020

ARKANSAS STATE HIGHWAY COMMISSION

PROPOSAL DOCUMENTS

FOR THE CONSTRUCTION OF

STATE JOB NO. **040904**

FEDERAL AID PROJECT CPFCDS-NHPP-40-1(268)

CLEAR CREEK RD. – I-40 (PHASE 1) (F)

STATE HIGHWAY **549** SECTION **6**

IN **CRAWFORD** 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 040904

ARKANSAS DEPARTMENT OF TRANSPORTATION

PROGRAM MANAGEMENT DIVISION

LITTLE ROCK, ARKANSAS

October 21, 2026

TO: Eligible Bidders – Job 040904

SUBJECT: Plan and Proposal Documents Changes

Special Provision "Site Use (A+C Method) – Calendar Day Contract" has been replaced with Special Provision "Site Use (A+B Method) – Calendar Day Contract. Accordingly, the contract time has been set at 925 calendar days. Also, Special Provision "Flexible Beginning of Work – Calendar Day Contract" has been revised to allow for a 180-day flexible beginning of work period. Various pay items, special provisions, and supplemental specifications have been added, removed and revised as shown on Pages 2 and 3 of this addendum. Plan Sheets 5, 198-201, 211-214, 242, 245, 251, 294, 512, the Supplemental Specifications and Special Provisions Listing, Proposal Document Page 2, the Proposal Schedule of Items Pages 1-10, 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

Line No.	Item Description	Previous Quantity	Revised Quantity	Unit
0012	Removal and Disposal of Concrete Slabs	0	2,412	Sq. Yd.
0072	Concrete Ditch Paving (Type B)	5,747	5,777	Sq. Yd.
0074	24” Reinforced Pipe Culverts (Class III)	1,714	1,686	L.F.
0083	24” Side Drain	560	512	L.F.
0106	Water	49,382.6	49,382.9	M. Gal.
0120	Solid Sodding	3,397	3,417	Sq.Yd.
0177	Unclassified Excavation for Structures – Roadway	7,440	5,581	Cu. Yd.
0178	Class S Concrete - Roadway	14,815.84	11,222.14	Cu. Yd.
0210	30” Reinforced Concrete Pipe Culverts (Class III) (Alternate No. 1)	0	166	L.F.
0211	30” Asphalt Coated Corrugated Steel Pipe Culverts (16 Gauge) (Alternate No. 2)	0	172	L.F.
0212	30” Aluminum Coated Corrugated Steel Pipe Culverts (16 Gauge) (Alternate No. 3)	0	172	L.F.
0213	30” Polymer Precoated Metallic Coated Corrugated Steel Pipe Culverts (16 Gauge) (Alternate No. 4)	0	172	L.F.
0214	30” High Density Polyethylene Pipe (Alternate No. 5)	0	172	L.F.
0215	30” PVC Pipe (Alternate No. 6)	0	172	L.F.
---	Removal and Disposal of Buildings	9	0	Each
---	36” Reinforced Concrete Pipe Culverts (Class III) (Alternate No. 1)	166	0	L.F.
---	36” Asphalt Coated Corrugated Steel Pipe Culverts (14 Gauge) (Alternate No. 2)	172	0	L.F.
---	36” Aluminum Coated Corrugated Steel Pipe Culverts (14 Gauge) (Alternate No. 3)	172	0	L.F.
---	36” Polymer Precoated Metallic Coated Corrugated Steel Pipe Culverts (14 Gauge) (Alternate No. 4)	172	0	L.F.
---	36” High Density Polyethylene Pipe (Alternate No. 5)	172	0	L.F.
---	36” PVC Pipe (Alternate No. 6)	172	0	L.F.

Added Special Provisions

- Pavement Smoothness for Asphalt Pavements
- Site Use (A+B Method) – Calendar Day Project
- Percent Within Limits

Removed Special Provisions

- Special Clearing Requirements
- Percent Within Limits/Pavement Smoothness (IRI)
- Portland Cement Concrete Pavement
- Class C Fly Ash in Portland Cement Concrete Pavement
- Concrete for Structures
- Site Use (A+C Method) – Calendar Day Project

Revised Special Provisions

- Flexible Beginning of Work – Calendar Day Contract
- Longitudinal Joint Densities for ACHM Surface Courses
- Price Adjustment for Fuel
- PCC Pavement Surface Smoothness (IRI)
- Maintenance of Traffic
- Automated Work Zone Information System
- Prosecution and Progress with Bid Schedule
- Prime Contractor Performance Evaluation
- Utility Adjustments

Revised Supplemental Specifications

- SS 501-3 : Portland Cement Concrete Pavement
- SS 802-5: Concrete for Structures

ADDENDUM NO. 2 – JOB 040904

ARKANSAS DEPARTMENT OF TRANSPORTATION

PROGRAM MANAGEMENT DIVISION

LITTLE ROCK, ARKANSAS

September 10, 2026

TO: Eligible Bidders – Job 040904

SUBJECT: Plan and Proposal Document Changes

An earthwork note has been removed from Sheet 202 and cross section earthwork and volume annotations have been revised. Also, several pay items have been revised as shown in the table below. Additionally, various special provisions have been added, removed, or revised as shown on Page 2 of this addendum. Plan Sheets 5, 202, 206, 211, 214, 508, 512, 514-516, 532, 536, 540, 570-573, 575, 577, 583-584, 610-611, 617-618, 623, 634, 662-663, 666, 676, 701 the Supplemental Specifications and Special Provisions Listing, the Proposal Schedule of Items Pages 1-10, 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.

Line No.	Item Description	Previous Quantity	Revised Quantity	Unit
0015	Unclassified Excavation	453,817	452,452	Cu. Yd.
0017	Compacted Embankment	1,820,162	1,851,230	Cu. Yd.
0018	Rock Fill	209,970	209,405	Cu. Yd.
0023	Aggregate in Cement Stabilized Crushed Stone Base Course	13,087	13,366	Ton
0024	Cement in Cement Stabilized Crushed Stone Base Course	835	557	Ton

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

Added Special Provisions

- Construction Delay Due to Archeological Mitigation

Revised Special Provisions

- Maintenance of Traffic
- Site Use (A+C Method) – Calendar Day Contract
- Construction In Special Flood Hazard Areas

Removed Special Provisions

- Section 404 Standard Individual Permit Requirements

ADDENDUM NO. 1 – JOB 040904

ARKANSAS DEPARTMENT OF TRANSPORTATION

PROGRAM MANAGEMENT DIVISION

LITTLE ROCK, ARKANSAS

August 19, 2026

TO: Eligible Bidders – Job 040904

SUBJECT: Plan and Proposal Documents Changes

The remainder of the proposal package and Special Provision "Delay in Right of Way Occupancy" have been added to the proposal. Additionally, Plan Sheet 4 has been revised to include standard drawing dates and Plan Sheet 5 has been revised to match the rest of the proposal documents. Plan Sheets 203, 205, 211 have been revised to show the removal of PG 64-22 Asphalt Binder and the guardrail item codes have been revised on Plan Sheet 212. The standard drawings have also been provided. You should substitute the revised sheets into your plan set and proposal documents and consider this revision 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

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 040904

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 040904
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	PRE-BID ON SITE INVESTIGATION OF SOIL CONDITIONS
JOB SP	BIDDING REQUIREMENTS AND CONDITIONS
JOB SP	MANDATORY ELECTRONIC CONTRACT
JOB SP	MANDATORY ELECTRONIC DOCUMENT SUBMITTAL
JOB SP	OFF-SITE RESTRAINING CONDITIONS FOR AMERICAN BURYING BEETLE
JOB SP	CONTRACTOR PROVIDED CULTURAL RESOURCES CLEARANCE FOR OFF-SITE LOCATIONS
JOB SP	OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS
JOB SP	ARMY CORPS RESTRAINING CONDITIONS
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	NESTING SITES OF MIGRATORY BIRDS
JOB SP	SOIL STABILIZATION
JOB SP	ROCK FILL
JOB SP	COMPACTED EMBANKMENT ZONING
JOB SP	REMOVING AND REPLACING TOPSOIL
JOB SP	TRENCHING AND SHOULDER PREPARATION FOR TEMPORARY WIDENING
JOB SP	CEMENT STABILIZED CRUSHED STONE BASE COURSE
JOB SP	DESIGN AND QUALITY CONTROL OF ASPHALT MIXTURES
JOB SP	LONGITUDINAL JOINT DENSITIES FOR ACHM SURFACE COURSES
JOB SP	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS

Arkansas Department of Transportation
Supplemental Specifications and Special Provisions Listing
State Job Number 040904

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	PRICE ADJUSTMENT FOR ASPHALT BINDER
JOB SP	DESIGN OF ASPHALT MIXTURES - AGGREGATES
JOB SP	PRICE ADJUSTMENT FOR FUEL
JOB SP	ASPHALT MIXTURES WITH PG 76-22 BINDER
JOB SP	PAVEMENT SMOOTHNESS FOR ASPHALT PAVEMENTS
JOB SP	WARM MIX ASPHALT
JOB SP	COLD MILLING - COUNTY PROPERTY
JOB SP	LONGITUDINAL TINING
JOB SP	PCC PAVEMENT SURFACE SMOOTHNESS (IRI)
JOB SP	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB SP	MAINTENANCE OF TRAFFIC
JOB SP	SPECIAL SAFETY REQUIREMENTS FOR OVERHEAD SIGNS
JOB SP	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES LEFT IN PLACE
JOB SP	FURNISHING, INSTALLING AND LEAVING IN PLACE PRECAST CONCRETE BARRIER WALL
JOB SP	TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB SP	PORTABLE CONSTRUCTION LIGHTING
JOB SP	CONSTRUCTION PROJECT INFORMATION SIGN
JOB SP	AUTOMATED WORK ZONE INFORMATION SYSTEM
JOB SP	MOBILE SPEED NOTIFICATION SYSTEM (SPECIAL)
JOB SP	CONCRETE DITCH PAVING
JOB SP	CULVERT CLEAN OUT
JOB SP	PLASTIC PIPE
JOB SP	SETTLEMENT MONITORING
JOB SP	ITS ELECTRICAL JUNCTION BOX, METALLIC
JOB SP	UNDERDRAIN FLUSHING AND INSPECTION
JOB SP	WIRE ROPE SAFETY FENCE (WRSF) SPECIFICATIONS
JOB SP	WIRE ROPE SAFETY FENCE MAINTENANCE MATERIALS
JOB SP	WRSF TRAINING WORKSHOP
JOB SP	WIRE ROPE SAFETY FENCE (POST REPAIR)
JOB SP	GEOTEXTILE FABRIC
JOB SP	CONCRETE BARRIER WALL
JOB SP	ROADWAY CONSTRUCTION CONTROL
JOB SP	ELECTRICAL CONDUCTORS-IN-CONDUIT (ROADWAY LIGHTING)
JOB SP	ELECTRICAL CONDUCTORS FOR LUMINAIRES (ROADWAY LIGHTING)
JOB SP	BRIDGE MOUNTED GALVANIZED STEEL CONDUIT SYSTEM
JOB SP	ITS NON-METALLIC CONDUIT SYSTEM
JOB SP	CONCRETE PULL BOX

Arkansas Department of Transportation
Supplemental Specifications and Special Provisions Listing
State Job Number 040904

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	FIBER OPTIC CONCRETE PULL BOX
JOB SP	HIGH MAST ILLUMINATION ASSEMBLY
JOB SP	LED ROADWAY ILLUMINATION POLE
JOB SP	HIGH MAST LUMINAIRE ELEVATED SERVICE PLATFORM
JOB SP	METAL GRATING FOR PLATFORM
JOB SP	PEDESTAL TYPE SERVICE POINT ASSEMBLY
JOB SP	ENHANCED THERMOPLASTIC PAVEMENT MARKING
JOB SP	STEEL SIGN STRUCTURES
JOB SP	WORK ZONE LAW ENFORCEMENT
JOB SP	LOCAL WORK ZONE LAW ENFORCEMENT
JOB SP	OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT
JOB SP	ARCHITECTURAL FINISH
JOB SP	TEXTURED COATING FINISH
JOB SP	RETAINING WALLS
JOB SP	TEMPORARY RETAINING WALLS
JOB SP	CONCRETE BRIDGE DECK CURING AND SURFACE TREATMENT RESTRICTIONS
JOB SP	DRILLED SHAFT FOUNDATIONS FOR STEEL SIGN STRUCTURES
JOB SP	DRILLED SHAFT FOUNDATIONS
JOB SP	NONDESTRUCTIVE TESTING OF DRILLED SHAFTS
JOB SP	NONDESTRUCTIVE TESTING OF DRILLED SHAFTS FOR STEEL SIGN STRUCTURES
JOB SP	DRIVEN PILING BY METHOD A
JOB SP	DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES
JOB SP	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES
JOB SP	SHORING FOR CULVERTS
JOB SP	PROSECUTION AND PROGRESS WITH BID SCHEDULE
JOB SP	ARCHEOLOGICAL MONITORING
JOB SP	DETAILS FOR SAFETY OF STREAM TRAFFIC
JOB SP	WATER POLLUTION CONTROL
JOB SP	PRIME CONTRACTOR PERFORMANCE EVALUATION
JOB SP	SEQUENCE OF CONSTRUCTION - ALTERNATE CONCEPTUAL PROPOSAL (ACP)
JOB SP	SITE USE (A+B METHOD) - CALENDAR DAY CONTRACT
JOB SP	PERCENT WITHIN LIMITS
JOB SP	CONSTRUCTION DELAY DUE TO ARCHEOLOGICAL MITIGATION
JOB SP	INSURANCE, CONSTRUCTION, AND FLAGGING REQUIREMENTS ON RAILROAD PROPERTY (UPRR)
JOB SP	PARTNERING REQUIREMENTS
JOB SP	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS

Arkansas Department of Transportation
Supplemental Specifications and Special Provisions Listing
State Job Number 040904

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	STORM WATER POLLUTION PREVENTION PLAN
JOB SP	DELAY IN RIGHT OF WAY OCCUPANCY
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 108-2	WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER
SS 110-1	PROTECTION OF WATER QUALITY AND WETLANDS
SS 210-1	UNCLASSIFIED EXCAVATION
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 505-1	PORTLAND CEMENT CONCRETE DRIVEWAY
SS 600-2	INCIDENTAL CONSTRUCTION
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)

Arkansas Department of Transportation
Supplemental Specifications and Special Provisions Listing
State Job Number 040904

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 605-1	CONCRETE DITCH PAVING
SS 606-1	PIPE CULVERTS FOR SIDE DRAINS
SS 617-1	GUARDRAIL TERMINAL (TYPE 2)
SS 617-2	GUARDRAIL DELINEATORS
SS 619-1	FENCES
SS 620-1	MULCH COVER
SS 621-1	FILTER SOCKS
SS 637-1	MAILBOXES
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 732-1	CRASH CUSHION
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

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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: AR20260161 05/18/2026

State: Arkansas

Construction Types: Highway

Counties: Arkansas Counties of
Crawford

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

SUAR2014-033 07/21/2014

	Rates	Fringes
TRUCK DRIVER: SEMI/TRAILER TRUCK	$ 12.50	0.00
TRUCK DRIVER: WATER TRUCK	$ 14.73	0.00
TRUCK DRIVER: LOWBOY TRUCK	$ 18.61	0.00
TRUCK DRIVER: FLATBED TRUCK	$ 21.03	0.00
TRUCK DRIVER: DUMP TRUCK	$ 16.49	0.00
TRAFFIC CONTROL: LABORER-CONES/ BARRICADES/BARRELS - SETTER/MOVER/SWEEPER	$ 12.21	0.00
TRAFFIC CONTROL: FLAGGER	$ 12.33	0.00
OPERATOR: SCREED	$ 17.30	0.00
OPERATOR: SCRAPER	$ 16.50	0.00
OPERATOR: ROLLER	$ 15.25	0.00
OPERATOR: POST DRIVER (GUARDRAIL/FENCES)	$ 16.97	0.00
OPERATOR: PAVER (ASPHALT, AGGREGATE, AND CONCRETE)	$ 21.54	0.00
OPERATOR: OILER	$ 19.29	0.00
OPERATOR: MILLING MACHINE	$ 17.73	0.00
OPERATOR: MECHANIC	$ 19.07	0.00
OPERATOR: LOADER	$ 23.68	12.36
OPERATOR: HYDROSEEDER	$ 10.79	0.00
OPERATOR: GRADER/BLADE	$ 17.00	0.00
OPERATOR: DRILL	$ 14.85	0.00
OPERATOR: CRANE	$ 25.34	0.00
OPERATOR: BULLDOZER	$ 15.83	0.00
OPERATOR: BROOM/SWEEPER	$ 12.00	0.00
OPERATOR: BOBCAT/SKID STEER/SKID LOADER	$ 16.06	0.00
OPERATOR: BACKHOE/EXCAVATOR/TRACKHOE	$ 18.42	0.00
OPERATOR: ASPHALT SPREADER	$ 15.80	0.00
LABORER: PIPELAYER	$ 14.33	0.00
LABORER: MASON TENDER - CEMENT/CONCRETE	$ 13.08	0.00
LABORER: COMMON OR GENERAL	$ 10.83	0.00
LABORER: ASPHALT, INCLUDES RAKER, SHOVELER, SPREADER AND DISTRIBUTOR	$ 14.68	0.00
IRONWORKER, STRUCTURAL	$ 18.35	0.00
IRONWORKER, REINFORCING	$ 14.22	0.00
HIGHWAY/PARKING LOT STRIPING: PAINTER	$ 20.00	0.00
HIGHWAY/PARKING LOT STRIPING: OPERATOR (STRIPING MACHINE)	$ 13.25	0.00

FENCE ERECTOR.....$ 12.15 0.00
ELECTRICIAN, INCLUDES TRAFFIC SIGNALIZATION.....$ 20.40 0.00
CEMENT MASON/CONCRETE FINISHER.....$ 14.51 0.00
CARPENTER, INCLUDES FORM WORK.....$ 16.68 0.00

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

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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 040904

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 **14**. 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

SPECIAL PROVISION

JOB 040904

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB 040904

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 040904

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. 040904

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

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JOB NO. 040904

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. 040904

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. 040904

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

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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. 040904

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

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JOB NO. 040904

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™.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

DOCUMENTATION OF PAYMENTS MADE – PROMPT PAYMENT (SIGNET)

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

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. 040904

PRE-BID ON SITE INVESTIGATION OF SOIL CONDITIONS

GENERAL: In consideration of these regulations, the prospective bidder (Contractor) and the Arkansas Department of Transportation (Department) subscribe to the following agreement.

AGREEMENT:

1. The Contractor is granted permission to investigate soil conditions on site pursuant to the regulations of the Arkansas Highway Commission. The Department waives none of its powers or rights to stop or control work within the right-of-way of a state highway.

2. The Contractor shall assume full responsibility for safeguarding all utilities in the work area during the time of the investigative work. The Contractor shall notify Arkansas One-Call at 1-800-482-8998 and have utility facilities located prior to beginning work.

3. The Contractor shall perform all work in a neat and workmanlike manner, using materials acceptable to the District Engineer of the Department.

4. The Contractor shall clean up the work area and leave it in a presentable condition upon completion of the described work.

5. The Contractor shall be responsible for locating and protecting all utilities in the work area and to hold harmless and indemnify the State Highway Commission, the Department and its duly appointed agents, officers, and employees, from all damages, expenses, claims, or liability arising out of any alleged damages of any nature to any utilities due to the construction, performance, or non-performance of work.

6. The Contractor shall fully protect the traffic on the highway during the investigative work. The Contractor shall utililize proper traffic control devices in accordance with the Manual on Uniform Traffic Control Devices, and to hold harmless the Department, its officers, and employees.

7. The Contractor shall undertake measures to avoid tracking of soil and mud from the work area onto the highway and shall revegetate, in accordance with the Standard Specifications for Highway Construction, most recent edition, all areas of disturbed soil, of any size, in the work area. All projects with disturbed soil shall, if required, have an appropriate NPDES Permit as required by the Arkansas Department of Environmental Quality (501-682-0616).

8. The Contractor is not required to provide a Surety Bond for pre-bid on site investigation of soil conditions.

9. The Contractor shall maintain all existing highway, street, and county road regulatory, warning, guide, and informational signs in effective location at all times for the duration of the work and shall install them at the correct location of the work. Any signs damaged by the Contractor shall be replaced at no cost to the State.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

PRE-BID ON SITE INVESTIGATION OF SOIL CONDITIONS

10. The Contractor shall provide at least three days notice to the District Engineer before beginning any work under this agreement.

11. The Contractor shall include Department inspection personnel in all negotiations with any entity for access to the area.

12. The Contractor shall notify the District Engineer, prior to completion, and provide access for inspection to ensure any disturbed areas have been restored to like original condition.

13. The Contractor agrees that any work performed under this agreement, including all investigative work, shall be at no cost to the Department.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

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. 040904

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

BIDDING REQUIREMENTS AND CONDITIONS

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

> 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:

> 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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

BIDDING REQUIREMENTS AND CONDITIONS

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.

Subsection 102.10 is hereby deleted and the following substituted therefore:

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

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

BIDDING REQUIREMENTS AND CONDITIONS

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. 040904

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. 040904

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 040904

OFF-SITE RESTRAINING CONDITIONS FOR AMERICAN BURYING BEETLE

Section 107.10 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added to **Section 107.10(c)(2) Non-commercially Operated Site**:

DESCRIPTION: *Nicrophorus americanus,* the American Burying Beetle (ABB), is protected under the Federal Endangered Species Act and may exist within certain areas of the following counties in Arkansas: Crawford, Franklin, Johnson, Logan, Scott, Sebastian, and Yell. The Contractor shall, in all operations, make provisions to minimize any impacts to the ABB resulting from work performed on off-site areas related to this project. Required actions of the Contractor shall include, but are not limited to, the following:

CONSTRUCTION METHODS: All off-site areas located in the aforementioned counties that result in land disturbance shall require an ABB clearance in the form of either: 1) a written concurrence from the Engineer that the Contractor's actions on the off-site area are "unlikely to affect an endangered species"; **OR** 2) that consultation with the U.S. Fish and Wildlife Service (FWS) was conducted under Section 7 of the Endangered Species Act which resulted in a written concurrence on a finding of "not likely to adversely affect an endangered species". Land disturbance includes, but is not limited to; borrow/waste areas, storage areas, field offices, and any areas requiring mechanized clearing or earthwork.

Off-site areas that will result in 2.0 acres or less of cumulative land disturbance are exempt from the ABB consultation process, subject to review and clearance from the Engineer. Once an area has been approved as exempt from the consultation process, there shall be no additional acreage or sites approved that cause the cumulative land disturbance total to equal or exceed 2.0 acres of disturbance. Should the Contractor require additional acreage that causes the cumulative land disturbance to exceed 2.0 acres, they will need to consult with the FWS Ecological Services Field Office in Conway, Arkansas. Consultation may result in ABB survey requirements, the need to trap and relocate ABB's prior to use of the area, or in other measures that may delay or preclude use of the area in question.

