER	9.000	EACH		
0098	SP - REPAIR TYPE F: RIVET REPLACEMENTS	550.000	EACH		
0099	SP - REPAIR TYPE G: STRINGER CONNECTION ANGLE REPLACEMENT	2.000	EACH		
0100	SP - REPAIR TYPE H: CROSS BEAM REPLACEMENT	51.000	EACH		
0101	SP - CRACK ARREST HOLE	1.000	EACH		
0102	SS&808 - ELASTOMERIC BEARINGS	5,722.000	CUIN		
0103	SP - PREFORMED SILICONE JOINT	596.000	LF		
0104	SP&820 - CLEANING AND PAINTING EXISTING STRUCTURAL STEEL (TYPE II)	6,484.000	TON		
0105	SP&820 - DISPOSAL OF HAZARDOUS WASTE (SITE NO. 1)	1.000	L.S.		
0106	821 - MODIFICATION OF EXISTING BRIDGE STRUCTURE (BRIDGE NO.02899)	1.000	L.S.		
0107	SP - SHORING (SITE NO. 1)	1.000	L.S.		
0108	SP - SHORING TYPE 1: MAIN TRUSS SPANS FLOOR BEAM	1.000	L.S.		
0109	SP - SHORING TYPE 2: MAIN TRUSS SPANS WIND LOCK	1.000	L.S.		
0110	SP - SHORING TYPE 3: MAIN TRUSS SPANS STRINGER	1.000	L.S.		
0111	SP - SHORING TYPE 4: APPROACH SPANS FLOOR BEAM	1.000	L.S.		
0112	SP - SHORING TYPE 5: APPROACH SPANS WIND LOCK	1.000	L.S.		
0113	SP - BRIDGE DECK REPAIR FOR POLYMER OVERLAYS	2,923.900	SQFT		
0114	SP - POLYMER OVERLAY	16,167.000	SQYD		
0115	SP - NAVIGATION LIGHTING SYSTEM	1.000	L.S.		
0116	SP - ITS ELECTRICAL JUNCTION BOX, METALLIC (24" X 24" X 8")	22.000	EACH		
0117	SP - OBSTRUCTION LIGHTING SYSTEM	1.000	L.S.		
0118	SP - RADIO INTERCONNECT, BROADBAND, SHORT RANGE	13.000	EACH		
0119	SP - TERMINAL SERVER	1.000	EACH		

Arkansas Department of Transportation
Schedule of Items

State Job No.: 110812 Date Estimated: 6/24/2026
Job Name: HWY. 49 MISSISSIPPI RIVER BRIDGE REHAB. (S) Date Revised: 10/8/2026
Federal Aid Project: NHPP-PRTT-HIPBIP-0054(31)

Line Number	Item Code and Description	Estimated Quantity	Unit Bid Price	Price Extension
0120	SP - VIDEO MANAGEMENT SYSTEM INTEGRATION	1.000 L.S.	_____	_____

Section 01 Total: _____

Subtotal: _____

0022	601 - MOBILIZATION (UNIT BID AMOUNT MAY NOT EXCEED 5% OF SUBTOTAL)	1.000 L.S.	_____	_____

Bid Total: _____

This job requires A+C method bidding. Bidder must show total number of Calendar Days to substantially complete the specified site use work (C).

_____ Days X $10,000/Day = $_____ (C)

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO PROPOSAL

ANTI-COLLUSION AND DEBARMENT CERTIFICATION

FAILURE TO EXECUTE AND SUBMIT THIS CERTIFICATION SHALL RENDER THIS BID NONRESPONSIVE AND NOT ELIGIBLE FOR AWARD CONSIDERATION.

As a condition precedent to the acceptance of the bidding document for this project, the bidder shall file this Affidavit executed by, or on behalf of the person, firm, association, or corporation submitting the bid. The original of this Affidavit shall be filed with the Arkansas Department of Transportation **at the time proposals are submitted**.

A F F I D A V I T

I hereby certify, under penalty of perjury under the laws of the United States and/or the State of Arkansas, that the bidder listed below has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the submitted bid for this project, is not presently barred from bidding in any other jurisdiction as a result of any collusion or any other action in restraint of free competition, and that the foregoing is true and correct.

Further, that except as noted below, the bidder, or any person associated therewith in the capacity of owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the administration of Federal funds:

a. is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal, State, or Local agency;

b. has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal, State, or Local agency within the past 3 years;

c. does not have a proposed debarment pending; and

d. has not been indicted, convicted, or had an adverse civil judgment rendered by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO PROPOSAL

ANTI-COLLUSION AND DEBARMENT CERTIFICATION

FAILURE TO EXECUTE AND SUBMIT THIS CERTIFICATION SHALL RENDER THIS BID NONRESPONSIVE AND NOT ELIGIBLE FOR AWARD CONSIDERATION.