If the site is denied based upon its potential as ABB habitat, the Contractor may then, at no cost to the Department, acquire approval for use of the site through consultation with the FWS. All clearances or permits obtained by the Contractor regarding the dismissal of the restraining conditions shall be submitted to the Engineer for approval before site preparation begins.

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 040904

CONTRACTOR PROVIDED CULTURAL RESOURCES CLEARANCE

FOR OFF-SITE LOCATIONS

DESCRIPTION. Off-site locations for the Contractor's use are necessary for highway construction activities. The area surrounding this project has a high probability for prehistoric and historic cultural resources. Therefore, the Engineer will not provide archeological and historical clearance for the off-site locations for this project. Instead, the Contractor shall utilize a professional archeologist to conduct investigations for all off-site use locations required for the project and provide clearance from the State Historic Preservation Officer (SHPO). For the purpose of this special provision, off-site locations also include any proposed haul or access roads from an off-site location to the project right of way, unless the access will be an existing public owned roadway.

Section 107.10 of the Standard Specifications for Highway Construction, Edition of 2014 is hereby amended as follows:

Subsection 107.10(a)(1) is deleted and the following is substituted therefore:

(1) Archeologically or historically significant sites may contain artifacts or the remains of prehistoric/historic people's dwelling sites. The determination of archeological or historical significance for off-site locations will be made by the Contractor in coordination with the appropriate authorities and provided to the Engineer.

Subsection 107.10(c)(2) is hereby amended by the deletion of the first bullet addressing investigation for the presence of archeologically or historically significant sites by the Department, and the following is added:

The Contractor shall notify the Engineer of location of all proposed off-site locations and get pre-approval from the Environmental Division before the Contractor proceeds with hiring a qualified consultant. After this pre-approval of the proposed off-site locations, the Contractor is responsible for hiring a consultant to carefully investigate all areas intended for use off of the right-of-way for the presence of archeologically or historically significant sites. A global position system (GPS) shall be used to clearly delineate the areas submitted for approval using UTM NAD 83 eastings and northings in meters. All archeological work carried out under this Special Provision shall be conducted by or under the direct supervision of an individual or individuals who meet the Secretary of Interior's Professional Qualification Standards (36 CFR 61). All collections and documents will meet the Curation Standards set forth in 36 CFR Part 79 and in a *State Plan for the Conservation of Archeological Resources in the State of Arkansas* (Davis 1994). The SHPO shall review the cultural resources report for approval of use for all off-site locations. The Contractor is cautioned that the initial review of these areas by the SHPO may take 30 days. Any areas that require mitigation will be at the Contractor's expense.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB 040904

CONTRACTOR PROVIDED CULTURAL RESOURCES CLEARANCE

FOR OFF-SITE LOCATIONS

A copy of all SHPO correspondence shall be submitted to the Engineer prior to Department approval for use of the off-site locations. The submittal shall include a 7.5 minute topographic quadrangle map showing the location(s) that were subject to the cultural resources survey and the area approved by SHPO using UTM NAD 83 eastings and northings in meters. This information should be supplied by the professional archeologist that conducted the investigation.

CONTRACTOR NEGLIGENCE. The Contractor will be assessed the amount of any and all fines and penalties assessed against and costs incurred by the Department that are the result of the Contractor's failure to comply with the notification required by 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 040904
OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS

Section 107.10 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added to **Section 107.10(c)(2) Non-commercially Operated Site**:

DESCRIPTION: The Indiana Bat (IBAT), *Myotis sodalis*, and Northern Long-eared Bat (NLEB), *Myotis septentrionalis*, are protected under the Federal Endangered Species Act and may use forested areas near the project for roosting, feeding and pup rearing.

The current U.S. Fish and Wildlife Service (USFWS) guidance for the IBAT allows tree clearing activities as long as those activities do not occur during the summer active period, March 15 – November 15 or within 0.5 mile of any IBAT hibernaculum.

The current USFWS guidance for the NLEB allows tree clearing activities as long as those activities do not occur within 150 feet of any known occupied maternity roost tree during the pup rearing season (defined as May 1-July 31) or within 0.25 mile of any NLEB hibernaculum.

The Contractor shall, in all operations, make provisions to minimize any impacts to the bats resulting from work performed on off-site areas as described in the following information.

CONSTRUCTION METHODS: If an off-site area for this project will require tree cutting during the active summer season of March 15 through November 15, the Contractor shall submit a technical assistance request to the Arkansas Ecological Services Field Office of the USFWS. The recommended method for submittals is the online IPAC Information for Planning and Conservation system, which can be accessed at the following website https://ecos.fws.gov/ipac/. Alternatively, requests may be submitted by letter to the Arkansas Ecological Service Field Office), 110 South Amity Road Suite 300, Conway, AR 72032, phone (501) 513-4470.

The request shall include detailed project information including: (1) the off-site area location with boundaries marked and labeled in latitude and longitude points; (2) a detailed map with the limits of the off-site area clearly defined; (3) the acreage to be cleared; (4) the timing of clearing activities; and (5) a request to determine if NLEB maternity roosts or hibernacula occur in the proximity of the submitted area. Any detailed map is sufficient; however, the IPAC project design and map creator system is recommended to create the map and make requests.

The clearing of trees will be permitted unless the USFWS determines from their records that the submitted area and activity is likely to adversely affect either species.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB 040904

OFF-SITE RESTRAINING CONDITIONS FOR INDIANA AND NORTHERN LONG-EARED BATS

The USFWS will submit a response within 30 days of receipt of the request. All clearances or responses obtained by the Contractor from USFWS shall be submitted to the Engineer for approval before site preparation begins.

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 the procurement of an off-site location.

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 040904

ARMY CORPS RESTRAINING CONDITIONS

Section 107.10 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added to **Section 107.10(b) and (c)**:

A restraining condition is located between Station Numbers 614+90 and 619+90 Right and Left.

These areas are considered Restraining Conditions in accordance with Section 107.10(b) and (c) of the Standard Specifications for Highway Construction, 2014. All construction activity within these specified locations, including the stockpiling and wasting of material, the driving and staging of equipment, utility relocation, and any off-site activities must be avoided; furthermore, inside these designated areas, the Contractor shall not construct work roads or conduct other activities that would disturb or modify these areas. In addition to these areas, the driving of equipment is prohibited within these streams.

Any activities planned in or near this area shall be coordinated through the Resident Engineer with the Environmental Division for review. These requests may be denied or modified by the Department.

11-28-2017
05-14-2018
04-10-2019
11-14-2023
12-17-2024

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB 040904

ARMY COPRS RESTRAINING CONDITIONS



ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

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. 040904

FLEXIBLE BEGINNING OF WORK – CALENDAR DAY CONTRACT

DESCRIPTION: Section 108, Prosecution and Progress, of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection 108.02(b)(4) b. Working Day Contract. is hereby deleted and the following is substituted therefor:

b. 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 calendar day following the execution of the Contract by the Department. 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 work day. The written Work Order from the Engineer will follow with the effective date being as specified.

The assessment of contract time will commence when the Contractor begins work or no later than 180 calendar days after the issuance of the work order if the contractor has not commenced work. The contractor will submit written notification to the Engineer five days prior to commencing work.

Subsection 108.02(c) is hereby deleted.

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SPECIAL PROVISION

JOB NO. 040904

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 040904

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.

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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. 040904

SOIL STABILIZATION

Section 210 Excavation and Embankment of the Standard Specifications, Edition of 2014, is hereby amended as follows:

Subsection 210.07 Construction Requirements is expanded to include the following:

At locations that the Engineer designates the existing soils to be unstable and cannot be stabilized through normal drying and compactive efforts, the Contractor may, with the approval of the Engineer, utilize the following additives to expedite the drying process:

- Quicklime (dry) meeting the requirements of Subsection 301.03(b), or
- Portland cement and/or fly ash meeting the requirements of Subsection 307.03(b)

The Engineer shall determine which additive will be used. The rate of application shall be determined by trial mixing and shall be approved by the Engineer. The spreading and mixing procedure used shall thoroughly and uniformly disperse the material into the soil. Any procedure that results in excessive loss of material or that does not achieve the desired results shall be immediately discontinued.

Subsection 210.12 Method of Measurement is expanded to include the following:

(g) Soil Stabilization will be measured by the ton of the additive used.

Subsection 210.13 Basis of Payment is expanded to include the following:

(d) Soil Stabilization completed and accepted and measured as provided above will be paid for at the contract unit price bid per ton for Soil Stabilization, which price shall be full compensation for furnishing, hauling and placing the material; for spreading and mixing; and for all labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Soil Stabilization	Ton

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ROCK FILL

Description: This item shall consist of the construction of embankments at the locations shown on the plans as Rock Fill. Embankments designated as Rock Fill shall comply with Section 210, Excavation and Embankment, of the Arkansas Department of Transportation Standard Specifications, 2014 Edition. Where there is a conflict between these Special Provisions and Section 210, these Special Provisions shall govern.

Materials and Construction Requirements: Embankments requiring Rock Fill shall be constructed of materials meeting the following requirements:

(1)Material for Rock Fill shall include stone obtained from an approved source and shall consist of hard and durable limestone, sandstone, or dolomite. The stone shall be greater than 1½" and less than 24", reasonably well-graded and angular, with fractured faces on at least 75% of the surface and shall not contain more than 10% overburden or fines less than 1½" in maximum cross-section. The stone shall weigh not less than 140 pounds per solid cubic foot and shall have a percent of wear not greater than 45 by Los Angeles Test (AASHTO T 96). Acceptance of gradation shall be by visual inspection by the Engineer.

2) All sod and vegetable matter shall be removed from the ground surface limits upon which the Rock Fill is to be constructed. The limits shall be cleared and grubbed in accordance with Section 201.02 (a) and (b) and the ground surface leveled and smoothed.

3) Geotextile Fabric (Type 10) shall be placed on the prepared ground surface for the Rock Fill in accordance with Section 625 Geotextile Fabric.

4) The first 24" layer of Rock Fill over the Geotextile Fabric shall not be dumped directly on the Geotextile Fabric. The first layer shall be started by initially depositing Rock Fill adjacent to the Geotextile Fabric and pushing the Rock Fill out over the Geotextile Fabric. Rock Fill can then be deposited on top of the first layer and pushed progressively out over the Geotextile Fabric. No construction equipment shall be allowed directly on the Geotextile Fabric.

(5) Subsequent layers of Rock Fill shall be placed and spread in lift thickness not to exceed the maximum particle size of 24", shaped and consolidated with appropriate equipment to produce a well-graded mass with a minimum practicable number of voids, and provide a stable embankment and firm and unyielding foundation for the subgrade and pavement. Each lift of Rock Fill shall be visually inspected and approved by the Engineer prior to placing additional lifts.

(6) The following shall be added to the third paragraph of Section 801.08 of the Standard Specifications. Rock Fill placed immediately adjacent to Pipe Culverts or Box Culverts including a minimum of 12 inches on top and sides of the culvert, and Rock Fill placed immediately adjacent to and surrounding settlement plates, drop inlets, outlet pipes, conduit vaults, and other penetrations through the Rock Fill except piling and ITS camera pole

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ROCK FILL

foundations shall meet the requirements of Class 3 mineral aggregate as specified in Sections 403.01 and 403.02 of the Standard Specifications. Sufficient Class 3 Aggregate material shall be placed to protect and prevent movement of any penetrations through the Rock Fill.

(7) Rock Fill material placed in the vicinity of piling and ITS camera pole foundations shown on the plans as Aggregate Base Course (Class 7) Fill, shall meet the material requirements and be constructed in accordance with Sections 303.02, 303.03, and 303.04 of the Standard Specifications, 2014 Edition, and this special provision. It shall meet the material requirements of Aggregate Base Course (Class 7) specified in Table 303-1.

(8) The top layer of Rock Fill shall be in accordance with Section 303 of the Standard Specifications for Aggregate Base Course (Class 7). It shall be placed to provide a barrier for preventing the migration of fines from the overlaying embankment material into the Rock Fill embankment and provide a stable base beneath concrete riprap at end bents. The top layer shall be at least 10 inches in thickness. The top layer will not be required on the exterior side slopes (the exterior surface that daylights and is not covered with fill) and where covered by Abutment Stone on Filter Blanket at end bents. The completed surface of the Rock Fill embankment shall be approved by the Engineer prior to allowing placement of additional embankment material. Density testing will not be required for the Aggregate Base Course (Class 7) material used to cap Rock Fill.

Method of Measurement: Rock Fill consisting of the material gradations specified herein will be measured in place by the cubic yard and accepted by the Engineer.
Geotextile Fabric (Type 10) will be measured according to Section 625 Geotextile Fabric.

Basis of Payment: Work completed and accepted by the Engineer and measured as described above shall be paid for at the contract unit price and shall include all labor, materials, and equipment for construction and for performing quality control and acceptance sampling and testing necessary to achieve the Rock Fill requirements as specified herein.
Geotextile fabric (Type 10) will be paid for according to Section 625 Geotextile Fabric.

Payment will be made under:

Pay Item	**Pay Unit**
Rock Fill	Cubic Yard

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COMPACTED EMBANKMENT ZONING

Division 200 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The second paragraph in **Subsection 210.02 (b), Acceptance Testing,** is hereby deleted and the following substituted therefor:

The minimum frequency of acceptance test by the Contractor shall be one test for density and moisture content per each 3000 cubic yards of embankment placed except that at least one test shall be performed on each layer of embankment. The results of all tests shall be at or above the minimum required density and the moisture content should be near optimum. If the results of any test do not meet the requirements, corrective actions shall be taken, and a re-test will be taken at the same location. Tests for gradation and plasticity index shall be performed in accordance with Section 306, except that the size of the standard lots will be 3000 cubic yards and a minimum of one gradation and plasticity index test shall be performed in each type of embankment zone. Acceptance for gradation and plasticity index will be based on Subsection 306.04. The location will be randomly selected by the Engineer using ARDOT 465. The Engineer may require the Contractor to test any location that, by visual inspection, appears different from previously approved material.

Subsection 210.03, Vacant, is hereby renamed as **Subsection 210.03, Zones**, and will include the following:

210.03 Zones. To facilitate design and construction, Compacted Embankment is divided into the following three zones:

(a) Pavement Subgrade Zone. The Pavement Subgrade Zone is defined as the top portion of the embankment that extends vertically from the plan subgrade surface elevation down to 3 feet below the plan subgrade surface elevation. The width of this zone shall be consistent with the “Subgrade Width” as shown on the “Typical Sections of Improvement” included in the plans or as defined in Subsection 101.01(c).

(b) Unpaved Exterior Zone. The Unpaved Exterior Zone is defined as the exterior portions of the embankment that are not covered by Pavement Structure. This zone includes the side slopes of the embankment and median area of a divided highway. The Unpaved Exterior Zone shall be at least 24 inches thick, measured perpendicularly to the side slopes. The area under ditch paving shall be considered as Unpaved Exterior Zone. The bottom of the Unpaved Exterior Zone shall be approximately 3 feet above the toe elevation of the embankment.

(c) Main Embankment Zone. The Main Embankment Zone is defined as the remaining embankment portion that excludes the Pavement Subgrade Zone and the Unpaved Exterior Zone.

Subsection 210.04, Vacant, is hereby renamed as **Subsection 210.04, Materials for Zone Types**, and will include the following:

210.04 Materials for Zone Types. (a) Pavement Subgrade Zone. Soils with a general classification of “Granular Materials” in accordance with AASHTO M 145 are acceptable for use in construction of the Pavement Subgrade Zone. Soils with a general classification of “Silt-Clay” in accordance with AASHTO M 145 are acceptable for use in construction of this zone if they have a plasticity index of between 8 and 20 and a maximum 65% passing the No. 200 sieve. Soils not meeting these requirements, unless chemically modified using cement, lime, fly ash, or

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COMPACTED EMBANKMENT ZONING

other suitable chemical agents with the approval of the Engineer, shall not be utilized in this zone regardless of the source.

(b) Unpaved Exterior Zone. Materials specified for the Pavement Subgrade Zone are generally acceptable for use in the Unpaved Exterior Zone. Cohesionless sandy soils shall be excluded from use in the Unpaved Exterior Zone due to erosion susceptibility. Sandy soils classified as “Granular Materials” in accordance with AASHTO M 145 shall have a minimum plasticity index of 5. Sandy soils are defined as soils containing more than 50% of materials that pass the No. 4 sieve but retain on the No. 200 sieve. Soils not meeting these requirements, unless chemically modified using cement, lime, fly ash, or other suitable chemical agents with the approval of the Engineer, shall not be utilized in this zone regardless of the source.

(c) Main Embankment Zone. Soils with a general classification of “Granular Materials” in accordance with AASHTO M 145 are acceptable for use in construction of the Main Embankment Zone. Soils with a general classification of “Silt-Clay” in accordance with AASHTO M 145 are acceptable for use in construction of this zone if they have a plasticity index of between 4 and 30. Soils not meeting these requirements, unless chemically modified using cement, lime, fly ash, or other suitable chemical agents with the approval of the Engineer, shall not be utilized in this zone regardless of the source.

The first sentence of the fourth paragraph of **Subsection 210.09, Embankment Construction,** is hereby deleted and the following substituted therefor:

Unless otherwise shown on the plans, all sod and vegetable matter shall be completely removed from the natural ground surface upon which the embankment is to be constructed, regardless of embankment height.

The first paragraph of **Subsection 210.10, Compaction Requirements,** is hereby deleted and the following substituted therefor:

The natural ground surface on which an embankment is to be constructed, the roadbed through section in excavation, and all embankments shall be adequately compacted in accordance with the compaction requirements specified in Subsection 210.10, regardless of embankment height. These requirements may be modified by the Engineer as conditions justify. Compaction shall be performed in accordance with Subsection 210.10, regardless of the embankment zone. Drainpipe of the pipe underdrain shall be placed at the bottom elevation of the Pavement Subgrade Zone.

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JOB NO. 040904

REMOVING AND REPLACING TOPSOIL

DESCRIPTION: This item shall consist of excavation of a layer of topsoil from the areas to be occupied by cuts and embankments, moving the material to stockpile areas for storage, and replacing the stored material on completed slopes and ditches in accordance with these specifications and at locations shown on the plans or as directed by the Engineer.

MATERIALS: Topsoil shall be the surface layer of humus-bearing soil with no admixture of refuse or any material toxic to plant growth and shall be reasonably free from subsoil and stumps, roots, brush, stone, clay lumps, or similar objects larger than 2” in greatest diameter. Brush and other vegetation that will not be incorporated with the soil during handling operations shall be cut and removed. Ordinary sods and herbaceous growth such as grass and weeds, shall not be removed but shall be thoroughly broken up and intermixed with the soil during handling operations. Topsoil may contain a reasonable amount of waste from clearing operations, such as small twigs and roots that can be expected to reach early decay.

CONSTRUCTION REQUIREMENTS:

(a) Removing and Storing Topsoil. Upon completion of clearing and grubbing operations and prior to beginning excavation, the Engineer shall designate areas to be stripped of topsoil. The depth of the topsoil to be stripped will be 2" to 12" from the original ground level, depending on site and soil conditions, as directed by the Engineer. No effort will be made to strip where topsoil is less than 2” in depth. Sufficient quantities of topsoil shall be stripped to allow distribution over the completed slopes to a depth as shown on the plans or as designated by the Engineer. Topsoil stripping will not be required in excessively rocky areas or where the ground surface is overlain with boulders or slab rock to the extent that equipment cannot operate effectively. Material to be stripped shall include grass, leaf mold, pine straw, leaves, rotten wood, and humus of all kinds. Stripped material shall be moved to areas on the right of way, or other approved locations, that will afford easy access for loading, hauling, and replacement. When measurement is to be by the cross section method, the stockpiles shall be uniformly shaped and susceptible to ready measurement by the cross section method. The stored topsoil shall be protected from contamination and erosion from the storage site.

Topsoil stripped from within the project limits shall be removed prior to the taking of original cross sections. The Contractor shall schedule the work in coordination with the Resident Engineer so as to minimize any delay between the stripping of the topsoil, the taking of original cross sections, and the beginning of excavation and/or embankment construction. Failure of the Contractor to properly schedule the work will not be considered as grounds for extension of time nor for additional payment due to any resulting delays.

(b) Replacing Topsoil. Topsoil previously stripped and stored shall be distributed over the completed slopes to a depth as shown on the plans or designated by the Engineer. Spreading and dressing of the topsoil layer shall be uniform insofar as possible. After spreading, any remaining large roots, branches, or foreign substances shall be removed to result in a smooth and clean appearance. Light rolling, disking, or other type manipulation,

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REMOVING AND REPLACING TOPSOIL

including sprinkling, shall be applied if necessary to cause the newly spread layer to pulverize, mix, and adhere to the slopes. Topsoil shall be placed on areas which are to receive seed or sod mulch as soon as practicable after the earthwork is completed but shall not be placed until after final cross sections are taken. The Contractor shall schedule the work in coordination with the Resident Engineer so as to minimize any delay between the completion of the earthwork, the taking of final cross sections, and the placement of topsoil. Failure of the Contractor to properly schedule the work will not be considered as grounds for extension of time nor for additional payment due to any resulting delays. If the condition of the soil is unsuitable due to excessive moisture or dryness, frost, or other conditions, the Contractor shall cease work under this item until the soil is in a suitable condition.

(c) Restoration. Additional work and materials required because of loss through erosion will be paid for under the pertinent contract items. Additional work and materials required due to the Contractor's negligence in maintaining completed work shall be accomplished at no cost to the State.

The storage sites for topsoil shall be dressed to conform to the adjacent area after the storage piles have been removed.

METHOD OF MEASUREMENT. Removing and replacing topsoil will be measured by the cubic yard in the stockpile. Measurements shall be made just prior, or as near as practicable, to removing the material from the stockpile.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per cubic yard for Removing and Replacing Topsoil, which price shall be full compensation for stripping the topsoil and moving or hauling and placing in measurable windrows or stockpiles; for conserving and protecting stockpiles; for dumping, spreading, disking, sprinkling (if necessary), lightly compacting, and dressing; and for all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Removing and Replacing Topsoil	Cubic Yard

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SPECIAL PROVISION

JOB NO. 040904

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)

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SPECIAL PROVISION

JOB NO. 040904

CEMENT STABILIZED CRUSHED STONE BASE COURSE

Division 300 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection 308.02 (a), Cement Content, is hereby deleted and the following substituted therefor:

The quantity of cement to be used with the aggregate and water shall be 4% by weight. The moisture in the mix shall be maintained within a range of ±1% of optimum.

Subsection 308.03 (a), Aggregate, is hereby deleted and the following substituted therefor:

Crushed stone shall comply with Subsection 303.02 for Class 7 or the alternative gradation below:

Sieve Size	Percent Passing
2"	100
1"	90-100
No. 4	45-95
No. 10	37-80
No. 40	15-50
No. 200	0-15

Subsection 308.04, Construction Requirements, is hereby amended by the following:

(k) Density. The material shall be compacted to a density, as determined by AASHTO T 310, Direct Transmission, of not less than 98% of the maximum laboratory density determined in the laboratory by AASHTO T 180, Method D. Cement Stabilized Crushed Stone Base Course placed in areas outside of the normal traveled way, such as driveways, islands, gore areas, other incidental construction, and restricted width areas outside of the normal traveled way which cannot accommodate a full width roller shall be compacted to a density, as determined by AASHTO T 310, Direct Transmission, of not less than 95% of the maximum laboratory density. Shoulders are within the normal traveled way. The aggregate shall be compacted across the full width of application.

Subsection 308.05 (b), Quality Control and **Subsection 308.05 (c), Acceptance Testing,** is hereby deleted and replaced by the following:

Quality control and acceptance shall be according to the provisions of Section 306.

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SPECIAL PROVISION

JOB NO. 040904

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.

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SPECIAL PROVISION

JOB NO. 040904

LONGITUDINAL JOINT DENSITIES FOR ACHM SURFACE COURSES

DIVISION 400, ASPHALT PAVEMENTS, of the Standard Specifications, Edition of 2014, is hereby amended as follows:

The following is added after the first paragraph of **Subsection 407.04, Construction Requirements and Acceptance:**

A notched wedge joint is required along all unconfined longitudinal joints where paving lifts are 2 inches or greater in depth. Notched wedge joints shall have a slope no greater than 1:12 from the pavement mat and may only be used when the depth of the mat is greater than 1½ inches. The notched wedge is not required in areas of build up for slope adjustments. The adjacent lane may be milled to allow the placement of the notched wedge joint. Interstate projects that are mill and fill shall not mill the adjacent lane until the new asphalt has been placed. Joints shall not be placed in the wheel path. Notched wedge joints will not be required between the shoulder and travel lane.

For mill and fill locations that are not constructed using a notched wedge, a milled or cutback joint shall be formed using a milling machine or saw to create a vertical face in the first mat after it has been compacted. No more than 2" in width shall be cut or sawed into the new mat to create a clean joint free of loose aggregates or old asphalt. Tack shall cover the notched wedge and/or vertical face prior to placing the adjacent lane.

The third paragraph of **Subsection 410.07, Spreading and Finishing,** is hereby deleted and the following is substituted therefor:

The longitudinal joint in one layer shall offset that in the layer immediately below by approximately 6". When possible, the joint in the top layer shall be at the centerline of the pavement if the roadway comprises two lanes in width, or at lane lines if the roadway is more than two lanes in width. On roadways with a center turn lane, the Contractor may, at his option, elect to place a joint at the crown (i.e., middle of the center turn lane) of the roadway and eliminate the joints on the lane lines of that lane. The slight excess of asphalt at a longitudinal joint, generated by overlapping during placement of an adjacent mat to a previous mat, shall not be scattered across the mat.

The asphalt screed shall be operated in vibration mode while placing the mixture. Auger gates and tunnels should be extended to within 12 to 18 inches of the end gate to ensure material is not being pushed and segregated. An approved release agent may be applied to tow behind rollers used to compact notch wedge joints.

The second sentence of the fifth paragraph of **Subsection 410.07, Spreading and Finishing,** is hereby deleted and the following is substituted therefor:

The top layer of a notched wedge joint shall be placed within three days of constructing the notch.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

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. 040904

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

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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 price, $P_{(b)}$, for any

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

PRICE ADJUSTMENT FOR ASPHALT BINDER

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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SPECIAL PROVISION

JOB NO. 040904

DESIGN OF ASPHALT MIXTURES-AGGREGATES

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

The following is added to the fifth sentence of the first paragraph in the bulleted section of **Subsection 404.01 Design of Asphalt Mixtures. (b) Design Requirements:**

- Limestone aggregate will be required as a part of the mix design for this project. The minimum requirement for limestone in the coarse aggregate shall be 20% by weight of the overall amount of the cold feed.

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SPECIAL PROVISION

JOB NO. 040904

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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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, Rock Fill)	207,303,307,308,309,310, 402, Rock Fill SP	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
Ultrathin 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.

ARKANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION
JOB NO. 040904
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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PAVEMENT SMOOTHNESS FOR ASPHALT PAVEMENTS

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

Add the following as **Subsection 410.09(e), Pavement Smoothness,** to the Standard Specification.

Subsection 410.09(e), Pavement Smoothness.

(1) General. The Contractor shall measure the smoothness of the finished asphalt pavement surface on all mainline travel lanes, auxiliary lanes, and ramps using the IRI, reported in inches per mile (in/mi), unless otherwise shown on the Plans.

Smoothness testing shall apply to final asphalt surface courses on State, U.S., and Interstate highways, excluding State Aid and City Aid projects. Smoothness testing segments shall begin 25 feet after the start of new pavement and end 25 feet before the end of new pavement to allow profiler stabilization and avoid edge effects. Conduct smoothness testing under conditions suitable for obtaining valid IRI measurements and in the presence of the Engineer.

All Acceptance determinations for pavement smoothness will be based on Department analysis of raw profile data.

(2) Definitions. The following definitions apply to pavement smoothness requirements under this Subsection:

Certified Profiler System. An inertial profiler and operator combination certified through the CTTP certification program.

International Roughness Index (IRI). A measure of pavement profile roughness calculated for an individual wheel path and reported in inches per mile (in/mi).

Mean Roughness Index (MRI). The average of the IRI values determined for the left and right wheel paths of an evaluation segment, reported in inches per mile (in/mi).

Wheel Path. The area normally traversed by the wheels of a vehicle where pavement profiles are collected. The left and right wheel paths are parallel to the approximate location of the pavement lane lines, nominally 6 feet apart, and centered between the pavement lane lines.

New Construction. Construction of asphalt pavement on a newly constructed roadway or pavement structure where no existing pavement surface is retained beneath the new pavement.

Reconstruction. Removal and replacement of the existing pavement structure, including the underlying base or other structural pavement layers. Removal and replacement of asphalt pavement without replacement or reconstruction of the underlying pavement structure is not considered Reconstruction.

Multi-Lift Resurfacing. Asphalt resurfacing in which the full designed resurfacing thickness is placed in two or more asphalt pavement lifts over an existing pavement surface.

Other Resurfacing. Asphalt resurfacing consisting of a single asphalt pavement lift placed over an existing pavement surface.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

PAVEMENT SMOOTHNESS FOR ASPHALT PAVEMENTS

(3) Equipment and Certification. Smoothness shall be measured using an inertial profiler meeting the requirements of AASHTO M 328 and operated in accordance with AASHTO R 57.

The profiler shall be certified through the CTTP certification program. Certification shall apply to the specific combination of profiler and operator.

The Contractor shall furnish all equipment, personnel, and transportation required for testing.

(4) Testing Requirements. The Contractor shall coordinate inertial profile testing with the Engineer. Smoothness testing shall be performed in each wheel path of each lane. Conduct smoothness testing under conditions suitable for obtaining valid IRI measurements and in the presence of the Engineer.

Testing shall include sufficient run-up and run-out distance to ensure proper operation and stabilization of the inertial profiler, unless otherwise approved. Testing shall begin 25 feet after the start of new pavement and end 25 feet before the end of new pavement. Profiles shall be collected in accordance with this Subsection.

The Contractor may analyze IRI data using any software for process control purposes. The Contractor shall submit the raw electronic road profile data files (ERD format) for each wheel path to the Engineer within one working day after testing. Contractor-processed results may be submitted for informational purposes but will not be used for Acceptance or determination of pay adjustments. Acceptance and pay adjustments will be determined by the Department using the submitted ERD files analyzed with Department-approved software (ProVAL).

ERD files shall be complete, unfiltered, and unedited and shall include all header, calibration, and other information required for analysis. Filtering, smoothing, or other modification of the raw profile data after collection and prior to submission will not be permitted. If the submitted ERD files are determined to be incomplete, filtered, corrupted, or not representative of the measured pavement surface, the data will be rejected and the Contractor shall reprofile the pavement at no additional cost to the Department.

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PAVEMENT SMOOTHNESS FOR ASPHALT PAVEMENTS

File names for electronic data shall follow the format:

YYMMDD-J-T-N-D-L-W-S

Where:

YY=	Two-digit year
MM=	Month (including leading zeros)
DD=	Day of Month (including leading zeros)
J=	the Department Job Number
T=	Route Type (I, AR, US, etc.)
N=	Route Number (no leading zeros) and auxiliary ID (if applicable, i.e. E, W)
D=	Primary route direction (I or D, indicating Increasing or Decreasing; Increasing = North or East, Decreasing = South or West)
L=	Lane number (1 for driving lane, increasing by one for each lane to the left)
W=	Wheel path (L (left) or R (right))
S=	Beginning Station

(5) Existing Pavement Evaluation. Prior to the Pre-Placement Conference required under Subsection 410.02, the Contractor shall profile the existing pavement surface using an inertial profiler. Profiling shall be performed in accordance with AASHTO R 56 and the results submitted to the Engineer within 1 working day after testing.

When the Contractor's existing pavement profile indicates an MRI of 140 in/mi or greater, the Department will perform verification testing of the existing pavement surface.

Existing pavement profile data shall be used to evaluate pavement condition. Additional baseline profiling performed by the Contractor shall be for informational purposes only and shall not govern Acceptance, corrective action decisions, or payment.

(6) Segment Definition and Evaluation. IRI values shall be determined for each wheel path and averaged to obtain the Mean Roughness Index (MRI) for each segment.

Ride smoothness lots shall consist of continuous mainline pavement. The pavement shall be divided into 0.1-mile segments for evaluation. Continuous pavement less than 0.1 mile in length shall be combined with an adjacent segment to form a full 0.1-mile segment prior to analysis.

Auxiliary lanes, ramps, crossovers, turnouts, shoulders, driveways, islands, tapers, and other incidental paving shall be evaluated for compliance and corrective action but shall not be included in ride smoothness lots for payment unless otherwise specified.

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PAVEMENT SMOOTHNESS FOR ASPHALT PAVEMENTS

(7) Acceptance Criteria. The finished surface shall meet the requirements of Table 1 or Table 2, as applicable.

(8) Pay Adjustments for Smoothness. Smoothness pay adjustments shall be applied in accordance with Table 1 or Table 2, as applicable.

Table 1
New Construction, Reconstruction, and Multi-Lift Resurfacing

Average MRI (in/mi)	Pay Adjustment
<55	+2% Incentive
≥55 to ≤ 70	Full Payment (100%)
>70 to ≤ 80	-5% Deduction
>80 to ≤ 95	-10% Deduction
>95	Corrective Action Required

Table 2
Other Resurfacing Projects

Average MRI (in/mi)	Pay Adjustment
<70	+2% Incentive
≥70 to ≤ 95	Full Payment (100%)
>95 to ≤ 115	-5% Deduction
>115 to ≤ 125	-10% Deduction
>125	Corrective Action Required

Disincentive pay adjustments under Table 2 will not apply to segments where the existing pavement measured 140 MRI or greater prior to construction. Incentive pay adjustments shall remain applicable.

Preconstruction smoothness measurements shall be performed by the Contractor using the same equipment and procedures specified for Acceptance testing and submitted to the Engineer at least 15 days prior to paving operations in the affected segment. Measurements shall be witnessed or independently verified by the Engineer.

(9) Localized Roughness. Areas of localized roughness will be identified using the Smoothness Assurance analysis within Department-approved software. Localized roughness shall be evaluated using a continuous segment length of 25 feet and a 250 mm filter.

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PAVEMENT SMOOTHNESS FOR ASPHALT PAVEMENTS

The following thresholds shall apply:

- Design speed of 45 mph or greater: 150 in/mi
- Design speed less than 45 mph: 170 in/mi

Design speeds are listed in the Design Traffic Data on the title sheet of the Plans.

The finished surface of 25-foot sections adjacent to existing structures or the end of pavement shall not show surface deviations exceeding 1/8 inch in 10 feet.

The Engineer may require straightedge evaluation in areas not suitable for inertial profiling, including transverse joints, construction joints, bridge approaches, and isolated pavement sections.

Areas exceeding the applicable localized roughness or surface deviation requirements shall be corrected at no additional cost to the Department.

(10) Corrective Action. Segments exceeding Acceptance criteria or containing localized roughness shall be corrected. Corrective work may include grinding with equipment meeting Section 412 or other approved methods. Corrective work shall be performed at no additional cost to the Department.

Ground areas shall be fog sealed with CSS-1h asphalt emulsion in accordance with Section 403. The material may be diluted with water as approved and shall be applied at a rate sufficient to uniformly seal the surface without runoff, streaking, or flushing. The surface shall be clean and free of loose material prior to application. Fog seal shall not be applied when the pavement surface temperature is below 60 °F or when weather conditions prevent proper curing. Traffic shall not be permitted on the treated surface until the emulsion has adequately cured and tracking will not occur.

Grinding shall not remove more than 1/4 inch of the finished pavement surface. Areas requiring grinding in excess of 1/4 inch to achieve the required smoothness shall be removed and replaced or corrected by another method approved by the Engineer at no additional cost to the Department. Grinding shall produce a uniform surface free of ridges, gouges, or other defects and shall not create surface texture or drainage conditions unacceptable to the Engineer.

Upon completion of corrective action, the affected lot shall be re-profiled. Pay adjustment shall be determined based on the final lot average MRI. If corrective action fails to reduce the lot average MRI below the corrective action limit, the Engineer may require removal and replacement in accordance with Section 105.

(11) Effect of Corrective Action on Pay. Corrective action shall not disqualify a lot from incentive eligibility unless otherwise specified. Pay adjustment shall be based on the final MRI after completion of corrective action.

(12) Verification. Verification testing shall be performed at a minimum frequency of once per certified profiler system per calendar year and on not less than 25% of profiles collected statewide.

Verification test results shall be within 3.0 in/mi of the Contractor’s reported results.

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PAVEMENT SMOOTHNESS FOR ASPHALT PAVEMENTS

If the difference exceeds 3.0 in/mi, the following may be required:

1. Recalibration of the profiler.
2. Re-profiling of the affected pavement.
3. Rejection of the Contractor's data.
4. Use of Department-obtained data for Acceptance.

The Department may perform independent profiling using Department equipment for verification purposes.

Acceptance and pay adjustments shall be based on the Department's analysis of the ERD data or Department-collected data, as determined by the Engineer.

(13) Exclusions. Smoothness requirements shall not apply within 25 feet of the beginning and end of the project, at intersections, bridge approaches and departures, or in other areas shown on the Plans.

Smoothness testing is not required on bridge decks paved with asphalt overlays unless specifically noted in the Plans.

Smoothness requirements shall not apply to any isolated continuous lane segment less than 0.1-mile in length.

The Engineer may modify the smoothness requirements for transitions, short sections, or areas with geometric constraints, existing pavement deficiencies, utility conflicts, subgrade instability, or other special conditions.

(14) Dispute Resolution. When pavement smoothness results are disputed, the Department may require additional testing by an independent third party approved by the Department. Third-party testing shall be performed using a certified profiler system and operator in accordance with this Subsection.

The Contractor shall be responsible for the cost of third-party testing. If the third-party testing substantiates the Contractor's dispute, the Department will reimburse the Contractor for the cost of the testing.

If third-party testing does not resolve the dispute, the Department may perform additional testing or require testing using alternate approved equipment. The Department's determination shall govern Acceptance and the applicable pay adjustment for the affected segment.

Initiation of dispute resolution shall not suspend required corrective action unless otherwise approved by the Engineer.

ARKANSAS DEPARTMENT OF TRANSPORTATION

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JOB NO. 040904

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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JOB NO. 040904

COLD MILLING - COUNTY PROPERTY

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

The second sentence of **Subsection 412.01** is hereby deleted and the following is substituted therefor:

> The material generated from the milling of tapers or butt joints at the beginning and end of the project, the tapers or butt joints transitioning to an existing structure, and tapers or butt joints at adjoining county roads, city streets, or highways on the project shall be transported and stockpiled at the location shown in the plans and shall become the property of the county in which the project is located or to an adjoining county as designated by the Engineer. The location and quantity of these millings will be designated on the plans or provided by the Engineer. The millings shall be stockpiled in a trapezoidal shape, or as directed by the Engineer, which can be easily measured.
>
> Material generated from the cold milling operations for rut milling, removal of an ACHM overlay of a bridge deck, or other conditions not designated above shall become the property of the Contractor.

The following is added as the second sentence of **Subsection 412.05, Basis of Payment**:

> 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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SPECIAL PROVISION

JOB NO. 040904

LONGITUDINAL TINING

Section 501, Portland Cement Concrete Pavement, of the Standard Specifications, Edition of 2014, is hereby expanded as follows:

Subsection 501.05(k)(5), Final Finish, is expanded to include the following:

The final finish shall be produced by using the drag finish as previously described with the further application of a metal tine finishing device. Tining shall produce grooves of 1/8" wide, by 1/8" deep, spaced ¾" on center and parallel to the longitudinal joint. Longitudinal tining shall stop at the edge of the travel lanes. The metal tining device shall be operated by an approved mechanical means, and shall be maintained clean and free from encrusted mortar and debris to ensure uniform groove dimensions. The tining finish shall not be performed too early whereby the grooves may close up.

The tining grooves shall be neat in appearance, parallel with the longitudinal joint without noticeable wander, overlap, or wave pattern; uniform in depth and in accordance with these specifications. Grooves must exhibit no slumping of the groove edges or severe tearing of the concrete surface. Any time that the tining grooves do not meet these requirements, the concrete paving operation shall be immediately stopped and will not resume until the problem has been resolved.

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SPECIAL PROVISION

JOB NO. 040904

PCC PAVEMENT SURFACE SMOOTHNESS (IRI)

This Special Provision supersedes Subsection 501.05(m) and 501.12 of the Standard Specifications.

Description. It is the intent of this specification to produce a pavement that is durable and consistently exceeds the minimum test values in these specifications. The pavement surface smoothness and associated payment adjustments will be determined by the use of the Inertial Profiler (IP) and the International Roughness Index (IRI). Pavement smoothness will be determined for each lane by obtaining the IRI for the left and right wheel paths. The MRI will be used to determine areas requiring correction and applicable payment adjustments.

Definitions. The following definitions apply to this Special Provision:

- **International Roughness Index (IRI).** A measure of pavement surface roughness calculated for an individual wheel path and expressed in inches per mile (in/mi).
- **Mean Roughness Index (MRI).** The average of the IRI values for the left and right wheel paths of a lane.
- **Ride Smoothness Lot.** A continuous mainline lane segment used to determine pavement smoothness Acceptance and applicable price adjustments.
- **Localized Roughness.** An area of pavement exceeding the applicable short continuous IRI threshold when evaluated using the Smoothness Assurance analysis.
- **Evaluation Segment.** A defined length of pavement for which smoothness is evaluated.
- **Raw Profile Data.** Unfiltered pavement profile data collected by the certified profiler and used for Department analysis and verification.
- **Corrective Action.** Grinding, removal and replacement, or other corrective work approved by the Engineer to bring the pavement into compliance with the smoothness requirements.

Equipment and Operator. The Contractor shall furnish a properly calibrated and documented Inertial Profiler (IP) capable of exporting raw profile data in an unfiltered ERD file format or an approved ADF file format. The IP shall also produce a profilogram (profile trace of the surface tested). The IP shall conform to the Class I requirements of the most recent revision of ASTM E950.

Profile analysis for determination of IRI and areas of localized roughness will be conducted using ProVAL version 3.6 or the most recent version of ProVAL Software. IRI values shall be reported in inches/mile (in/mi).

For all projects let to contract after October 1, 2025, both the technician performing pavement profiling operations for the Contractor and the profilometer used shall be certified in Inertial Profiling through the CTTP program at the University of Arkansas.

Pavement Surface Testing. In the presence of the Engineer, the Contractor shall setup a test section to calibrate the distance sensor and check the profile system calibration before each day's testing. Unless otherwise authorized by the Engineer, all smoothness testing shall be performed in the presence of the Engineer or his/her designated representative using the manufacturer's calibration procedures.

The Contractor shall remove all objects and foreign material on the pavement surface prior to surface evaluation. The Contractor will be responsible for all traffic control associated with testing and any corrective work (when applicable) that is required of the final pavement surface.

The IP shall be run in the final design direction of traffic. Profiles shall be measured in the left and right wheel paths of each lane. Each lane's wheel path shall be tested and evaluated separately. The

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Engineer shall determine the length in miles for each main lane of traffic. The IP shall be operated at the optimum speed as defined by the manufacturer.

The Engineer will verify the profiles by testing approximately 10% of the pavement. This testing will be performed by the Engineer, using either the IP furnished by the Contractor or one provided by the Department, at the option of the Engineer.

If the IP is furnished by the Contractor, the Contractor may elect to allow their employee to drive the IP, but the sensors and data collection systems will be operated by the Engineer's representative during each of the verification runs.

For the first day's run, profiles will be taken utilizing the IP as soon as the hardness of the concrete is sufficient for proper testing. Smoothness profiles of the first day's run will be analyzed before the second day's run commences. Should the day's run exceed an IRI of 75 inch/mile the paving operations shall be discontinued until better methods and equipment are obtained or until the present equipment is properly adjusted. If adjustments are necessary from the first day's run, the second day's run will be profiled to determine the ability of the equipment to finish the pavement within specified tolerance. If the second day's operation fails to produce a finished surface IRI of 75 inch/mile or less, the Contractor shall produce new methods and/or equipment that will obtain the specified results. The new methods and/or equipment will be given trial runs as indicated previously for original equipment. The finished pavement surface will be measured for roughness by the Contractor. Roughness will be measured using an IP. The profiler manufacturer's data collection setting specifications shall be furnished and approved by the Engineer. The MRI shall not exceed 85 in/mi for any 0.1-mile evaluation segment. Bridges will not be included in the calculation of the MRI.

Areas of localized roughness will be identified using the Smoothness Assurance analysis within Department-approved software (ProVAL). Localized roughness shall be evaluated using a continuous segment length of 25 feet and a 250 mm filter.

The following thresholds shall apply:

- Design speed greater than 45 mph: 150 in/mi
- Design speed of 45 mph or less: 170 in/mi

Design speeds are listed in Design Traffic Data on the title sheet of the Plans. The longitudinal limits of corrective work shall be determined using the Grinding section of the Smoothness Assurance analysis. The finished surface of 25 feet sections adjacent to an existing structure or the end of pavement shall not show surface deviations in excess of 1/8 inch in 10 feet.

For the duration of the work, every reasonable effort shall be made to test smoothness within 5 working days after each day's paving operation. Scheduling and testing shall be coordinated with the Engineer. The Engineer and the Contractor shall mutually agree upon scheduling of smoothness testing. All data obtained from the profiling operations will be furnished to the Engineer at the end of each day's profiling operations.

All corrective work and material necessary to correct surface tolerance deficiencies for surface courses shall be at no cost to the Department.

Furnishing the IP, taking all required profiles, and performing all necessary computations will not be measured and paid for separately but will be considered as part of quality control and acceptance sampling and testing included in the bid items for the PCCP items.