EXCEPTIONS:

APPLIED TO	INITIATING AGENCY	DATES OF ACTION

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. Providing false information may result in criminal prosecution or administrative sanctions.

Job No. _____ _____
(Name of Bidder)

F.A.P. No. _____ _____
(Signature)

_____ _____
(Date Executed) (Title of Person Signing)

The following Notary Public certification is **OPTIONAL** and may or may not be completed at the contractor's discretion.

State of _____)
County of _____)ss.

_____, being duly sworn, deposes and says that he is

_____ of _____
(Title) (Name of Bidder)
and that the above statements are true and correct.

Subscribed and Sworn to before me this _____ day of _____, 20_____.
My commission expires: _____.

_____
(Notary Public)

(NOTARY SEAL)

ARDOT.gov | Jared D. Wiley, P.E., Director

10324 Interstate 30 | P.O. Box 2261, Little Rock, AR 72203-2261
Phone: (501) 569-2000 | Voice/TTY 711 | Fax: (501) 569-2400

SUPPLEMENT TO THE PROPOSAL
CERTIFICATION FOR BOYCOTT AND ILLEGAL IMMIGRANT RESTRICTIONS

Pursuant to Arkansas law, a vendor must submit the below certifications prior to entering into a contract with a public entity for an amount as designated by the applicable laws.

1. **Israel Boycott Restriction:** For contracts valued at $1,000 or greater.
   A public entity shall not enter into a contract with a company unless the contract includes a written certification that the person or company is not currently engaged in a boycott of Israel. If at any time after signing this certification the contractor decides to engage in a boycott of Israel, the contractor must notify the contracting public entity in writing. See Arkansas Code Annotated § 25-1-503.

2. **Illegal Immigrant Restriction:** For contracts exceeding $25,000.
   No state agency may enter into or renew a public contract for services with a contractor who employs or contracts with an illegal immigrant. A contractor shall certify that it does not employ, or contract with, illegal immigrants. See Arkansas Code Annotated § 19-11-105.

3. **Energy, Fossil Fuel, Firearms, and Ammunition Industries Boycott Restriction:** For contracts valued at, or exceeding, $75,000.
   A public entity shall not enter into a contract with a company unless the contract includes a written certification that the person or company is not currently engaged in, and agrees for the duration of the contract not to engage in, a boycott of an Energy, Fossil Fuel, Firearms, or Ammunition Industry. If a company does boycott any of these industries, see Arkansas Code Annotated § 25-1-1102.

4. **Scrutinized Company Restriction:** Required with bid or proposal submission.
   A state agency shall not contract with a Scrutinized Company or a company that employs a Scrutinized Company as a subcontractor. A Scrutinized Company is a company owned in whole or with a majority ownership by the government of the People's Republic of China. A state agency shall require a company that submits a bid or proposal for a contract to certify that it is not a Scrutinized Company and does not employ a Scrutinized Company as a subcontractor. *See* Arkansas Code Annotated § 25-1-1203.

The bidder hereby agrees and certifies that it does not, and shall not for the remaining aggregate term of the contract, participate in the activities checked below:

☐ Do not boycott Israel.
☐ Do not employ illegal immigrants.
☐ Do not boycott Energy, Fossil Fuel, Firearms, or Ammunition Industries.
☐ Do not employ a Scrutinized Company as a subcontractor.

Job No.	
F.A.P. No.	
Name of Bidder	

Bidder Signature _____ Date _____

7/26/96
Rev. 12/08/14
Rev. 11/17/17

ARKANSAS DEPARTMENT OF TRANSPORTATION
SUPPLEMENT TO PROPOSAL
CERTIFICATION FOR FEDERAL-AID CONTRACTS

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

1. No Federal appropriated funds have been paid or will be paid, by or on his or her behalf, 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 any 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.

2. 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-Aid contract, the prospective contractor shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities", in accordance with its instructions. (Available from Arkansas Department of Transportation, Program Management Division.)

This Certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. This Certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 3 1, U.S. Code.

During the period of performance of the contract, the contractor and all lower tier subcontractors must file a Form-LLL at the end of each calendar year quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any previously filed disclosure form. 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 failure.

The prospective contractor also agrees by submitting his or her proposal that he or she shall require that the language of this Certification be included in all lower tier subcontracts which exceed $100,000 and that all such subcontractors shall certify and disclose accordingly.