Areas showing low spots of more than 1/4 inch in 10 feet in the longitudinal direction shall be corrected by grinding or shall be removed and replaced according to Section 507 to an elevation

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that will not show surface deviations in excess of 1/8 inch in 10 feet.

The cross slope of the pavement shall vary no more than 1/8 inch in 10 feet when tested with a straight edge.

Any longitudinal joints within the limits of a travel lane shall be uniform to a degree that no depressions or high spots greater than 1/4 inch in 10 feet are present when tested with a straightedge placed perpendicular to the centerline of the lane.

Grinding shall be performed, if necessary, to reduce the IRI as determined by the Smoothness Assurance analysis in ProVAL. The grinding equipment shall be power driven and specifically designed to smooth and texture PCC by means of diamond blades. Areas that have been ground shall be re-grooved by grooving according to Subsection 510.04, to provide a uniform texture equal in roughness to the surrounding unground pavement. The grinding process shall produce pavement surface that is true to grade and uniform in appearance with a longitudinal line type texture. The line type texture shall contain parallel longitudinal corrugations that present a narrow ridge corduroy type of appearance. The peaks of the ridges shall be approximately 1/32 inch higher than the bottoms of the grooves with approximately 53 to 57 evenly spaced grooves per foot.

However, if the ground area is less than 50 feet in length and full width of pavement lane, re-grooving will not be required.

After the areas of localized roughness have been identified and grinding has taken place, the smoothness of the pavement shall be measured again to determine if the pavement has met the smoothness requirements for 100% pay. If grinding of localized roughness is required as described previously, incentives will not be allowed on that section, but the Contractor can receive a maximum of 100% pay. Continual production of a final surface not qualifying for 100% payment will not be allowed.

The MRI will be used to determine payment adjustments. The IRI values for the left and right wheel paths will be averaged for each 0.1-mile lane segment to determine the MRI for the lane segment. Areas less than 0.1 mile shall be combined with a full 0.1-mile segment before profiling.

The Engineer may require straightedge evaluation in areas not suitable for inertial profiling, including but not limited to transverse joints, construction joints, bridge approaches, isolated pavement sections, and any other area designated by the Engineer. Straightedge evaluation shall be performed in accordance with Subsection 410.09(b)(2).

Submittals. The Contractor shall submit the printed profile trace (graphical trace) signed by the operator, indicating each segment's MRI value at the end of each day's profiling operations.

The Contractor shall also submit electronic files, with the printed profile trace, in ERD and ADF format that represent the raw data from each pass. The electronic file names shall follow the standardized format shown in the following.

YYMMDD-J-T-N-D-L-W-S

Where:

YY=Two-digit year
MM=Month (including leading zeros)
DD=Day of Month (including leading zeros)
J=the Department Job Number
T=Route Type (I, AR, US, etc.)
N=Route Number (no leading zeros) and auxiliary ID (if applicable, i.e. E, W)

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D=Primary route direction (I or D, indicating Increasing or Decreasing; Increasing = North or East, Decreasing = South or West)
L=Lane number (1 for driving lane, increasing by one for each lane to the left)
W=Wheel path (L = left or R = right)
S=Beginning Station

Pavement smoothness within each wheel path will be measured in terms of IRI (in/mi) according to the Pavement Surface Testing section above. Price adjustments apply to the total area for the lane width represented by the profile index for a continuous main lane section at least 0.1 mile long. Price adjustments for incentives are only based on the initial measured profile index of continuous sections of at least 0.1 mile in length, excluding bridges, and before any corrective work; however, grinding will be allowed to achieve 100% full payment in lieu of accepting a disincentive for that section. Ramps, acceleration/deceleration lanes, shoulders, islands, tapers, and other incidental paving shall not be included in ride smoothness evaluation segments for acceptance or price adjustments and shall not be subject to the 85 in/mi MRI criterion. These areas shall comply with the applicable localized roughness criteria and surface tolerance requirements of this Special Provision. Areas exceeding an applicable localized roughness threshold or surface tolerance shall be corrected at no cost to the Department. If grinding is required due to failure to meet the required profile index, the pavement will be ground to a level which qualifies for 100% payment. The MRI will be used to determine acceptance for pavement smoothness and price adjustments for each 0.1-mile segment.

Price Adjustments for Pavement Smoothness. Incentive payments will be shown on the final estimate as a separate item. Price adjustments apply to the total area of final surface for the standard lane width represented by the MRI for a continuous main lane section at least 0.1 mile in length. Areas less than 0.1 mile shall be combined with a full 0.1 mile segment. Any area less than 0.1 mile shall be authorized by the Engineer prior to the profiling activities. Incentives will be calculated based on the following guidelines.

No incentive payment for smoothness will be considered for a Ride Smoothness Lot if any portion of that Ride smoothness Lot has been ground to obtain the required smoothness. If grinding of localized roughness is required as described previously, incentives will not be allowed on that section, but the Contractor can receive a maximum of 100% pay. If grinding is required due to failure to meet the required MRI, the pavement will be ground to a level which qualifies for 100% payment.

INTERNATIONAL ROUGHNESS INDEX		PRICE ADJUSTMENT
in/mi/0.1Mi	mm/km/200 m section	% of payment of Unit Bid Price
60 or less	940 or less	+6.0%
Over 60 to 65	Over 940 to 1025	+4.0%
Over 65 to 70	Over 1025 to 1100	+2.0%
Over 70 to 75	Over 1100 to 1180	0
Over 75 to 80	Over 1180 to 1260	-2.0%
Over 80 to 85	Over 1260 to 1340	-4.0%
Over 85	Over 1340	CORRECTIVE WORK REQUIRED

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

BROADBAND INTERNET SERVICE FOR FIELD OFFICE

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.

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SPECIAL PROVISION

JOB NO. 040904

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, in order to provide a safe and convenient traffic flow at all times throughout the limits of each 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, 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, there shall be no two-way traffic operations permitted on the main lanes. Except where shown on the plans, interchange ramps shall be kept operational at all times. Except where shown on the plans, work on the main lanes, ramps, and side roads shall be accomplished in partial widths in order 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.

I-40 and I-49 Main Lane Operations:

Only one (1) lane closure with a maximum work area of 4 miles will be provided for in the plans. Lane closures shall be installed such that the closure zone does not exceed the actual work area by more than ¼ mile. The Contractor shall not close any portion of a road or lane unless active work will begin immediately. In addition, when gainful work is not being accomplished in an area where a road or lane has been previously closed, steps shall be taken to return traffic to normal conditions – that is, all lanes open to traffic in each direction within two (2) hours after construction operations have ceased. All additional labor, materials, and incidentals needed to return the traffic to normal conditions shall be provided, maintained, removed, and replaced, if necessary, at no cost to the Department. Traffic shall not be permitted on any milled surface. The contractor shall not close roads or lanes for extended periods of time and will be charged for the Road User Cost in cases where the short-term intermittent closures exceed 1 hour.

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MAINTENANCE OF TRAFFIC

In addition, single lane closures of the I-40 and I-49 main lanes will <u>not</u> be permitted during the following periods:

I-40 and I-49		
Days(s)	Duration	Hourly Lane Use Charge
Daily	6:00 AM – 8:00 PM	$3,000

Failure to comply with these requirements will result in lane use charges corresponding to the rates shown in the aforementioned tables until the lane closure is removed. The lane use charge shall apply to all construction work and unexpected, but otherwise preventable (as determined by the Engineer), maintenance related lane closures within the prohibited times. This includes lane closures directed by the Engineer to address immediate maintenance needs resulting from a lack of proper preventative maintenance (as determined by the Engineer) within the allowable closure times. A lane closure will not be considered to be removed until all advance warning devices specific to the lane closure have been removed or revised. In assessing this lane use charge any portion of an hour will be counted as a full hour.

The Contractor shall schedule all work so that no road or lane closures exist and no work requiring road or lane closures 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 part of the Holiday.

The Contractor shall schedule and perform the work, including the placement and removal of traffic control devices, to ensure that all traffic lanes are open at all times, with the aforementioned exceptions.

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.

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

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MAINTENANCE OF TRAFFIC

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 in the work zone. All other vehicles shall be parked at a safe location outside the work zone, as approved by the Engineer.

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 work day, equipment shall be either shielded from traffic by an approved positive barrier or placed so it is not within 30 feed of any lane carrying traffic.

The Contractor shall restrict the crossing of the median to existing interchanges and overpasses. Access to the project shall be limited to existing interchanges.

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.

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, where 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.

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

SPECIAL PROVISION

JOB NO. 040904

SPECIAL SAFETY REQUIREMENTS FOR OVERHEAD SIGNS

DESCRIPTION: This specification covers special safety requirements during the installation of overhead signs and/or structures. These requirements are intended for the safety of both the traveling public and the workers. Any modifications must meet the approval of the Engineer.

GENERAL: Any falsework or construction equipment located on the shoulder and required for erection of the structural steel, or for other activities, shall be protected by the precast barrier shown on Drawing No. TC-4 or by barricades that meet the safety requirements of the Engineer. No equipment or materials will be permitted to be hoisted over traffic. Erection of sign supports and other activities over the lanes of Interstate 49, Interstate 40 and associated interchange ramps as specified by the Engineer shall be limited to the hours between 11:00 p.m. and 5:00 a.m. on Sunday through Saturday, but will not be permitted during legal holidays or weekends adjacent to these holidays. The allowable work period may be increased or decreased by the Engineer based upon impact to traffic. During the specified work period traffic may be stopped for short intervals of time, not to exceed 15 minutes, or one lane in each direction may be closed, as approved by the Engineer, in order that the above activities can progress without endangering the traveling public. Between closure periods the roadway must be opened for a sufficient length of 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 or situations.

The Contractor shall notify the Resident Engineer no less than five (5) business days before any activities that will temporarily or permanently reduce the vertical clearance over Interstate 49, Interstate 40 and associated interchange ramps. Notification is required for each activity that will reduce the previous existing clearance. A minimum vertical clearance of 14’-0” must be maintained during all activities.

The Contractor shall schedule his work so that no main lane closures exist and no work requiring main lane closures 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.

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

SPECIAL PROVISION

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SPECIAL SAFETY REQUIREMENTS FOR OVERHEAD SIGNS

The Engineer may limit or not approve closures due to special events or incidents that could cause traffic to become congested. The Contractor shall immediately modify his schedule, working methods or procedures as directed by the Engineer.

No direct payment will be made for this work. It shall be considered subsidiary to the other items in the contract.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES LEFT IN PLACE

This Special Provision shall be supplementary to Section 604, Traffic Control Devices in Construction Zones, of the Standard Specifications, Edition of 2014.

MATERIALS. Signs, Barricades, and Traffic Drums Left in Place shall be classified as "acceptable" in accordance with Section 604.02, Materials, at the completion of the project. Signs, Barricades, and Traffic Drums shall meet the requirements of Section 604.

METHOD OF MEASUREMENT. Signs, Barricades, and Traffic Drums and shall be measured as provided in Section 604.

BASIS OF PAYMENT. Signs Left in Place, Barricades Left in Place, and Traffic Drums Left in Place completed and accepted and measured as provided above will be paid for at the contract unit price bid for these items and shall be full compensation for all materials, labor, tools, equipment, and incidentals necessary for installation, maintenance, repair, and leaving in place upon completion of work.

Payment will be made under:

Pay Item	Pay Unit
Signs Left in Place	Square Foot (Square Meter)
Barricades Left in Place	Linear Foot (Meter)
Traffic Drums Left in Place	Each

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SPECIAL PROVISION

JOB NO. 040904

FURNISHING, INSTALLING AND LEAVING IN PLACE PRECAST CONCRETE BARRIER WALL

DESCRIPTION: This item shall consist of furnishing, installing and leaving in place precast concrete barrier in accordance with these specifications and at the locations shown on the plans or directed by the Engineer.

MATERIALS: Materials for precast concrete barrier shall meet the requirements of Subsection 604.02(c) of the Standard Specifications, Edition of 2014.

CONSTRUCTION REQUIREMENTS: Precast concrete barrier shall be installed at the locations shown on the plans or as directed by the Engineer. Installation shall be in accordance with the details shown on Standard Drawing TC-4 and TC-5.

Used precast concrete barrier units may be utilized. Used units shall be inspected by the Engineer prior to installation and shall be cleaned and repaired as directed. Any damage to the units during installation shall be repaired as directed.

METHOD OF MEASUREMENT: Furnishing, Installing and Leaving in Place Precast Concrete Barrier will be measured by the Linear Foot.

BASIS OF PAYMENT: Work completed and accepted under this item and measured as provided above will be paid for at the contract unit price bid per linear foot for Furnishing, Installing and Leaving in Place Precast Concrete Barrier, which price shall be full compensation for furnishing all materials, labor, tools, equipment and incidentals necessary for furnishing, repairing, and installing the precast concrete barrier.

Payment will be made under:

Pay Item	Pay Unit
Furnishing, Installing and Leaving In Place Precast Concrete Barrier	Lin. Ft.

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JOB NO. 040904

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 added as the second paragraph of **subsection 604.03(j)**:

When the condition requiring the sign's message mode ceases to exist, but the need for the sign is anticipated to recur within 72 hours, the sign may be left in place and operated in the caution mode with one of the following series of messages displayed for this interim:

- "Drive Safely" followed by "Buckle Up"
- "Don't Drink and Drive" followed by "Buckle Up"

The Engineer will determine which of the above series of messages will be displayed.

If it is anticipated that the sign will not be required and authorized for use in a message mode within a 72-hour period, it shall be removed to an approved location.

The first paragraph of **subsection 604.04** is deleted and the following substituted therefore:

Traffic control devices designated on the plans or authorized by the Engineer will be measured by the square meter (square foot), meter (linear foot), each, day, or week. The maximum quantities of traffic control devices, other than pavement markings, Advance Warning Arrow Panels and Portable Changeable Message Signs, authorized for payment will be the maximum amounts of each, shown on the plans or authorized by the Engineer, that may be required to be in place at any one time during the construction period.

Subsection 604.04(d) is deleted and the following substituted therefore:

(d) Advance Warning Arrow Panels. Advance Warning Arrow Panels furnished will be measured for payment by the number of days each panel is required and authorized by the Engineer. Payment for a full day will be made for any portion of a day that the panel is authorized and used, but the measurement shall not exceed one per panel in any calendar day. When Advance Arrow Warning Panels are required after the contract time has expired and liquidated damages are being assessed, the Contractor shall furnish such panels at no cost to the Department.

The following is added as **subsection 604.04(e):**

(e) Portable Changeable Message Signs. Portable Changeable Message Signs furnished will be measured for payment by the number of weeks each panel is required and authorized by the Engineer. A "week" is defined as a 7-calendar day period beginning at 12:01 a.m. Monday. Payment for a full week will be made for any portion of a week that the sign is authorized and used in a message mode but the measurement shall not exceed one per sign in any week. No measurement will be made for Portable

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TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES

Changeable Message Signs operated in the caution mode at the option of the Contractor as allowed herein. When Portable Changeable Message Signs are required after the contract time has expired and liquidated damages are being assessed, the Contractor shall furnish such signs at no cost to the Department.

The first paragraph of **subsection 604.05** is deleted and the following substituted therefore:

Traffic control devices completed and accepted and measured as provided above will be paid for at the contract unit price bid per square meter (square foot), meter (linear foot), each, day, or week, as applicable for the particular item, according to the following:

The pay item Portable Changeable Message Sign is deleted and the following substituted therefore:

Pay Item	**Pay Unit**
Portable Changeable Message Sign	Week

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PORTABLE CONSTRUCTION LIGHTING

DESCRIPTION. This item shall consist of portable lighting used to assist motorists traveling through the lane shifts, and at other locations deemed appropriate by the Engineer, during the nighttime hours. This item is to be used as part of the Maintenance of Traffic Plan.

MATERIALS. All lighting equipment will be furnished as required and retained by the Contractor after work is completed. Materials and/or equipment are not required to be new but shall be in good operating condition and in compliance with applicable safety and design codes.

The Contractor shall submit to the Engineer for approval, a lighting plan showing the type(s) and location(s) of the lights proposed. The primary locations for the lights will be in the crossover areas to provide illumination to assist with motorists in safely navigating the crossovers. At a minimum, the Contractor should place two (2) portable lights at each crossover; however additional lights should be used if necessary. The Contractor shall submit the lighting plan on half size plan sheets drawn to scale as part of the lighting plan submittal. In addition to the plan sheets, the submittal shall also include the specific brand names, model numbers and ratings of the lighting equipment. The submittal shall also include power ratings and photometric data.

TOWER LIGHT. The tower lights shall consist of mercury vapor, metal halide, high pressure sodium, low pressure sodium, or LED fixtures mounted on a tower approximately 25' in height. The tower light fixtures shall be heavy duty flood, area, or roadway style with wide beam spread. Tower lights shall be of sufficient wattage and/or quantity to provide an average maintained horizontal illuminance of greater than 5 foot candles (54 lux) over the work area and crossover. LED tower lights shall produce light with a CCT of 4000° K +/- 200° K, and CRI of at least 70. The fixtures shall be weatherproof and supplied with attached waterproof power cord and plug. The tower shall be sturdy and free-standing without the aid of guy wires or bracing. The power supply shall be of sufficient capacity to operate the light(s) and shall be located for the shortest safe routing of cables to the fixtures. A tower light consisting of the combined fixture(s), tower, and power supply is preferred.

The lights shall be aimed and positioned to illuminate the work zone in the vicinity of the crossover areas. There shall be no disabling glare to the motorist. In no case should there be a beam of light aimed higher than 60º above straight down. The lights should be set as far back from traffic as practical and aimed in the normal direction of the traffic flow.

OPERATION. The Contractor shall be responsible for operation of the portable lighting and shall provide sufficient fuel, spare lamps, generators, and qualified personnel to operate the lights. The Contractor is to ensure the lights are well maintained and in operation at night. If a light fails to operate, the Contractor shall repair or replace the portable light at no additional cost to the Department.

METHOD OF MEASUREMENT. Portable Construction Lighting furnished will be measured for payment by the number of days each light is required and authorized by the Engineer. Payment

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JOB NO. 040904

PORTABLE CONSTRUCTION LIGHTING

for a full day will be made for any portion of a day that the light is authorized and used, but the measurement shall not exceed one per light in any calendar day. When Portable Construction Lighting is required after the contract time has expired and liquidated damages are being assessed, the Contractor shall furnish such lights at no cost to the Department.

BASIS OF PAYMENT. Work completed and accepted under the this item and measured as above will be paid for at the contract unit price bid per day which shall be full compensation for operating, inspecting, maintaining, moving, and removing of the portable construction lighting.

Payment will be made under:

Pay Item	**Pay Unit**
Portable Construction Lighting	Day

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SPECIAL PROVISION

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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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CONSTRUCTION PROJECT INFORMATION SIGN

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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AUTOMATED WORK ZONE INFORMATION SYSTEM

This item shall consist of furnishing, installing, operating, maintaining, and moving from one location to another an Automated Work Zone Information System (AWIS) in accordance with the plans and these specifications. The AWIS components 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 collect, process, and display traffic condition data. The data will be used to provide motorists with up-to-the-minute real-time visual traffic information verification, operating speed, and advisory messages via **www.idrivearkansas.com**, closed circuit television (CCTV), e-mail. All of these items shall be considered part of the AWIS.

The Automated Work Zone Information System shall consist of variable message signs (VMS), vehicle detection sensors (VDS), closed circuit television cameras (CCTV), CCTV shall be available to monitor and verify traffic conditions at specified locations. The various messages and scenarios used by this system will be the responsibility of the Contractor and approved by the Engineer.

AWIS output shall push data to the Department's **idrivearkansas.com** website for use by the public for the viewing of all information being relayed to motorists in the construction and affected areas as well as any speed or congestion information from individual traffic sensors. The Contractor shall coordinate with the Department's Public Information Office and their duly appointed representative (i.e. website consultant) to integrate the data onto existing map(s) on the **idrivearkansas.com** website. The data shall be displayed as part of map layers with icons depicting all devices and at an accurate location based on the latitude and longitude of the device. When a device is relocated, the new position should be updated on the data output. Each icon, when activated, shall display the information supplied or displayed by that traffic control sensor/device. The information linked to or displayed with each icon shall be in real-time. This shall occur by the system polling each device a minimum of once every 60 seconds.

SYSTEM REQUIREMENTS.

AWIS: The Automated Work Zone Information 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 AWIS components. Main lane closures will not be permitted until the AWIS is fully operational. After approval of the Operational Test report by the Engineer, the Contractor shall maintain the AWIS as fully operational for 24 hours a day, 7 days a week, 365 days per year until the project is substantially complete. The AWIS shall utilize sufficient equipment to collect, monitor, and disseminate accurate and timely information about traffic and travel conditions in and near the work zone. Additional equipment deemed necessary by the Engineer in order 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.

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

(2) Equipment. All equipment components of the AWIS, including VMS, VDS, and CCTV, 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 in 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.

b. Vehicle Detection Sensors. Each vehicle detection sensor shall be capable of monitoring traffic speed with a detection range of up to 250 feet and the ability to detect up to 10 lanes of traffic in multiple directions.

c. Closed Circuit Television. The portable CCTV shall be mounted on trailers capable of supporting the camera at a height of 30 ft. The CCTV shall include a solar powered Ethernet connection, 35X optical zoom and 12X digital zoom, IP66 rating and be capable of H.264/Motion JPEG video compression. The CCTV will allow viewing at a minimum of 1 frame per second. The CCTV system shall contain a camera system that automatically changes from color mode to black and white mode under low light conditions in order to render a more detailed image.

The images shall be shown on any computer with a browser capable of viewing JPEG format images.

The vendor shall provide a CDN (Content Delivery Network) to aggregate the video data streams from any AWIS CCTV to a centralized location to reduce bandwidth consumption from each individual CCTV head to head end users and allow for separate controllable/configurable steams for the public and operators.

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The CDN should be capable of allowing the Department to stop and start video feeds for public view while not interfering with the provided feeds for the Department's use.

(3) Communications. The AWIS shall be installed to provide constant communication to and from VDSs, VMSs, and CCTVs to the central server and software. The AWIS shall have a complete 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 AWIS server, VMS, VDS, and CCTV 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 Work Zone Information 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 AWIS. 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 AWIS 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, VDS, or a CCTV 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.

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If the current speed on an approaching roadway segment is at or above the speed limit, the upstream VMS will display either the following message or one approved by the Engineer:

WORK ZONE XX MILES AHEAD

DRIVE SAFELY

If the current speed drops to less than 45 MPH but greater or equal to 20 MPH, then either the following message or one approved by the Engineer will be displayed:

SLOWING TRAFFIC AHEAD

SPEEDS 20 – 45 MPH

If the current speed on the approaching roadway drops below 20 MPH then either the following message or one approved by the Engineer will be displayed:

STOPPING TRAFFIC AHEAD

SPEEDS UNDER 20 MPH

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 AWIS 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 AWIS 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 AWIS, 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.

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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 AWIS during the Operational Test period. Each entry shall include the following information:

- Identity of equipment on which work was performed
- 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 AWIS will be considered fully operational and time charges for the AWIS 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 (which includes e-mails and data push to www.idrivearkansas.com) is discovered to be providing inaccurate information regarding traffic flow, it shall be shut down immediately upon discovery.** 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 Automated Work Zone Information 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, Portable Closed Circuit Television Systems, speed and volume sensors, communications equipment, and all hardware and software required to operate the signs and the data connection to **www.idrivearkansas.com**. The video feeds to **www.idrivearkansas.com** are included in this component listing. 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+B Method)" special provision) by 24 and rounded down to the nearest dollar. This charge will continue until all components of the AWIS 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 Automated Work Zone Information 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 Automated Work Zone Information 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 a fully operational status.

If a component of the AWIS 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) AWIS Mobilization. The Automated Work Zone Information System Mobilization will be measured as a Lump Sum item.

(b) AWIS Operation. The Automated Work Zone Information 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 Automated Work Zone Information System will be measured for payment by the month based on the number of days the system is "fully operational" during the project. If the AWIS 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 the Vehicle Detection System, Variable Message Signs, and Closed Circuit Television System. Furnish and Install the Vehicle Detection System, Variable Message Signs, and the Closed Circuit Television System 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 VDS, VMS, or CCTV Camera. 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) AWIS 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 AWIS; for testing of all VDS, VMS, and CCTV cameras; for integration of the AWIS 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.

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(b) Furnish and Install Vehicle Detection System (VDS). 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 Vehicle Detection Systems; 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) Furnish and Install Closed Circuit Television System (CCTV). 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 Closed Circuit Television System; 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.

(d) 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.

(e) AWIS Operation. Work completed and accepted under the item Automated Work Zone Information 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 AWIS, including the Central Data server; all VMS, all VDS, and all CCTV; for renewing all FCC and/or FHWA permits and licenses; for maintaining the data feed to **www.idrivearkansas.com**; 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.

(f) 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 VDS, VMS, or the CCTV. Relocation of traffic drums shall also be included in this cost.

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Payment will be made under:

Pay Item	Pay Unit
AWIS Mobilization	Lump Sum
Furnish and Install Vehicle Detection System	Each
Furnish and Install Closed Circuit Television System	Each
Furnish and Install Variable Message Sign	Each
AWIS Operation	Month
Device Relocation	Each

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MOBILE SPEED NOTIFICATION SYSTEM (SPECIAL)

GENERAL. This item consists of furnishing and operating a fully operational Mobile Speed Notification System in accordance with these specifications. This system will consist of all hardware, software, and other equipment necessary to collect and process speed data of moving vehicles (trucks and passenger vehicles) at speeds ranging from 10 to 99 miles per hour (mph). The System shall utilize a trailer for storing all equipment and deploying at the site. The speed information shall be shown on an LED display as an alert to motorists entering the work zone.

CONFIGURATION. The Mobile Speed Notification System will be furnished in a trailer that houses all the equipment necessary for this system. The system shall be a commercially available production model. The Mobile Speed Notification System should be designed for a set-up time or take-down time of under 5 minutes. The System shall be capable of fully operating on battery power alone for a minimum of 120 hours (five days). A fully deployed system will show the following information:

* SPEED LIMIT XX
* Variable LED Display
* YOUR SPEED

Where XX is the posted speed limit and the LED display shows the speed of the motorist's vehicle and YOUR SPEED is a sign included on the trailer.

The Mobile Speed Notification System shall also include a maximum speed cut-off that limits the speed displayed.

The system shall measure speed with a radar unit that is designed to detect speed of approaching vehicles. It shall detect approaching vehicles at a minimum of 1000 feet and shall be accurate to plus or minus one mile per hour.

TRAILER. A single axle type trailer with a weather resistant enclosure for all electronic equipment will be provided. The trailer should be capable of transporting all the equipment necessary to deploy at a site. Stabilizing jacks mounted to the trailer frame shall be included. Wiring, reflectors, and lights meeting federal and state requirements for trailers shall be installed. The flat edges of the trailer tongue and framing shall be marked with red and white conspicuity tape. The trailer shall be designed to act as a frame for the regulatory speed sign and the LED display. This LED display should be permanently installed in or on the trailer.

The LED panel shall display speeds using two-digit numbers that are a minimum of 18 inches tall. The display shall be amber in color and visible from a minimum of 600 ft. Speeds shall be displayed in miles per hour (mph) at a range from 10 to 99 mph. The panel shall be equipped with a photocell or other device to automatically adjust the display for day and night operations.

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A mounting system shall be included in the trailer that will position a 48 inch by 60 inch regulatory speed sign (R2-1) above the trailer or LED panel. The R2-1 sign shall be installed when the system is deployed and shall meet the requirements for signs in Section 604.02 of the Standard Specifications.

In addition, a minimum of one solid, non-flashing blue light(s) shall be installed either above or on both sides of the regulatory sign. The light(s) shall be a minimum of 4" x 4" lamp area but not to exceed 8" x 8" and have a minimum brightness of 200 Lumens. The light(s) shall be controlled by a switch that will permit the system to be used with the lights on or off.

POWER SUPPLY. A 12 volt system will be used to power the system. A minimum of one deep cell marine battery shall be supplied. An AC charging system along with a solar power charging system shall be included. A solar panel shall also be included that provides continuous charging of the batteries during optimum conditions. The solar panel shall be attachable to the trailer and include all components necessary for operation.

ELECTRONICS. The electronic control panel shall be weather resistant. All controls, including alert signals, maximum speed cut-off, voltage readings, and radar sensitivity shall be easily accessible in the control panel.

OPERATION. The Contractor shall deploy the system in accordance with the plans or as directed by the Engineer. The contractor shall be responsible for operating, monitoring, and maintaining the system during deployments and moving the system between various stages/locations on the project as directed by the Engineer.

The blue lights shall only be turned on when the Department provided Photo Radar Trailer System is active and law enforcement units are on site to conduct speed enforcement actions.

The system shall be delineated by the use of traffic drums in accordance with the plans. Traffic drums used for delineation of the system will not be measured and paid for separately but shall be considered included in the price bid for the Mobile Speed Notification System.

METHOD OF MEASUREMENT. Mobile Speed Notification System-Special will be measured for payment by the each.

BASIS OF PAYMENT. Work completed and accepted under the item of Mobile Speed Notification System-Special and measured as provided above will be paid for at the contract unit price bid for Mobile Speed Notification System-Special, which price shall be full compensation for furnishing, installing moving, and maintaining the system; and for all labor, equipment, tools and incidentals

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necessary to complete the work. The R2-1 speed limit sign mounted to the trailer will not be measured and paid for separately but will be considered subsidiary to the item Mobile Speed Notification System-Special.

Payment will be made under:

Pay Item	**Pay Unit**
Mobile Speed Notification System (Special)	Each

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CONCRETE DITCH PAVING

Subsection 605.02: Delete the last sentence of the first paragraph and replace with the following:

The Department will perform all acceptance sampling and testing at the frequencies shown for Contractor acceptance testing in Subsection 802.06 except the standard lot size for acceptance of slump, air content, and compressive strength of concrete will be 2000 cubic yards (1500 cubic meters) of mix, with each standard lot divided into four sublots of 500 cubic yards (375 cubic meters).

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CULVERT CLEAN OUT

DESCRIPTION: This item shall consist of the removal and disposal of any obstructions impeding the natural flow of water through Pipe Culverts or Box Culverts at locations shown on the plans or as designated by the Engineer.

CONSTRUCTION METHODS: The Contractor shall remove and dispose of all obstructions to culverts shown on the plans or designated by the Engineer by any method approved by the Engineer. The Contractor shall remove the obstructions without damaging the existing culvert. Any damage to the existing culvert resulting from the Contractor's operation of clean-out will be repaired by the Contractor at no cost to the State. The material removed by the Contractor from the culverts shall be disposed of at a site approved by the Engineer.

METHOD OF MEASUREMENT: Culvert clean out will be measured by the each for each location of culvert shown on the plans or as designated by the Engineer to be cleaned out. Regardless of the number of pipes the existing pipe culvert has, the measurement shall be by the each for that particular location.

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 "Culvert Clean Out", which price shall be full compensation for the removal and disposal of any obstructions, and for all equipment, tools, labor, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Culvert Clean Out	Each

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PLASTIC PIPE

Section 606 Pipe Culverts of the Standard Specifications for Highway Construction, Edition of 2014, is hereby expanded to include the following:

Subsection 606.02(d)(1) is hereby deleted and the following is substituted therefore:

(1) Polyethylene Pipe. The manufacture and furnishing of high density polyethylene pipe ranging in diameter from 18" (450mm) minimum to 48" (1200mm) maximum shall be according to AASHTO M 294, Type S. Polyethylene pipe shall have a corrugated outer shell with an essentially smooth wall waterway. Couplings and fittings supplied or recommended by the pipe manufacturer shall be used.

Subsection 606.02(d)(2) is hereby deleted and the following is substituted therefore:

(2) PVC Pipe. The manufacture and furnishing of PVC pipe ranging in diameter from 18" (450mm) minimum to 36" (900mm) maximum shall be according to ASTM F949, Cell Classification 12454. PVC pipe shall have annular or helical projections or ribs on the outer surface and an essentially smooth wall waterway. Couplings and fittings supplied or recommended by the pipe manufacturer shall be used.

The following is added as Subsection 606.02(d)(3):

(3) Polypropylene Pipe. The manufacture and furnishing of polypropylene pipe ranging in diameter from 18" (450mm) minimum to 60" (1500mm) maximum shall be according to AASHTO M330, Type S Polypropylene pipe shall have a corrugated outer shell with an essentially smooth wall waterway. Couplings and fittings supplied or recommended by the pipe manufacturer shall be used.

Subsection 606.02(k) is hereby deleted and the following is substituted therefore:

(k) Structural Bedding and Structural Backfill for Plastic Pipe Culverts shall meet the requirements for the material shown in the Plans and shall meet the requirements as shown in Subsection 302.02 of these Specifications except that the maximum particle size shall be 1" (25.4mm) for Structural Bedding and 1½" (37.5mm) for Structural Backfill.

Subsection 606.03.(a) second paragraph is hereby deleted and the following is substituted therefore:

Pipe culverts under the roadbed shall be so placed that the minimum depth of cover for pipe of any diameter or type shall be not less than the minimum cover as shown in the Plans, including a minimum of 12" (304.8mm) of pavement and/or base.

The following is added as Subsection 606.03(h):

(h) Acceptance Testing of Installed Polyethylene, PVC, and Polypropylene Pipe. All plastic pipes installed for storm drainage systems shall be tested for acceptance by the Contractor using a method consisting of, but not limited to, the following: electronic deflectometers, video cameras, or go/no-go mandrel. These tests shall be conducted not less than 30 days following installation of the pipe. The Engineer will witness all tests.

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At least 10 percent of the total quantity of each size of plastic pipe installed for storm drainage on the project shall be inspected for deformations using one of the approved methods listed above. The Engineer may select the areas to be tested. If the test indicates excessive deflection in the selected length of pipe, the Engineer may require additional lengths of pipe be tested in increments of 10 percent of the total installed length. Any pipes with a reduced diameter of 5 percent of the actual inside pipe diameter shall be removed and re-laid, if undamaged, or replaced with a new pipe at no cost to the Department. Re-laid pipe and new pipe shall be retested at no cost to the Department.

If the mandrel test is selected, a nine-point mandrel with a diameter equal to 95 percent of the nominal diameter of the pipe shall be used. The mandrel shall be of a shape similar to that of a true circle enabling the gauge to pass through a satisfactory pipeline with little or no resistance and shall be designed to prevent tipping from side to side and to prevent debris build-up from occurring between channels of the adjacent fins or legs. Each end of the mandrel shall have fasteners for attaching pulling cables. The mandrel shall have nine various sized fins or legs of appropriate dimensions for various diameter pipes. Each fin or leg shall have a permanent marking that states its designated pipe size. For acceptance testing, the mandrel must pass through the entire section between manholes or other structures in one pass when pulled by hand without the use of excessive force.

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SETTLEMENT MONITORING

Description. This item shall consist of furnishing, installing, and monitoring of pipe riser settlement monitoring devices (settlement plates) at locations specified on the plans, to monitor magnitude and rate of settlement occurring at a point beneath Rock Fill and compacted embankment (embankment fill) during and subsequent to construction of the embankment fill. The data obtained from these devices are utilized to determine if piling construction can be commenced so that downdrag on piles is negligible. The data will also be used to determine when drainage structures and pavement construction can be commenced such that anticipated long term settlement is mitigated. All surveying and recording of settlement plate data shall be performed by an Arkansas licensed surveyor.

Materials. Components and assembly of settlement plates shall comply with the details illustrated in Attachment 1 of this Special Provision (SP). A settlement plate system shall include a nominal 1-inch-diameter Schedule 40 threaded steel riser pipe attached to a rigid wooden or metal base plate (nominal 24-inch-square) utilizing a threaded steel floor flange and protected with a nominal 3-inch-diameter Schedule 40 PVC sleeve (casing) that is placed over the base plate and centered around the steel riser pipe.

The steel riser pipes, and PVC protective sleeves shall be supplied in standard 5-foot sections, except that the first section of protective sleeve shall be slightly shorter to expose the steel riser pipe for facilitating survey measurement and joining additional pipe sections. The riser pipe sections shall be joined utilizing threaded pipe couplings. The PVC protective sleeve sections shall be joined with unthreaded PVC couplings and shall prevent embankment fill material from coming into contact with the steel riser pipe. A cover is required for the top PVC casing section.

Installation and Monitoring. Fixed benchmarks shall be established well outside the embankment fill area for elevation determination as accepted by the Engineer. Settlement plates shall be installed prior to any embankment fill placement at locations specified in the plans on a firm, level surface that is free of large rocks or clods, and base plate set on 3 inches granular leveling course. The base of settlement plates shall be placed approximately 12 inches below the prepared ground surface for seating purposes. Steel riser pipe shall be plumb. Settlement plates shall be located such that construction traffic in the vicinity is minimal. Adjustment of planned locations due to potential traffic influence or other reasons shall be approved by the Engineer.

Immediately after the first riser pipe section and its top coupling are installed and secured, initial elevation reading shall be established at the top of the first coupling. This is the initial reading on the reference point (defined as the top of the first coupling).

All the riser pipe joints shall be adequately tightened utilizing pipe wrenches. Relative rotation of existing joint components shall be prevented as new sections are added so that length of existing units will not change. Marks can be made on the components of a joint to verify relative rotation has not occurred. Embankment fill over the base plate and around the PVC protection sleeves should be hand compacted to avoid disturbing the settlement plates. Rock Fill (Class 3 Aggregate) should be placed adjacent to riser sections in Rock Fill embankment zones.

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SETTLEMENT MONITORING

Elevation of the settlement plates shall be surveyed at least once a day during construction of the embankment fill, or every other day when construction is not occurring on the embankment fill. More frequent readings may be required by the Engineer. After embankment fill construction is complete to the finished subgrade level, the elevation shall be determined frequently enough to indicate significant changes in the rate of settlement. Normally, the time between surveys shall be twice a week for the first eight (8) weeks immediately after completion of the embankment. The interval between surveys may be increased to one (1) time per week with approval of the Engineer until settlement readings are no longer required. The Contractor shall be responsible for securing settlement plate survey readings. Settlement plate survey readings shall be secured at the same time of day each day by the same surveyor using the same survey equipment. Readings must be secured to the nearest 0.01 foot.

All elevation measurements shall be performed on the top of secured couplings. The length of an added riser pipe unit (riser pipe and its top coupling) shall be determined as the difference in elevations between the tops of two (2) adjacent couplings that are surveyed essentially at the same time (within 30 minutes) without additional fill placement.

As a minimum, data collection for a settlement plate shall include project number, surveyor name, identification and location (Site No. / Bridge No., abutment, station and offset, etc.) of the settlement plate, survey date and time, fill height at the time of survey, and surveyed elevations. Any extreme or unusual events shall also be documented, such as rainstorms, flooding, local blasting, earthquake, etc. Any disturbance to the settlement plate, anomalies to the settlement data and corrective action shall be noted. Settlement plate graphs, expressed as recorded elevation at the reference point (top of the first coupler) versus days elapsed, shall be developed by the Contractor for monitoring settlement. The elevation at the reference point shall be determined by subtracting the accumulated length of added riser pipe units from the surveyed elevation on top of the current riser pipe unit.

Recommended procedures for installation and monitoring of settlement plates are provided in this SP as Attachment 2. A form for recording survey data is also included in this attachment.

Data Interpretation and Piling Commencement. Settlement plate survey readings shall be submitted to the Engineer the same day that readings are secured by the Contractor. The Engineer, or his representative, will be responsible for interpreting the data. Piling and drainage structures installation and pavement construction shall not be commenced until approved by the Engineer. Materials Division and Bridge Division can be consulted for review and interpretation of the data to determine whether consolidation settlement is essentially complete or reduced to a rate such that piling and drainage structures installation and pavement construction can be started. Estimated settlement wait times after completion of embankment construction are shown on the plans. Actual wait times will be determined by the Engineer. Estimated settlement wait periods should be reflected in the Contractor project's bid and baseline CPM schedules.

Disposal. After settlement monitoring is considered complete and further monitoring is not necessary, the riser pipe and protective sleeve shall be cut to a minimum 18 inches below final

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SETTLEMENT MONITORING

subgrade surface elevation and the area around the abandoned settlement device shall be properly backfilled and compacted with embankment material.

Basis of Payment. Furnishing of materials and components, installation, maintenance, and data collection and analysis for the settlement plates will not be paid for separately but shall be considered subsidiary to the item "Compacted Embankment". Any settlement plate damaged, improperly installed or maintained, or data determined unsuitable by the Engineer shall require the Contractor to replace the settlement plate and establish baseline reference survey readings prior to continuing with embankment fill construction. No separate payment will be made for replacing defective settlement plates or delays caused by unsuitable data.

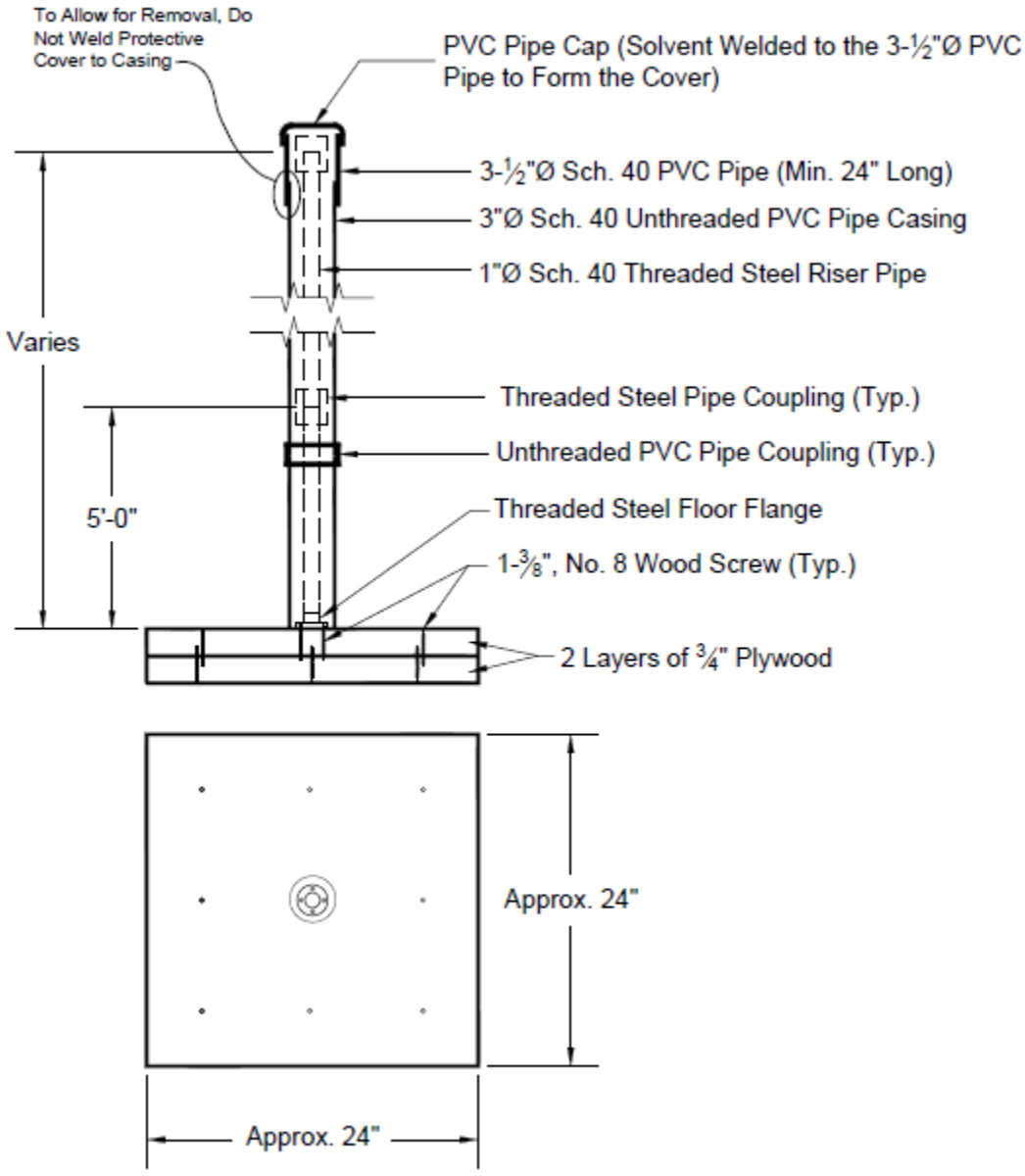
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SETTLEMENT MONITORING

Attachment 1 – Settlement Plate Detail



NOTES:

1. Place base plate on level surface, approximately 12 inches below prepared subgrade surface elevation and hand compact backfill adjacent to PVC.
2. Wooden base plate is shown in this detail due to inexpensive materials and easy installation. Metal base plate, if adequately rigid, is also acceptable.