7/26/96
Rev. 11/17/17

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO PROPOSAL

C E R T I F I C A T I O N

THIS CERTIFICATION SHALL BE COMPLETED BY THE BIDDER AS PART OF THIS PROPOSAL

The bidder ____, proposed subcontractor ____, hereby certifies that he has ____, has not ____, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that he has ____, has not ____, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

(Currently, Standard Form 100 [EEO-1] is the only report required by the Executive Orders or their implementing regulations)

Job No. _____ _____
(Company)

F.A.P. No. _____ By: _____

Date _____ _____
(Title)

NOTE: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of $10,000 or under are exempt.)

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO PROPOSAL

USE OF FOREIGN MADE UNMANNED AIRCRAFT SYSTEMS

In accordance with Office of Management and Budgets Memo M-26-02 and the American Security Drone Act, all contractors, subcontractors, or consultants utilizing a unmanned aircraft system (UAS) aircraft, flight controller, camera, or ground control station supplied by a manufacturer that is based in, or subject to the control of, a foreign adversary country, specifically the People's Republic of China, are directed to cease using the systems for activities associated with the contract pay items of Roadway Construction Control or Bridge Construction Control on federal aid projects.

Security risks have been found to exist on data collected by foreign manufactured drones and the federal government has issued restrictions on their use on federally funded projects. The use of foreign made drones may continue for applications not directly paid for by the Department, such as project update overflights, promotional or recruiting purposes, etc., but the Department strongly encourages that the overall use of foreign manufactured UAS be suspended in all contractor operations.

USE OF FOREIGN MADE UNMANNED AIRCRAFT SYSTEMS

As an authorized representative of this company, I hereby certify that any unmanned aircraft systems to be used or actually used on this federal aid project comply with the above referenced restrictions.

Job No. _____ _____
(Company)

F.A.P. No. _____ By: _____

Date _____ _____
(Title)

Rev. 7/12/04
Rev. 5/25/06
Rev. 7/12/07
Rev. 4/24/24
Rev. 10/1/25

ARKANSAS DEPARTMENT OF TRANSPORTATION
BIDDERS LIST

JOB NUMBER 110812 LETTING DATE November 4, 2026

JOB NAME HWY. 49 MISSISSIPPI RIVER BRIDGE REHAB. (S)

CONTRACTOR _____

➔ ***ENTER THE WORK CODES TO BE PERFORMED BY THE PRIME CONTRACTOR*** _____

The Department is required by 49 CFR 26.11, to create and maintain a master bidder's list of all firms attempting to participate on federally assisted projects. The Contractor shall provide the names and addresses of all subcontractors, truckers or material suppliers that bid or provided quotes on any item on the project, regardless of whether the quotes were used in preparing the proposal or not. Place an X in the box following the firm's name if DBE Contractor. Denote the firm's and annual gross receipts by checking the appropriate box. The general type of work to be performed should be indicated using the following codes; (01) removal and disposal items (including clearing and grubbing), (02) earthwork (including drainage items), (03) hauling, (04) paving (PCCP or ACHM), (05) miscellaneous concrete, (06) traffic control, (07) erosion control, (08) signals/electrical, (09) structures (includes steel suppliers), (10) material (aggregate) supplier (11) miscellaneous *items should be shown*. See https://www.census.gov/naics/ for the NAICS codes to enter in the last column. Please contact the Department's Civil Rights Division at (501) 569-2297 with any questions.

Firm Name Address/Phone	DBE	Age of Firm	Annual Gross Receipts	Type of Work (Enter Code)	NAICS code (Enter Code)
		☐ Less than 1 year ☐ 1- 3 years ☐ 4-7 years ☐ 8-10 years ☐ More than 10 years	☐ Less than $1 million ☐ $1-3 million ☐ $3-6 million ☐ $6-10 million ☐ Greater than $10 million		
		☐ Less than 1 year ☐ 1- 3 years ☐ 4-7 years ☐ 8-10 years ☐ More than 10 years	☐ Less than $1 million ☐ $1-3 million ☐ $3-6 million ☐ $6-10 million ☐ Greater than $10 million		
		☐ Less than 1 year ☐ 1- 3 years ☐ 4-7 years ☐ 8-10 years ☐ More than 10 years	☐ Less than $1 million ☐ $1-3 million ☐ $3-6 million ☐ $6-10 million ☐ Greater than $10 million		
		☐ Less than 1 year ☐ 1- 3 years ☐ 4-7 years ☐ 8-10 years ☐ More than 10 years	☐ Less than $1 million ☐ $1-3 million ☐ $3-6 million ☐ $6-10 million ☐ Greater than $10 million		
		☐ Less than 1 year ☐ 1- 3 years ☐ 4-7 years ☐ 8-10 years ☐ More than 10 years	☐ Less than $1 million ☐ $1-3 million ☐ $3-6 million ☐ $6-10 million ☐ Greater than $10 million		