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Attachment 2 – Recommended Procedures for Settlement Monitoring

Installation:

1. Determine the locations for installing a settlement device by survey. Locations of settlement plates are shown on the plans. If settlement readings are to be continued after completion of the fill, it is imperative that the unit be located outside of the travel way of vehicle or construction equipment. Adjustment of planned settlement plate locations shall be approved by the Engineer.
2. After preparation of the ground surface but prior to placement of any embankment fill material, excavate a pit to the depth of approximately 12 inches below the prepared ground surface elevation at the previously determined location. Prepare a firm, level area for the settlement device at the bottom of the pit and place approximately 3 inches of granular material leveling course.
3. Assemble the settlement device as shown in Attachment 1. Attach a pipe floor flange to the center of the wooden platform with bolts or lag screws. Then screw the first pipe section into the floor flange. Place a pipe coupling on the top of the pipe and tighten all joints in the assembly using pipe wrenches. After the joints are secured, make marks on the joint components to check relative rotation.
4. Slip the first protective sleeve over the riser pipe until it is approximately 2± inches above the floor flange. The first protective sleeve (approximately 4 feet long) shall be slightly shorter. Place a duct tape or other seal tape to hold the protective sleeve in place. Do not fix the protective sleeve to the base platform or the riser pipe. This protective sleeve is used to absorb the friction between the fill material and the settlement unit and, therefore, must be free to move independently from the wood platform and riser pipe.
5. Firmly seat the settlement device on the prepared area in the bottom of the pit. Then fill and compact by hand using fine embankment material free of large rocks and clods around the settlement device to a depth of approximately 6 inches.
6. Using a spirit level, check to make sure the riser pipe is plumb, then carefully fill the pit with fine embankment material and compact in place.
7. Immediately after the settlement device has been installed and backfilled to existing ground, survey the elevation of the top of the first pipe coupling.
8. Cap the PVC sleeve utilizing the protection cover.
9. Establish flagging / warning signs to alert construction equipment operators.

Settlement Monitoring:

1. Survey the elevation of the top of the riser pipe coupling in accordance with specified frequency and to the specified precision.

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2. During fill placement, sections of riser pipes and protective sleeves will be added. When extending the riser pipe, use the following procedure:
    a. Remove the PVC cover, survey and record the elevation of the top of the existing coupling.
    b. Attach a coupling to the new riser pipe section that will be added and tighten the joint with pipe wrenches.
    c. Insert the added section (with secured top coupling) into the existing coupling and tighten the joint by using one pipe wrench on the existing coupling and one pipe wrench on the added riser pipe section. While tightening the joint, do not allow the existing coupling to turn. Turn only the added length of riser pipe.
    d. Survey and record the elevation of the top of the new coupling.
    e. Determine the length of added riser pipe section as the difference between the two elevation readings obtained in Step d and Step a (i.e., elevation on top of new coupling minus elevation on top of existing coupling).
    f. Add and secure a standard (5 feet) protective sleeve to the existing sleeve. Place the protective cover over the sleeve and reestablish the flagging signs.

Data Collection and Reduction:

Column 1 - Record the reading date.

Column 2 – Survey and record the elevation of the top of the current riser pipe coupling.

Column 3 – Calculate and enter the cumulative length of all the other riser pipe sections in addition to the first pipe section.

Column 4 – Calculate and enter the elevation of the reference point, i.e., top of the first coupling (Column 2 minus Column 3).

Column 5 - Calculate and enter the total settlement to the nearest 0.1 inch. This value is obtained by subtracting the current value in Column 4 (current elevation at the reference point) from the value at the top of Column 4 (initial elevation at the time of installation). Convert from 0.00 feet to 0.0 inches

Column 6 – Record the surveyed elevation at the current surface of embankment fill next to the riser pipe / casing location.

Column 7 – Calculate and record the current height of the embankment fill above original ground to the nearest 0.1 foot.

Column 8 - Record the number of calendar days elapsed since the settlement device was installed. (Day of installation equals Day 1).

Column 9 - Record any information that would be helpful in the analysis of data. Be sure to indicate in this column the date and length added to the riser pipe.

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SETTLEMENT MONITORING

Project: Location:	Plate ID: Station/Offset: Design Fill Height: Surcharge Height:	Comments:

Date	RISER PIPE		Elevation at Reference Point**	Settlement	FILL HEIGHT		Elapsed Time	Remarks
	Top of Riser Pipe Elevation	Length of Additional Riser Pipe Sections*			Ground/Fill Surface Elevation	Fill Above Original Ground		
	(ft)	(ft)	(ft)	(in)	(ft)	(ft)	(days)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

*. Cumulative length of all the additional riser pipe sections excluding the first pipe section.

**. Reference point is defined as the top of first coupling.

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JOB NO. 040904

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 terminals. 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

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.

11/15/2024

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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. 040904

UNDERDRAIN FLUSHING AND INSPECTION

DESCRIPTION: This item shall consist of flushing underdrains by means of the use of hydraulic pressure to remove obstructions consisting of foreign material or debris and the use of video inspection equipment to inspect any existing pipe underdrain's location where the drainage cannot be properly restored by flushing methods.

MATERIALS: All materials used shall comply with Section 611.02 of the Standard Specifications for Highway Construction.

EQUIPMENT REQUIREMENTS: Equipment used for flushing the underdrain system shall satisfy the following minimum requirements:

(1) It shall be constructed in a manner capable of negotiating its way through, including around 90° bends, pipelines from 3.5" to 8.0" (88 mm to 200 mm) inside diameter or larger diameter, smooth bore or corrugated drainpipe.

(2) It shall be capable of producing adequate pressure to propel the cleaning hose through up to 300 linear feet (91 m) of laterals and 4" (100mm) pipe underdrains and to remove any debris located in the underdrain system without damaging the pipe.

(3) It shall be designed to allow the use of interchangeable flushing heads and sufficient alternate style cleaning heads shall accompany the equipment as necessary to thoroughly flush all foreign material and debris from the underdrain system.

Equipment used for inspecting the underdrain system shall satisfy the following minimum requirements:

(1) The system shall be capable of providing color video inspection of pipelines from 3.5" to 8.0" (88 mm to 200 mm) inside diameter in a wet, corrosive environment and shall be capable of negotiating a 90° bend in a 4" (100 mm) or larger diameter, smooth bore or corrugated drainpipe.

(2) The system shall be capable of video inspecting up to 300 linear feet (91 m) of laterals and 4" (100mm) pipe underdrains, by push rodding, pull cabling, jetting or tractoring the camera through the line and recording the condition.

(3) The system shall be equipped with a video monitor capable of allowing live viewing of the video inspection.

(4) The system shall be capable of displaying and recording the date, line identification, footage, and type of pipe deficiency.

(5) The system shall be capable of recording the distance traversed by the camera to within 0.5 feet (0.15 m), allowing for overlapping of distances if a reversal is required to permit full-length inspection.

CONSTRUCTION REQUIREMENTS: Rodent screens shall be removed to allow access of the flushing apparatus and inspection equipment to the underdrain pipe, and the rodent screens shall

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UNDERDRAIN FLUSHING AND INSPECTION

be cleaned and repaired or replaced as determined necessary by the Engineer upon completion of the flushing process.

All underdrains located within the project limits shall be flushed and where applicable inspected using the specified equipment in the presence of the Engineer. Video inspection will only be required where flushing is unable to clear an obstruction which prevents the flushing of the full length of that section of underdrain. A video record and written report in an electronic format for the full length of each underdrain where video inspection was required shall be furnished to the Engineer upon completion of the project with interim reports to be submitted promptly when requested by the Engineer. The line identification, distance traversed by the camera, and any pipe deficiency shall be digitally recorded and furnished on a USB flash drive in an acceptable format and the written report containing identical information shall also be submitted electronically.

The Engineer shall determine when the flushing process is complete and if new rodent screens are necessary. Any underdrain pipe that is damaged due to Contractor negligence shall be replaced at no cost to the Department. The Contractor shall install all of the rodent screens promptly after satisfactory flushing is completed on a section of underdrain.

METHOD OF MEASUREMENT:

Flushing Underdrain will be measured by the linear foot.
Underdrain Video Inspection will be measured by the 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 Flushing Underdrain; for flushing of existing underdrains; for cleaning and repairing or replacing rodent screens; for all equipment, tools, labor, and incidentals necessary to complete the work.

Work completed, accepted, and measured as provided above will be paid for at the contract unit price bid per linear foot for Underdrain Video Inspection, which price shall be full compensation for video inspection of existing underdrains and furnishing all video records and written reports and for all equipment, tools, labor, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Flushing Underdrain	Linear Foot
Underdrain Video Inspection	Linear Foot

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JOB NO. 040904

WIRE ROPE SAFETY FENCE (WRSF) SPECIFICATIONS

DESCRIPTION: This item shall consist of the construction of a wire rope safety fence (WRSF) in accordance with these specifications and in conformity with the locations, dimensions, lines and grades shown on the plans and in accordance with the manufacturer's recommendation.

GENERAL: The Contractor shall have the option of constructing any of the WRSF systems listed below. The same type WRSF must be used for all safety fences.

Either of the WRSF systems will be acceptable provided that:

1. The basic WRSF geometry, including line and grade, length and limits of the WRSF shall be as shown on the plans.

2. The WRSF described by these specifications shall be a four (4) strand prestretched cable, capable of roadside or median installations as shown in the plans, and shall meet the requirements of the Manual for Assessing Safety Hardware (MASH) for test level 3 conditions on 6:1 or flatter slopes. If FHWA Letters of Eligibility have been obtained by the manufacturer for the WRSF, the manufacturer shall provide the FHWA Letters of Eligibility, with corresponding test results, prior to approval for use.

3. The WRSF End Terminals shall meet the requirements of Manual for Assessing Safety Hardware (MASH) for test level 3. If FHWA Letters of Eligibility have been obtained by the manufacturer for the WRSF, the manufacturer shall provide the FHWA Letters of Eligibility, with corresponding test results, prior to approval for use.

MATERIALS: All materials used in this construction shall comply with the following requirements:

(a) Wire Rope

(1) The galvanized wire rope shall be ¾" 3 X 7 construction meeting AASHTO M30-92 (2000)/ASTM A741-98 Type 1 Class A coating except as modified below:

(2) Table 1 Type 1 Breaking Strength Minimum = 39,000 pounds (17.7 tonnes)

(3) In addition to this provision, the wire rope shall be prestretched during manufacture to exhibit a minimum modulus of elasticity of 11,805,090 pounds/in^2 after prestretching. Manufacturer shall provide certification that cable was prestretched.

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WIRE ROPE SAFETY FENCE (WRSF) SPECIFICATIONS

(b) Fittings

(1) Threaded Terminals (**swaged type as shown in the plans**) shall be furnished and may be shop or field swaged **(Note: Other types of connection SHALL NOT be considered)**. Threaded terminals shall be Right Hand (RH) or Left Hand (LH) threaded.

The body of the threaded terminal shall provide a minimum of 5.9 inches wire rope engagement depth. Fully fitted ropes shall develop a Minimum Breaking Load (MBL) of 36,800 pounds (16.7 tonnes). Threaded terminals shall be galvanized, after threading, to ASTM A153, or be constructed of stainless steel.

(2) Turnbuckles shall be of the size and shape as recommended by the manufacturer. One end of the turnbuckle shall be threaded RH and the other end LH to accept threaded rope terminals. Turnbuckles shall be of the solid, closed, or open body type with two (2) inspection holes to determine threaded rope terminal penetration. They shall allow for a minimum of six (6) inches of penetration from each end. Turnbuckles shall develop minimum tensile load without yielding to 36,800 pounds (16.7 tonnes) and shall be galvanized to ASTM A153 after threading, or be constructed of stainless steel.

(3) Anchor Fittings shall be provided at the anchor terminations of each wire rope. The type and design, into which the wire rope is inserted, shall be as recommended by the manufacturer. The fitting shall insure proper adjustment of the wire rope for proper length and shall develop minimum tensile load of the entire wire rope of 36,800 pounds (16.7 tonnes) without yielding. They shall be capable of release and reuse.

(c) Line Post

(1) All posts shall be of the size and shape as recommended by the manufacturer and shall be uniformly spaced as to limit the deflection to a maximum 8’-0”, but shall not exceed 15’-0” O.C. Posts shall have rounded edges, as a minimum, on the traffic approach side. The socketed version shall be used and shall include a metal sleeve, installed in a concrete foundation, for insertion of the post. All required welding shall be by Certified Welders to AWS D1.1. Posts shall be ASTM A-36, ASTM A-525 or ASTM A1011 SS Grade 36 Type 1 steel galvanized to ASTM A-123, after fabrication, and have a means of holding the wire ropes at design heights.

(2) All posts shall be furnished with a post cap. The post cap shall be provided with retro-reflective sheeting properly sized to fit each side and meeting **ASTM D4956 Type IV adhesive sheeting**. Sheeting color shall be yellow and provide a **minimum of six (6) square inches of reflective surface per post facing.**

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WIRE ROPE SAFETY FENCE (WRSF) SPECIFICATIONS

(3) Sockets shall be fabricated from a minimum eleven (11) gauge, hot rolled mild steel with bottom end closed as specified by the manufacturer and galvanized to ASTM A-123, after fabrication. An eight (8) inch diameter foundation reinforcing ring with four (4) inch overlap made from number three (3) deformed rebar shall be furnished for installation in line post concrete foundations as shown in the plans. Or, this reinforcement may be formed as a box shape approximately ten (10) inch diagonal dimension with four (4) inch overlap. Other reinforcement as recommended by the manufacturer shall be provided. Covers shall be installed around the base of each post to protect the socket from dirt and other debris.

(d) Wire Rope Safety Fence (WRSF) End Terminal

(1) Fabricated anchor components shall be of the size and shape conforming to the manufacturer's recommendations. All posts shall be socket mounted, unless approved by the Engineer, with the sockets set in concrete foundations. The anchor shall be of the type and size specified by the manufacturer for the existing soil conditions encountered. All soils information deemed necessary by the manufacturer shall be provided by the contractor.

(e) Concrete

(1) All concrete used in the installation of the WRSF shall meet the requirements for **Class S Concrete** in Section 802 of the Standard Specifications, Edition of 2014. If the soils are other than a strong cohesive classification, the manufacturer shall be contacted for recommended installation parameters. The Department will perform all acceptance sampling and testing at the frequencies shown for contractor acceptance testing in Subsection 802.06.

CONSTRUCTION REQUIREMENTS: The alignment and location of the WRSF shall be according to the plans or as directed by the Engineer. Line posts shall be spaced according to the manufacturer's recommendations to limit the deflection to a maximum 8'-0", but shall not exceed 15'-0" O.C., and shall be set plumb, in line (unless approved by the Engineer), to provide an aesthetically pleasing line of sight. Extreme care shall be taken to ensure proper wire rope height when installing line posts.

Concrete for line posts and end terminals shall be placed in excavations of natural, undisturbed ground. Excavation shall have vertical sides, to the size and shape per the manufacturer's recommendation. If over-excavation is unavoidable, additional concrete shall be used to completely fill the excavation.

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WIRE ROPE SAFETY FENCE (WRSF) SPECIFICATIONS

Wire rope shall be placed per the manufacturer's recommendation and be tensioned immediately after initial installation. The tension shall be rechecked and adjusted, if necessary, three (3) to five (5) weeks after initial tensioning on segment lengths over 2,500 feet (760 m). A tension log form shall be completed showing the time, date, location, wire rope temperature, and final tension reading, signed by the person performing the tension reading. This log shall be furnished to the Engineer upon completion of work. This form shall also include the WRSF manufacturer's recommended tension table.

BASIS OF ACCEPTANCE: Basis of acceptance of the WRSF furnished shall be based on the following:

(a) Prequalification as set forth under this specification.

(b) Visual inspection of all items furnished for condition and conformance with dimensional and other requirements.

(c) Receipt of manufacturer's certification and material test reports for wire rope, posts, and anchor components.

(d) Determination of the weight of galvanized coating by means of a magnetic gauge furnished and operated by the contractor and witnessed and approved by the Engineer, at the project site prior to installation.

METHOD OF MEASUREMENT: WRSF will be measured complete in place and the measurement will be to the nearest linear foot including end anchor terminals on each segment.

BASIS OF PAYMENT: Work completed, accepted, and measured as provided above will be paid for at the contract unit price bid per linear foot for Wire Rope Safety Fence, which price shall be full compensation for furnishing all materials, including concrete, reinforcing steel and WRSF End Terminals; for installing all posts with caps, socket covers, wire rope and reflectors; for excavation and backfill; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Wire Rope Safety Fence	Linear Foot

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WIRE ROPE SAFETY FENCE MAINTENANCE MATERIALS

DESCRIPTION: This item shall consist of furnishing, delivering and stacking Wire Rope Safety Fence maintenance materials in accordance with these specifications and to the location directed by the Engineer.

CONSTRUCTION METHODS: The following parts shall be furnished and delivered to the District 4 Headquarters, located at 808 Frontier Rd., Barling, AR 72923 and stacked where directed by the Engineer.

The maintenance materials to be delivered are as follows:

1. 200 LINE POSTS WITH ALL ABOVE GROUND PARTS FOR ATTACHING WIRE ROPE TO EACH POST.

2. ALL PARTS TO RECONSTRUCT 4 COMPLETE TERMINAL ENDS, NO REBAR, OR AT THE DEPARTMENT'S OPTION, 80 LINE POSTS WITH ALL ABOVE GROUND PARTS FOR ATTACHING THE WIRE ROPE TO EACH POST.

METHOD OF MEASUREMENT: "Wire Rope Safety Fence Maintenance Materials" will be measured by the Lump Sum.

BASIS OF PAYMENT: Payment for furnishing, delivering and stacking "Wire Rope Safety Fence Maintenance Materials" will be paid for by the Lump Sum.

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WRSF TRAINING WORKSHOP

In order to provide the Department and Emergency Response Personnel information pertaining to the Wire Rope Safety Fence (WRSF), the Contractor shall coordinate a training workshop to be presented by the Manufacturer **prior** to the installation of the WRSF.

The Contractor shall coordinate a date on which the workshop will be held with the Resident Engineer and the Manufacturer.

Persons to be contacted by the Resident Engineer to attend this workshop are:

- District 4 Personnel
- Emergency Response Personnel in and around the project area

The Department and/or the Contractor may bring other personnel or interested parties at their option.

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.

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WIRE ROPE SAFETY FENCE (POST REPAIR)

DESCRIPTION: This item shall consist of the replacement of damaged parts and associated parts.

MATERIALS: All materials used to repair the WRSF shall meet the requirements of those listed in the special provision "Wire Rope Safety Fence (WRSF) Specifications". Replacement posts and associated parts shall be new and shall match the WRSF components currently installed at the job site.

CONSTRUCTION REQUIREMENTS: In the event that the WRSF is damaged, after initial acceptance, at no fault of the Contractor, all damaged components shall be replaced immediately by the Contractor to restore the WRSF to a fully functional condition. The repair shall include removal and disposal and replacement of any and all damaged portions of the WRSF. The wire rope shall be checked and adjusted, if necessary, immediately following replacement of all damaged posts. A tension log form shall be completed showing the time, date, location, wire rope temperature, final tension reading, and signature of the person performing the tension reading. This log shall be furnished to the Engineer upon completion of the repair for approval of the work.

The Contractor shall begin the repair work as soon as possible after being notified by the Engineer that repairs are needed.

METHOD OF MEASUREMENT: Measurement will be based on the number of posts replaced to restore the WRSF to a fully functional condition. Wire Rope Safety Fence (Post Repair) completed and accepted will be measured by the Each.

BASIS OF PAYMENT: Work completed, accepted, and measured as provided above, will be paid for at the contract price bid per Each for Wire Rope Safety Fence (Post Repair), which price will be full compensation for removal and disposal of the damaged parts; for furnishing and installing replacement parts; for completing and furnishing the tension log; and for all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Wire Rope Safety Fence (Post Repair)	Each

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

GEOTEXTILE FABRIC

Description: Section 625 Geotextile Fabric of the Standard Specifications for Highway Construction, Edition of 2014 is hereby expanded as follows to include a (Type Special) to be used beneath pavements where separation of two dissimilar materials is required:

Subsection 625.02 Materials is hereby expanded as follows:

Geotextile Fabric (Type Special) shall be a non-woven synthetic fabric that complies with the AASHTO M288 requirements for Separation, Class 1 and weighs at least 14.8 oz/yd^2.

Subsection 625.03 Construction Requirements is hereby expanded as follows:

(Type Special) geotextiles shall be installed in such a manner that all splice joints are provided with a 3' minimum lap.

Damages to (Type Special) geotextiles shall be repaired by placing a geotextile patch over the damaged area extending 3' beyond the perimeter of the damaged area.

Subsection 625.05 Basis of Payment is hereby expanded as follows:

Pay Item	**Pay Unit**
Geotextile Fabric (Type Special)	Square Yard

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

CONCRETE BARRIER WALL

Section 631, Concrete Barrier Wall, of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The fourth paragraph of Subsection 631.03(d), is hereby deleted and the following substituted therefore:

> When completed, the concrete shall be cured as specified in Section 501, except a membrane curing compound shall not be used if a textured coating finish is to be applied.

Subsection 631.05 Basis of Payment is hereby expanded to include the items Concrete Barrier Wall (Side Type _).

Payment will be made under:

Pay Item	**Pay Unit**
Concrete Barrier Wall (Side Type _)	Lin. Ft.

ARKANSAS STATE DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

ROADWAY CONSTRUCTION CONTROL

Section 635 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The first sentence of the first paragraph of **Subsection 635.03(a)** is deleted and the following substituted therefor:

The Contractor will establish bench marks and horizontal control points, certified correct, and furnish the data to the Department at the beginning of work. This data shall be provided in a digital format, and shall include at a minimum separate control and alignment files meeting the following requirements:

- Control files shall include points listed by northing, easting and elevation, as well as station and offset and shall be submitted in a format readable by Microsoft Excel (typically .xls).

- Alignment files shall include horizontal alignment for the project and shall be submitted in either .xml or .alg format.

The first sentence of the first paragraph of **Subsection 635.03(b)** is deleted and the following substituted therefor:

Roadway Construction Control shall include use by the Contractor of the plans, approved submitted grades, and the vertical and horizontal control points established by the Contractor as described above to perform all required construction surveying and layout.

The third paragraph of **Subsection 635.03(b)** is deleted and the following substituted therefor:

The Contractor shall profile the sections of the existing Portland cement concrete pavement sections that are to be removed and disposed of prior to the beginning of any operations which may be detrimental to the existing pavement. Such profiles shall be taken along both the inside and outside edge of the existing concrete pavement, as approved by the Engineer and at 50-foot maximum intervals. This profile data shall be used by the Contractor to establish the finished grade line. The finished grade line, established by the Contractor, shall be submitted to and reviewed for acceptability by the Engineer, prior to the construction of the finished roadway section. Within seven (7) calendar days of receipt of the proposed finished grade line and existing profile data the Engineer shall evaluate and advise the Contractor of the approval of the proposed finish grade line and/or of any needed revisions to it. In establishing controls for the paving operations, the Contractor shall make necessary allowances for variations in the compacted thickness of the bond breaker so that the approved final grade line will be achieved.

The Contractor shall exercise care and discretion in setting construction stakes so they will not interfere with mowing operations.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

ELECTRICAL CONDUCTORS-IN-CONDUIT (ROADWAY LIGHTING)

1. **DESCRIPTION.** This item consists of furnishing, installing, 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.

2. **MATERIALS.** Electrical conductors shall consist of cables of the gauge and number of conductors specified on the plan sheets and shall be type USE-2 or UF with cross-linked polyethylene (XLP) insulation, and 600-volt rated. Electrical conductors shall be UL Listed, and shall comply with ASTM B3, B8, B787, and UL Standard 854. 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 less than 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.

3. **CONSTRUCTION REQUIREMENTS.** The electrical conductors shall be continuously running directly from service points to electrical devices 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 job 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.

   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”,

ARKANSAS DEPARTMENT OF TRANSPORTATION

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JOB NO. 040904

ELECTRICAL CONDUCTORS-IN-CONDUIT (ROADWAY LIGHTING)

"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.

4. **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.

5. **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 (Roadway Lighting) (__ C/ __ A.W.G., ___ .)	Linear Foot

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

ELECTRICAL CONDUCTORS-IN-CONDUIT (ROADWAY LIGHTING)

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

ELECTRICAL CONDUCTORS-IN-CONDUIT (ROADWAY LIGHTING)

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

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

ELECTRICAL CONDUCTORS-IN-CONDUIT (ROADWAY LIGHTING)

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 (ROADWAY LIGHTING)

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

ELECTRICAL CONDUCTORS-IN-CONDUIT (ROADWAY LIGHTING)

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

ELECTRICAL CONDUCTORS-IN-CONDUIT (ROADWAY LIGHTING)

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

ELECTRICAL CONDUCTORS FOR LUMINAIRES (ROADWAY LIGHTING)

DESCRIPTION. This item consists of furnishing and installing electrical conductors from the pullbox next to the illumination pole to the luminaire as noted on the lighting plans and indicated in the wiring details.

MATERIALS. The electrical conductors shall consist of two conductor cables and grounding, see the plan for wire size. Electrical conductors shall be stranded or solid copper, XHHW-2 or UF with rating of 600 volt, suitable for underground duct installation in THHN wires are suitable for applications up to 90ºC (194°F) in dry or wet locations. Electrical conductors shall comply to ASTM Specification B3, B-8, and B-787.

CONSTRUCTION REQUIREMENTS. 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 connecter, such as “Homac RXL,” “NSI Polaris Edge,” “Utica Safetysub,” or equivalent and approved by the Engineer.

Splices in light poles shall be made with a fused breakaway disconnect.

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.

METHOD OF MEASUREMENT. Electrical Conductors for Luminaires will be measured by the linear foot. Multiple conductors shall be measured together, not measured singularly.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per linear foot for Electrical Conductors for Luminaires of the type and size called for on the plans, which price shall be full compensation for furnishing materials, splicing and connections and for all tools, equipment, labor, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Electrical Conductors for Luminaires (Roadway Lighting)	Linear Foot

11/15/2024

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

BRIDGE MOUNTED GALVANIZED STEEL CONDUIT SYSTEM

1. **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 for the subject job. The purpose of the bridge mounted galvanized steel conduit system is to provide cable ways across bridges for future intelligent transportation system (ITS) cables. The conduit bank for future ITS work shall consist of two (2) 4-inch galvanized steel conduits and shall extend from the ITS junction boxes on the bridge and transition to 4-inch nonmetallic conduit where the ITS conduit enters the ground adjacent to the bridge wingwall. The ITS conduit bank shall terminate in a fiber optic concrete pull box as shown on the subject job plans and as described in the Fiber Optic Concrete Pull Box special provisions for this project. Provide brackets, support assemblies, hangers, fittings, bonding jumpers, grounding systems and other installation accessories as required.

2. **MATERIALS AND CONSTRUCTION**

All construction and materials shall be in accordance with the Subject Job Plan Sheets, this special provision, and ARDOT Standard Specifications Section 709. The bridge mounted galvanized steel conduit system shall consist of two (2) 4" diameter rigid galvanized steel conduits. The proposed locations of the two-conduit ITS junction boxes can be found on the ITS plan sheets for this project and the ITS pull box schedule.

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, as specified in the ITS Electrical Junction Box, Metallic special provision for this project, to ensure that each conduit bank of the bridge mounted galvanized steel conduit system remains at the same electrical potential as ground. 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. All fittings used in terminating conduit in pull boxes or equipment cabinets shall be of the same NEMA rating as the pull box or equipment cabinet to maintain proper protection of cable and equipment from the elements.

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

3. **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 the final assembly is in place, all 4" conduits shall be thoroughly cleaned and mandrelled prior to installing pull tape. Each conduit shall be mandrelled by pulling a flexible 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 lbs minimum shall be installed in each empty conduit. The pull tape shall remain accessible from each end at all times.

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

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

BRIDGE MOUNTED GALVANIZED STEEL CONDUIT SYSTEM

E. Where the ITS conduit bank penetrates the bridge abutment(s), each conduit run shall transition from 4" galvanized rigid steel conduit to 4" Schedule 40 rigid PVC conduit per ARDOT Standard Specification Section 710.

4. **METHOD OF MEASURMENT**

The bridge mounted galvanized steel conduit system will be measured by the unit price bid per linear foot.

5. **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 (4")	LF

11/15/2024

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

ITS NON-METALLIC CONDUIT SYSTEM

1. **DESCRIPTION**

This item shall consist of furnishing and installing PVC (polyvinyl chloride) or PE (polyethylene) conduit according to these specifications and at the locations shown on the plans or as directed according to this special provision, Arkansas Department of Transportation's Standard Specifications Section 710, for future intelligent transportation system (ITS) cables. The Contractor may elect to use either type of conduit where non-metallic conduit is shown on the plans; however, each run of conduit shall consist of conduit, fittings, and accessories of one type of material.

The conduit bank for future ITS work shall consist of two (2) 4-inch non-metallic conduits and shall extend from the ITS GRS conduit system at the bridge abutment at the end of each bridge to the Fiber Optic Concrete Pull Box adjacent to the at-grade roadway at each bridge end.

Non-metallic conduit installation trenched in soil, earth fill, or rock shall be installed at a minimum of 18" depth from the top of the conduits to the finished grade (36" to the top of pavement) and be encased in concrete. The conduit trench shall have a subgrade foundation. The concrete encased conduit duct bank shall then be backfilled above the concrete encasement with Class 3 Bedding Course. See Arkansas Department of Transportation Special Provision Rock Fill, Job No. 040904.

All ITS conduits shall be installed with a detectable underground warning tape installed above the conduits. Each installed conduit shall be labeled, cleaned, mandrelled and provided with pull tapes installed.

All ITS conduits installation and construction activities shall comply with Arkansas Department of Transportation Special Provision Settlement Monitoring, Job No. 040904.

2. **MATERIALS AND CONSTRUCTION**

All construction and materials shall be in accordance with the Subject Job Plan Sheets, this special provision, and ARDOT Standard Specifications Section 710.

(a) PVC Conduit.
Conduit, fittings, and accessories shall be PVC suitable for underground, encased, and exposed applications as approved by Underwriters Laboratories according to the National Electric Code. The conduits shall be Schedule 40 rigid PVC.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

ITS NON-METALLIC CONDUIT SYSTEM

(b) PE Conduit.
Conduit, fittings, and accessories shall be polyethylene, suitable for underground, encased, and exposed applications as approved by Underwriters Laboratories according to the National Electric Code. Conduit shall be Schedule 40, meeting the requirements of ASTM D 2447-99, utilizing test procedure ASTM D 1248.

(c) Duct spacing.
A minimum conduit separation of two inches both vertically and horizontally is required for all non-metallic underground conduit systems. Other spacing may be required for different applications in which case the additional spacers manufacturing data shall be submitted for approval. Conduit spacers shall be located every five (5) feet in the trench to support the conduits for concrete. The standard minimum conduit separation for concrete encased conduits shall be two (2) inches.

(d) Warning tape.
Identification tape shall be a minimum of two inches wide with a minimum thickness of 5 mil, and be of a plastic-based non-deteriorating non-color-fading material. The tape shall contain a means of being located by a metallic cable detector. The tape shall be orange and imprinted with "CAUTION – BURIED COMMUNICATION LINE BELOW".

(e) Conduit trench subgrade foundation for installation in rock/gravel.
See Arkansas Department of Transportation Special Provision Rock Fill, Job No. 040901.

(f) Concrete encasement.
Concrete encasement for underground non-metallic conduits shall be Mix Class B, with 2,000 psi design strength, ASTM C33 Grade 7 maximum allowable aggregate, 0.60 water to cement ratio, and air entrainment at 4.5 %, -1.5%/+3%. Concrete shall be poured to backfill the conduits and cover them with a minimum of six (6) inches of concrete. Reference the plans for additional encasement details.

(g) End bell fittings.
All conduits entering subgrade pull boxes, vaults, or manholes shall be terminated with end bell fittings inside the pull box. End bell fittings are required for both PVC and PE installations. Products provided shall be manufactured for use on the selected conduit type.

(h) Conduit tags.
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 each conduit run. Interconnecting conduit runs on bridges shall utilize the same conduit numbering orientation across the bridges.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

ITS NON-METALLIC CONDUIT SYSTEM

Submit product data and installation details for the following items:

a. PVC conduit, couplers, elbows, and fittings
b. PE conduit, couplers, fittings
c. Pull tape
d. Conduit mandrels and cleaning brushes
e. Conduit numbering schedule/tabulation
f. Warning tape
g. End bell fittings
h. Conduit tags
i. Mandrel Logs

3. **CONSTRUCTION REQUIREMENTS**

The underground non-metallic conduit system shall be installed as required by ARDOT Standard Specifications Section 710, these requirements herein, or as directed by the Project Engineer.

SPECIAL CONSIDERATIONS FOR ITS CONDUIT UNDERGROUND INSTALLATIONS:

A. Protective warning tape shall be installed directly above and parallel to the center line of the conduit bank and extend for the entire length of the subterranean conduit bank. After placing a minimum of 6 or a maximum of 12 inches of backfill over the conduits, place the appropriate warning tape above and parallel to the centerline of the duct for the entire length of the duct trench.

B. All underground ITS conduits shall be thoroughly cleaned and mandrelled prior to installing pull tape. Mandrelling shall be performed in two stages. The first mandrelling shall be performed after the final assembly is in place but before the roadway pavement is laid. The second mandrelling shall be performed after the roadway pavement and all heavy construction is completed to ensure that all conduits are still in usable condition after all heavy construction activities. Each conduit shall be mandrelled by pulling a flexible mandrel sized at least 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 lbs minimum shall be installed in each empty conduit, and remain accessible from each end at all times.

C. Raceways that cannot meet the requirements for mandrelling, shall be deemed defective, and shall be repaired or replaced at the Contractor’s expense.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

ITS NON-METALLIC CONDUIT SYSTEM

D. Conduit mandrel logs shall be kept and submitted for review and approval for all conduits mandrelled. The mandrel logs shall contain the following information in tabular format for each conduit mandrelled:
    1) Installation Mandrel Log Submittal
        a. Conduit description
        b. Conduit endpoints
        c. Conduit size
        d. First mandrelling date
        e. Pass/fail for specified mandrel
    2) Road Surface Completion Mandrel Log Submittal
        a. Second mandrelling date
        b. Pass/fail for specified mandrel
        c. Install of pull tape

4. **METHOD OF MEASUREMENT**

The non-metallic conduit underground system will be measured by the unit price bid per linear foot.

5. **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 non-metallic conduit system, which price shall be full compensation for furnishing and installing the conduit system. All fill materials, concrete, spacers, fittings, couplers, elbows, reinforcement, warning tapes, pull tapes and submittals shall be considered subsidiary to the non-metallic conduit system.

Payment will be made under:

Pay Item	**Pay Unit**
Non-Metallic Conduit (4”)	LF

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

CONCRETE PULL BOX

Section 711 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection 711.02 Materials is hereby deleted and the following substituted therefor:

The pull boxes shall be constructed with Portland Cement Concrete reinforced with welded wire or shall be polymer concrete reinforced with heavy weave fiberglass. No fiberglass shall be exposed. All exposed portions of the pull box shall be non-electrically conductive.

The minimum inside dimensions measured across the center of the box (horizontally) just below the lid support lip shall be as follows:

Concrete Pull Box – Type 1 and 1 HD:
8 3/4" (220 mm) wide x 14 1/4" (360 mm) long

Concrete Pull Box – Type 2 and 2 HD:
11" (280 mm) wide x 21" (530 mm) long

Concrete Pull Box – Type 3 and 3 HD:
15 1/4" (385 mm) wide x 28" (710 mm) long

The depth measured from the top of the lid shall be a minimum of 11½" (290 mm).

A non-metal electrically insulated cover shall be provided for each pull box. The covers shall have a skid resistant surface on top and a lifting eye.

The pull box and cover shall be constructed in such a manner that the assembly will support light vehicular traffic. The cover with pull box shall meet or exceed the following test loading:

Type	Load		Load Area	
	pounds	kg	Sq. inch	sq mm
1	3800	1720	10 (3.16" x 3.16")	6400 (80 mm square)
1 HD	7500	3400	10	6400
2	3800	1720	20 (4" x 5")	13,000 (100 mm x 130 mm)
2 HD	7500	3400	20	13,000
3	3800	1720	20 (4" x 5")	13,000 (100 mm x 130 mm)
3HD	7500	3400	20	13,000

Pull box with cover in place shall comply with the National Electric Code for exposed boxes rated at voltages up to 480 VAC.

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All heavy-duty concrete pull boxes are to be installed as shown on the plans with an apron of concrete 12" (305 mm) wide and 6" (152 mm) in depth. The concrete shall comply with Section 802 for Class S Concrete. The Department will perform all acceptance sampling and testing at the frequencies shown for the Contractor acceptance testing in Subsection 802.06. Reinforcement consisting of 6" x 6" W1.4 x W1.4 (150 mm x 150 mm MW10 x MW10) welded wire fabric complying with the requirements of Subsection 804.02(b) is required to be placed in the concrete as shown in the plans.

The pull box shall be permanently labeled with "ARDOT", "ELECTRIC" and "ALUMINUM", centered below, the manufacturer's name and model identifier.

Stainless steel vandal resistant Penta-head bolts shall be supplied for each pull box. Two Penta-head sockets shall be provided and turned over to Maintenance Authority.

Subsection 711.05 Basis of Payment is hereby deleted and the following substituted therefor:

Work completed and accepted and measured as provided above will be paid for at the contract unit price bid each for Concrete Pull Box of the type specified, which price shall be full compensation for furnishing and installing the pull box; for excavation, backfill, compaction, removal of surplus materials, and replacement of the existing surface; for furnishing and placing the bedding material; for furnishing and placing welded wire fabric and concrete; and for all materials, labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Concrete Pull Box (Type __ __)	Each

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FIBER OPTIC CONCRETE PULL BOX

1. DESCRIPTION.

This item shall consist of furnishing and installing at the locations shown on the plans or as directed, a Concrete Pull Box of the type specified according to these specifications, and in accordance with the plan sheets for the subject job.

2. MATERIALS AND CONSTRUCTION:

All construction and materials shall be in accordance with the Subject Job Plan Sheets and this Special Provision. All pull boxes shall be grade-level enclosures, with open bottom design, placed in non-deliberate traffic environments.

The pull box cover, cover ring, and body shall be constructed with:

1. Portland cement concrete reinforced with welded wire.
2. Or polymer concrete reinforced with heavy-weave fiberglass.
3. Or shall be manufactured using the compression molded process, utilizing high density polymer concrete reinforced with Sheet Molded Compound (SMC) to produce a one-piece monolithic structure.
4. Or other materials meeting the strength and durability requirements of this provision. The Contractor shall be responsible for providing manufacturer's certified analysis in lieu of sampling and testing of commercial or manufactured products. Refer to subsection *106.10 of ARDOT Standard Specification, 2014 edition*.

No fiberglass shall be exposed. All exposed portions of the pull box shall be non-electrically conductive. Pull box with cover in place shall comply with the current National Electric Code for exposed boxes rated at voltages up to 480 VAC.

A non-metal electrically insulated cover shall be provided for each pull box. The cover shall have a skid resistant surface on top and shall be equipped with lifting slots/eyes. The cover shall seat flush when secured to the box body. The covers shall be secured to the body using corrosion resistant fasteners. A minimum of two (2) Stainless steel hex-head bolts or other approved anti-theft protection shall be used to secure the cover to the pull box. The securing threaded insert and/or nut assembly shall be field replaceable.

The pull boxes and cover shall meet the current version of the American National Standards Institute/Society of Cable Telecommunications Engineers (ANSI/SCTE) 77 Specification for Underground Enclosure Integrity and shall meet strength requirements of Tier 15 loading for non-Heavy Duty (HD) type enclosures, and Tier 22 loading for Heavy Duty (HD) enclosures. The Contractor and/or manufacturer shall provide certification with the submittals that the box meets the current ANSI/SCTE 77

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with the applicable rating (Tier 15 or 22). The pull box shall be UL listed and from a manufacturer that is listed on the Department's QPL.

The pull boxes shall be permanently labeled with "ARDOT FIBER OPTIC CABLE" along with the tier rating. The date of manufacture shall be permanently located on the top or bottom of the cover and on the inside of the box body. The manufacturer's part and/or model identification shall be permanently marked on the interior of the box body and shall be visible after installation. The permanent label "ARDOT FIBER OPTIC CABLE" shall be placed on the center of the outside of the pull box lid. A post-type fiber optic cable marker shall be placed adjacent to the pull box to identify buried conduits and cabling within the right-of-way.

The minimum inside dimensions (width and length) measured across the center of the box (horizontally) just below the lid support lip shall be as follows:

Fiber Optic Concrete Pull Box Type 4 and 4 HD

22" Wide X 33" Long

Fiber Optic Concrete Pull Box Type 5 and 5 HD

27" Wide X 45" Long

The depth shall be measured from the top of the lid and shall be a minimum of 36".

3. CONSTRUCTION REQUIREMENT:

Excavation for the pull box shall be to a depth that will result in the top of the cover being flush with the surrounding surface. The pull box shall be set on a gravel or crushed stone bedding that will serve as a sump. The bedding shall extend 18" to 24" (450 mm-600 mm) below the bottom of the box, and shall extend 8 inches beyond the length and width of the outside dimensions of the box.

All HD (heavy-duty) concrete pull boxes are to be installed as shown on the plans with a surrounding apron of concrete 12" (305 mm) wide and 7" (177.8 mm) in depth. The concrete shall comply with Section 802 for Class S Concrete. The Department will perform all acceptance sampling and testing at the frequencies shown for the Contractor acceptance testing in Subsection 802.06. Reinforcing steel shall meet the requirements of Subsection 804.02(a) for the size and grade shown in the plans and shall be placed as shown in the plans and in conformance with Subsections 804.06 and 804.07. Refer to Standard Drawing SD-6, Heavy Duty Pull Box.

Fiber cable markers shall be orange in color and dome type with black lettering and a white UV resistant polyethylene 3.5" diameter post. The fiber cable marker post shall be installed plumb and embedded in an 18-inch-deep, 10-inch-diameter, concrete footing. The top of the footing shall be level with the finished

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ground surface. The notification information shall be clearly visible when viewed from up or down the roadway. Wherever practicable, fiber cable markers should be placed with their center line one foot further from the centerline of the highway than the outside edge of the duct bank. The top of marker shall be a minimum of 4 feet and a maximum of 5 feet above the finished grade. The marker lettering shall state "FIBER OPTIC CABLE BURIED BELOW, CAUTION, and CALL BEFORE DIGGING". The fiber cable markers and posts shall have a minimum service life of 10-years in an unprotected outdoor environment.

Concrete Pull Boxes shall be included in the Performance Test under Section 717 of the Standard Specification for Highway Construction, 2014 Edition, and any box or lid that fails for any reason (including heaving or settling) during the 6-month warranty period shall be replaced by the Contractor at no cost to the Department.

4. METHOD OF MEASUREMENT:

Concrete Pull Boxes, in place with lid will be measured by the unit price bid per each. One unit shall include all items that are listed in this Special Provision.

5. BASIS OF PAYMENT:

Work completed, accepted and measured as provided above will be paid for at the contract unit price bid for each Fiber Optic Cable Concrete Pull Box of the type specified, which price shall be full compensation for furnishing and installing the pull box; for excavation, backfill, compaction, removal of surplus materials and replacement of the existing surface; for furnishing and placing the bedding material; for furnishing and placing reinforcing steel and concrete for the HD pull box aprons; for furnishing and placing the fiber post-type markers; and for all materials, labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Fiber Optic Concrete Pull Box (Type)	Each

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HIGH MAST ILLUMINATION ASSEMBLY

DESCRIPTION. This work consists of constructing, furnishing, installing, and replacing LED High Mast Illumination Assembly and/or upgrading existing High-Pressure Sodium (HPS) fixtures to LED High Mast fixtures as shown on the plans or as directed by the Engineer. Described herein complete with pole shaft, luminaires, head frame, ring, lowering device, foundation, excavation, backfill, connectors, fuses, ballasts, circuit breakers, grounding, lightning arrestors and aircraft warning lights shall be installed as shown. The access sidewalk is included as part of this item. Included also are requirements for maintenance bond, warranty, and testing. All above items should meet the 2014 edition of the *Standard Specifications for Highway Construction, Arkansas State Highway and Transportation Department* (Standard Specifications).

CONSTRUCTION METHODS. The Contractor shall contact the local utility companies or Arkansas One Call in order to determine the location of underground utilities in the area where the new foundation is to be located and shall be responsible for repairing, to the satisfaction of the utility company, any damaged utilities. The existing foundation shall be removed, covered, packed, leveled to existing grade and seeded. Removal of the existing foundation and equipment will not be measured and paid for directly but will be considered subsidiary to other items in this contract. This work shall be approved by the Engineer.

MATERIALS. (A) Luminaire. The high mast luminaire shall meet the following requirements:

Light Source:	Shall be LED. Refer to plan set for more information related to the number of lumens (+/- 5%), mounted height, and orientation (True North, 0º) for each light source.
Correlated Color:	4000K +/- 200K Temperature:
Light Distribution Pattern:	Refer to plan set.
Color Rendering Index:	No less than 70. Mesopic multipliers (i.e., effective luminance factors) shall not be used. All values shall assume photopic visual adaptation.
Refractor or Lens:	UV stabilized optical grade acrylic -or- high-translucent, high-strength heat/shock resistant glass, such as borosilicate, tempered, or hardened glass.
Operating Temperature	-40ºC (-40ºF) to +40ºC (+104ºF) Range

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BUG Rating:	U0, in accordance with Arkansas Shielded Outdoor Lighting Act.
RoHS:	Compliant
IP Rating:	IP66 or better
UL Standard:	UL 1598 and wet rated
Surge Protection:	20kV/10kA per ANSI C62.41
Vibration:	3G vibration standard per ANSI C136.31
Input Voltage:	Refer to plan set.
Weight:	Maximum 80 lbs.
EPA:	Maximum 3 sq. ft.
Power Factor:	90% or higher
Design Life:	100,000 hours to L90, tested in accordance with IES TM21-11
Manufacturer's Warranty:	Minimum five (5) years that includes repair or replacement of LED arrays and drivers.
Accessories:	House-side shield shall be included for residential areas. See plans.
Receptacle:	ANSI C136.41 7-pin twist-lock photocell or shorting cap. See plans.
Luminaire Housing:	Fully gasketed die-cast aluminum housing which integrally attaches to the luminaire bracket and support assembly. All internal components shall be assembled and pre-wired using quick disconnect or modular electrical connections. Internal components shall be replaceable without being removed from the high mast structure.

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Paint: Luminaires shall be factory painted to match poles

(B) Mechanical. The luminaire shall be attached to the bracket arm by means of a bracket entry and luminaire support assembly. The base for this assembly shall be die-cast aluminum. The assembly shall include a gasketed side-entry slip fitter designed for 2" pipe with provision for +3º adjustment for leveling the luminaire. The luminaire shall not be tilted. The luminaire shall be prevented from undue vibration and backing out by means of a stainless-steel luminaire clamp attached to the assembly but separate from the socket.

An enclosed terminal block shall be included such that all electrical connections shall be protected from vibration. An aluminum rolled rain shield shall be attached to the outside of this assembly.

(C) Photometric. The lighting system shall be meet the design values shown in AASHTO Roadway Lighting Design Guide, Table 3-5a. The uniformity ratio, average-to-minimum, shall be 4:1 or better. The lighting system performance shall be supported by a lighting software. Lighting levels shall be shown at 50-foot intervals maximum and plotted onto the plan sheet at the same scale as is shown on the plan sheet. Computation of uniformity and maximum-to minimum ratios shall be based on the roadway surface area as outlined above. The Engineer reserves the right to determine the acceptance of the luminaires based on the printout, which shall be submitted with shop drawings. The Contractor shall provide .IES photometric data files for the proposed luminaires with the shop drawings.

(D) Upgrade existing HPS to LED. Upgrading high pressure sodium (HPS) to light emitting diode (LED) luminaires shall meet or exceed the photometric standards and specifications per the originally plan or as approved by the Engineer.

Upgrading High Pressure Sodium to LED luminaires shall not utilize a retrofit kit; rather, will be a process of relighting the entire candelabra on the High Mast Pole. This will involve changing out each HPS fixture assembly and HPS luminaire with LED fixture assembly and LED luminaire. Alignment of the LED luminaire will then be rotated to match the original photometrics, unless indicated on the plans, or as directed by the Engineer.

The Contractor shall be responsible to contact the Maintenance Authority (i.e., City, County, or District). The Maintenance Authority has First Right of Refusal on any old and unused equipment and material used in this project. The Contractor shall contact, coordinate and transport any equipment and material the Maintenance Authority has laid claimed. All other equipment and material will then be the responsibility of the Contractor to remove from the premises.

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The Contractor shall be responsible for the disposal of all equipment and material that is not claimed by the Maintenance Authority (e.g., old HPS fixture assembly, HPS luminaire, etc.). The payment for this work will be subsidiary to the pay item High Mast LED Fixture.

(E) Lowering Device. The lowering device shall consist of head frame; luminaire ring; winch and hoisting assembly. The assembly shall be top latching.

The head frame structure shall be zinc coated steel, attached to the pole by means of a steel slip fitter and secured by four stainless steel setscrews. The head frame shall encompass cable sheaves constructed of steel. The steel sheave shall be zinc-electroplated per ASTM B633-19 and yellow chromate dipped for corrosion resistance. Oil-impregnated sintered bronze bushings shall be pressed into the steel sheave hub and shall ride on AISI 304 stainless steel shafts.

The hoisting cables shall be stainless steel 19 x 7 (non-rotating) aircraft cord manufactured per MIL-DTL-83420P or approved equal. Cable shall be of sufficient strength to provide a 10 times total or greater margin of error over required wind loading.

The power cord roller assembly shall consist of rollers mounted between two cold-rolled steel plates. The plates shall be zinc-electroplated per ASTM B633-19 and yellow chromate dipped. The power cord shall ride on rollers made from acetal resin (polyoxymethylene) meeting the requirements of ASTM D6100 and D6778 mounted on AISI 304 stainless steel shafts. Rollers shall be located on a radius on either end of the plates to support the power cord in a seven inch (7 in.) bending radius. At either end of the plates, a keeper bar shall be provided over the power cord between the plates to keep the cord in its track during pole erection and during normal operation. The head frame shall be covered with a copper-free aluminum cover attached with six (6) stainless steel machine screws and self-locking nuts.

The head frame shall also include three (3) latch barrels which support the luminaire ring assembly when the lowering device is not in operation. The latch pins shall be stainless steel. The latch barrels shall be cast high strength, copper-free aluminum, latching shall be accomplished by the alternate raising and lowering of the luminaire ring assembly by the winch and hoisting assembly and there shall be no moving latch parts or springs attached to the head frame assembly. All moving parts of the latching mechanism shall be attached to the luminaire ring assembly and serviceable from the ground. Anti-fall systems (as commonly referred to in high mast systems) are not permitted. The unit shall have a "single swivel latch pin." Each latch shall have a reflecting latch indicator.

All moving parts that move in contact with other parts except in latch barrels shall be stainless steel to stainless steel (AISI 304). Oil-impregnated bronze bushings shall be provided to carry the vertical loads between moving parts. No coil springs shall be in axial contact with rotating latch parts. The latching and locking of each latching mechanism shall be signaled by retroreflecting

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indicator flags visible from the ground. The latching mechanism shall not be impaired by formation of ice and shall not require adjustment after the original installation.

The luminaire ring shall be fabricated of C6" x 8.2 lb. steel C-channel or equal member, hot dipped galvanized per ASTM A-123 Class B with the appropriate number of two-inch (2") nominal galvanized steel pipe mounting arms. The luminaire ring shall be wired with 90ºC, extra flexible, soft drawn stranded copper power cord of three (3) conductors and current carrying capacity for the total load, with a maximum voltage drop of 1% and type ST distribution cords with insulation suitable for at least 105ºC.

All electrical cords shall be attached to the copper-free aluminum, weather-tight wiring chamber through weather-tight cable connections. A prewired 600-volt terminal block shall be provided in the weather-tight chamber. A weather-tight twist-lock power inlet shall be provided on the chamber to allow testing of the luminaires while in the lowered position. Connectors shall support inner conductors as well as outer jacket. Do not use "Kellog" type cord grips to support the main power cord.

Roller-contact triple iris type cast aluminum interconnected spring-loaded centering arms shall be provided which will center the luminaire ring while ascending and descending the pole. The arm system shall be capable of keeping the ring concentric with the pole in winds up to 30 MPH. The rollers for the centering arms shall be a water-resistant, non-marking material with oil impregnated sintered bronze bushings. All axle shafts for arms and rollers shall be is AISI 304 stainless steel. The arms shall not cause marks on galvanized or weathering steel. Springs for rollers shall be stainless steel.

Ultimate support of the luminaire ring shall not be sacrificed by individual or total spring failure or by electrical power failure during lowering. One hoisting cable shall be capable of supporting the luminaire ring in case of two failed cables.

The winch shall have an ultimate strength of 6,000 pounds or four (4) times (minimum) the lifted load with the number of layers of cable with which it will be used. The winch shall have a 30 to 1 worm gear reduction ratio and include an integral friction drag brake on the worm shaft to prevent free spooling of the winch. The winch shall be designed for at least intermittent power operation, but also have hand crank capability. The internal drag brake friction shall be always engaged and is required to be overcome by the drill motor.

The winch shall be pre-wound with stainless steel 19 x 7 (non-rotating) aircraft cord manufactured per MIL-DTL-83420P or approved equal of 1/4" or greater diameter. The winch shall not fill more than 2/3 full and shall have one layer of cable remaining when the ring is lowered. The terminals of the cable shall be factory swagged to stainless steel fittings. The winch assembly shall be provided with guide bars above the drum to force the cable away from the end flanges of the drum

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for proper wrapping of the drum. The drum shall be supported at both ends and keepers shall be provided to ensure that uncoiled cable will rewrap onto the drum. The winch shall be stamped with the pole height of its intended use.

The drill motor shall be the heavy-duty type with a stalling torque at least twice that required to operate the device. The drill shall drive the winch through the friction-type torque limiter coupling to limit the lifting force. There shall be a back-up shear pin designed to shear at a torque level between 25% and 50% over the torque limiter setting. The drill shall be controlled from a 20-foot remote cord connected to the reversing switch. One (1) drill motor with transformers and controls shall be furnished for this contract. The drill motor and accessories will not be measured for separate payment but will be considered subsidiary to Special Provision High Mast Illumination Assembly.

At the Contractor's option, an internal hoist motor and take-up reel may be provided subject to approval of shop drawings. Any cost associated with this option must be reflected in the bid unit cost.

The system shall be provided with an automatic circuit breaker and twist-lock disconnect in the pole base. Cable lengths shall be of sufficient length such that no separate jumper cord shall be required to energize the fixture assembly while the luminaire ring reaching the hand hole cover. The Contractor should anticipate the candelabra may rotate on the pole as it is lowered to the ground; therefore, the cable length should take this into consideration.

The average raising and lowering speed of the luminaire ring shall be at least 12 feet per minute. All threaded parts and bolt hardware shall be stainless steel unless otherwise noted. As a minimum all steel hardware shall be galvanized in accordance with ASTM B633-19.

(F) Design Specifications. AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 4th Edition (2001) with 2003 and 2006 interims. The fatigue category shall be as follows:

- Fatigue Category I for High Mast Lighting over 98 ft
- Fatigue Category II for High Mast Lighting 98 ft or less

Construction Specifications. Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition) with applicable Supplemental Specifications and Special Provisions.

Minimum Structural Requirements: Steel Members considered main load carrying members with a thickness greater than 1/2" shall meet the Longitudinal Charpy VNotch test specified in Subsection 807.05 of the Standard Specifications. Base Wind Speed: 90 mph.

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The pole shall be manufactured in a minimum number of lengths to facilitate shipping and assembly. The telescoping joints shall have matching tapers of at least 0.1311/ft. There shall be a minimum overlap at each joint of 1 1/2 times the outside female end diameter plus six inches. The telescoped joint must provide a snug joint having a maximum deviation from straight of not more than 1/16" in any 5 feet.

Fabrication, welding, and inspection of these poles shall be in accordance with the current edition of AWS D1.1, Structural Welding Code, except as modified herein. All burning, cleaning, joint preparation, welding and inspection shall be accomplished in a workmanlike fashion by qualified personnel.

Welding inspection, except as noted for full penetration butt welds, shall be performed by or under direct supervision of a current AWS Certified Welding Inspector. All welds shall be examined visually to ensure compliance with the quality requirements for tubular sections in Section 6, Inspection of the current AWS D1.1. Electrical resistance welding is allowable for the longitudinal seam in non-overlapped areas only.

In addition, fillet welds shall be examined by magnetic particle inspection at the rate of 1' per 5', or portion thereof, of each size and location. Longitudinal seam welds shall have 60% minimum penetration. Penetration shall be verified by polishing, etching and examining a trimming cutoff from selected male tube ends. The minimum frequency of testing of seam welds shall be one (1) per pole assembly and a minimum of one (1) for each wall thickness for the project. The male and female tube ends in the area of overlapping joints shall be welded with a full penetration butt weld, AWS D1.1, B-L1b or B-L1a-S, and shall be ground smooth. Weld tabs shall be used, or tubular sections shall be fabricated longer than design requirements and trimmed. These welds shall be 100% radiographically tested and shall meet the criteria for tubular sections in Section 6 of the current AWS D1.1. Radiography shall be single wall exposure/single view with Image Quality Indicators placed on the source side. Welder certifications, welder operator certifications, weld procedures, and inspector qualifications shall be submitted to the Bridge Division for review and approval prior to any welding operations. Reports of all required weld inspections and radiographic film shall be provided to the Materials Division for review a minimum of two (2) weeks prior to shipment. Full penetration welds shall be inspected, and film interpreted by an independent inspection agency acceptable to the Department. The Department reserves the right to observe or to independently check any fabricator activities, perform quality assurance at the fabrication plant, or review nondestructive inspection reports and radiographic film.

The maximum number of repairs allowed to any weld area shall be three (3).

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Required inspection, including the cost for weld inspection by an independent agency, shall be at no cost to the Department. The cost of repairs to defective welds or for replacement of any materials considered deficient shall be at no cost to the Department.

No full penetration circumferential welds shall be permitted in the fabrication of the tube sections. No circumferential welds shall be permitted to secure the overlapping joints and no field welding shall be permitted in the assembly of the tubes. Overlapping joints shall be sealed after assembly with an approved silicone caulk.

A certification shall be provided by the independent inspection agency that all full penetration welds in the overlap areas meet the referenced current AWS D1.1, Structural Welding Code. The fabricator shall provide a certification that all fabrication and materials meet the requirements of the Specification, plans, the current AWS D1.1, Structural Welding Code, and other referenced specifications.

The tubes, base plate, reinforcement sleeve, backing ring and support plate shall be high strength steel per ASTM A572, Grade 60 or ASTM A595, Grade B, and shall be galvanized in accordance with AASHTO M111. Precautions to prevent embrittlement during fabrication and galvanizing operations shall be taken as described in ASTM Recommended Practice A143.

The hand hole cover base cover and miscellaneous hardware shall be ASTM A36 and shall be galvanized in accordance with AASHTO M111 or AASHTO M232, as applicable.

The pole shall have a nominal 10" x 30" reinforced handhole and a welded plate for mounting of the lowering device winch and circuit breaker opposite the handhole. The handhole cover shall have captive stainless-steel bolts for attachment. The lowering device shall be capable of being installed and removed through the handhole.

Each pole piece shall be permanently stamped with a piece mark using a low stress die for positive alignment of the pole pieces. The pole shall be plumb within 12" as determined by two transits 90° apart during leveling. Leveling shall be accomplished during still wind and early morning hours. Torque the bolts so as to induce a preload equal to 50% of bolt yield strength. Shop drawings shall state torque requirements in ft.-lbs.

All calculations and shop drawings of the pole design shall be submitted for approval before fabrication. Lifting point(s) for erection of the pole shall be shown on the shop drawings.

The Contractor shall be responsible for coordination of off-loading and erection of the poles in a safe manner and as directed by the Engineer. The Contractor shall provide all equipment and materials to allow for delivery, storage, and erection of the poles in their proper place.

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(G) Foundation. The foundation base, including foundation extension, and shall be constructed in accordance with the plans and approved shop drawings. All concrete work shall conform to Section 802 of the Standard Specifications for "Class S Concrete." All reinforcing steel shall conform to Section 804 of the Standard Specifications for Grade 60 Steel.

The foundation shall be a drilled shaft type, with or without a foundation extension, as shown on the plans. The Contractor shall employ a drilled shaft specialty Contractor unless he can demonstrate sufficient experience in the construction of drilled shafts by his own forces. The Contractor shall choose the method of construction. Collapsing of hole, ground water infiltration, or standing water may be encountered. Necessary action shall be taken to prevent water from entering the hole. The Contractor shall submit details and supporting technical data for the proposed method of construction to the Resident Engineer for approval at least two (2) weeks before work on drilled shafts is to begin. Drilled shaft excavations and completed shafts not constructed within the required tolerances are unacceptable. The Contractor shall be responsible for correcting all unacceptable shaft excavations and completed shafts to the satisfaction of the Engineer. Materials and work necessary to complete corrections shall be furnished at no additional cost to the Department.

(1) Casings. If the Contractor elects, a steel casing may be used and shall be of the size and thickness suitable for the construction operation intended. The inside of the casing shall be clean, smooth, and well-oiled. The outside diameter shall not be less than the specified size of the drilled shaft. If an oversized casing is used, no extra compensation will be allowed for the additional concrete required to fill the oversized casing.

A temporary casing shall be withdrawn from the hole as the concrete is poured or immediately following the concrete placement. If the casing is removed in sections as the concrete placement progresses, a concrete head of at least two feet shall be maintained above the bottom of the casing unless otherwise permitted by the Engineer. Under no circumstances shall removal of the casing begin until the level of concrete is higher than the level of water outside the casing. Throughout removal of the casing, the level of the concrete must be maintained above the level of water outside the casing.

Extreme care shall be taken to pull casings at a slow, uniform rate in a truly vertical direction in order to prevent distortion of the shaft. Movement of casing for short pulls of a few inches, rotating, exerting downward pressure, and tapping it to facilitate extraction will be permitted. If, at any time during pulling, upward movement of concrete occurs inside the casing, pulling shall be stopped immediately and casing left in place. The Contractor will be permitted to backfill around casings with pea-gravel or other granular material acceptable to the Engineer in order to permit ease of casing removal and to reduce the excess concrete required to fill any excavation outside the shaft dimensions.

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If a permanent steel casing is used, it shall be smooth pipe with its projection left in place not greater than three (3) feet above natural ground.

All sand, clay or foreign material shall be removed from the casing walls and the surfaces carefully washed and cleaned.

No concrete shall be placed until the condition of the casing is approved by the Engineer.

(2) Excavation. Excavation shall be made through whatever materials encountered to the depth shown on the plans. The use of water for drilling operations, or for any other purpose where water may enter the hole, will not be permitted. Any excavation for the drilled shaft beyond the lines required by the plans shall be filled with Class S concrete at the Contractor's expense.

Drilled shafts shall be bored plumb to within a tolerance of two (2) inches with the vertical axis at the top of the shaft no more than 1'-0" from its planned location.

Loose material, more than one (1) inch, remaining at the bottom of the hole after drilling and excavation operations have been completed shall be removed before placing concrete. All material excavated from shafts shall be disposed of as directed by the Engineer. All expenses for the disposal shall be included in the price bid of the pay item under this Special Provision.

The Contractor shall provide electric or other suitable lights which may be lowered into the shaft, mirrors and other equipment and facilities necessary for the proper inspection of the holes. The dimensions and alignment shall be checked by the Contractor under the direction of the Engineer. All expenses for the inspection shall be included in the price bid for the pay item under this special provision.

At any time, a person is in the hole, provisions shall be made for pumping fresh air and protecting against possible collapse of the hole. Mechanical equipment used in the excavations by a person while in the hole shall be operated by the air or electricity. The use of gasoline driven engines or any device which produces toxic fumes or uses atmospheric oxygen within the excavation for any purpose will not be permitted.

(3) Reinforcing Steel. The reinforcing steel cage for the drilled shaft shall be completely assembled and placed as a unit immediately prior to concrete placement. Longitudinal drilled shaft reinforcement shall not be spliced. Spiral reinforcement shall be cold drawn conforming to ASTM A1064. Splice length in spiral bar shall be 48 bar diameters. Anchorage of spiral reinforcement shall be provided by 1-1/2 extra turns of spiral bar at each end of spiral unit.

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Care shall be taken to hold reinforcing in its correct position when pouring the concrete or extracting using concrete blocks or other suitable means to prevent displacement of the core reinforcing. Timber blocks will not be permitted.

(4) Concrete. The slump of the drilled shaft concrete shall be six (6) inches + one (1) inch. The maximum water cement ratio specified in Subsection 802.05 of the Standard Specifications shall not be increased. An approved water reducing agent may be used to obtain desired workability such that full depth vibrating or rodding will not be required. A vibrator will not be permitted inside a casing. Rodding will be required in the top three (3) feet of the drilled shaft.

When the prevailing maximum ambient temperature is 75°F or above, an approved water reducing agent with set retarding characteristics, or an approved set retarding agent will be required in all drilled shaft concrete. An approved set retarding agent will be required in all drilled shaft concrete when temporary casing is used. The temperature of concrete to be placed in the drilled shaft shall not exceed 92°F.

The drilled shaft concrete shall be placed immediately after excavation is complete and reinforcing steel placed. Water which may have infiltrated into the hole shall be removed before pouring concrete.

Concrete placement in the drilled shaft shall be as continuous as practicable from the bottom to the top of the shaft. The use of tremies for placing the concrete in the drilled shaft will not be required except when necessary to prevent segregation of concrete materials and to obtain proper compaction of the concrete. The bottom of the tremie must remain below the top of the concrete at all times but shall not be left at the bottom of the hole during the entire pour.

When pouring of the drilled shaft concrete has been completed, the top surface shall be finished and cured in accordance with the provisions of Section 802 of the Standard Specifications.

For at least 48 hours after drilled shaft concrete has been placed, construction operations that would cause soil movement adjacent to the shaft shall not be conducted. Portions of drilled shaft or foundation extension that will be exposed to standing water shall be protected by leaving the forms in place for a minimum of seven (7) days after concrete placement.

(5) Underwater Placement of Concrete. It is the intent of this special provision that all drilled shaft concrete shall be placed in the dry. If it becomes apparent that pumping and

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other dewatering methods are not adequate to dry the holes, the Engineer may authorize underwater placement of concrete. In this case, the water in the hole shall be permitted to seek its natural hydrostatic head to prevent any possibility of pressure washing of the concrete being placed. The concrete placement procedure shall be the same as specified for concrete placed in the dry.

The Contractor shall use a pump or tremie placement system. The tremie shall be watertight and shall be constructed so that the bottom can be sealed and then opened after it is in place and fully charged with concrete. Concrete placement shall not begin until the pump line discharge orifice is at the bottom of the shaft excavation. Concrete placement shall be done in the one continuous operation for the entire depth of the shaft. The discharge orifice shall remain at least five (5) feet below the top surface of the fluid concrete. At no time shall concrete be discharged above the surface of deposited concrete. The Contractor shall provide equipment and personnel to sound the top of the concrete in the presence of the Engineer in order to verify the location of the concrete surface and the discharge orifice at all times.

(6) Ground Rod. The foundation base shall include a ground rod. The grounding rod shall be 3/4" diameter by 20 feet in length of copper weld Steel which shall be driven into the ground adjacent to the foundation base as shown on the plans. The grounding connection shall be made by a No. 1/0 A.W.G. soft drawn copper wire which shall be attached by an exothermic weld to the ground rod and bolted to the pole grounding lug inside the pole base.

(7) Anchor Bolts. The foundation shall include anchor bolts as shown on the plans. The bolts shall be made of low carbon alloy steel having a minimum yield strength of 90,000 psi in accordance with ASTM A-449 Grade 90 or 105. Each bolt shall include leveling hex nut, a locking hex nut and flat washer. The threaded end of the anchor bolt shall be galvanized a minimum of 18" in accordance with ASTM A-153. The hex nuts shall be galvanized heavy hex, furnished in accordance with ASTM A-563 Grade D or DH or ASTM A-194. Locknuts shall have non-reversible high tensile strength stainless steel locking pins or be tack welded to the base plate. Certified test reports for anchor bolts and nuts shall be submitted.

Steel casings (temporary or permanent), oversized surface casings, materials, labor and equipment required to accomplish the work described herein shall be in the price bid for the pay item under this special provision.

(8) Electrical. The system shall be designed for 60 hertz, single phase, grounded electrical input of the voltage and rating, as detailed on the plan sheets. The Contractor shall furnish a Pedestal at each High Mast pole as noted in the details. The Pedestal

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enclosure shall be rated NEMA 4X housing a disconnecting means for the High Mast Illumination Assembly. Step-down transformers shall be furnished, if necessary, for obtaining 120-volt power for the winch power unit and air-craft warning lights (when shown). The system shall be fully protected with a main circuit breaker and individual fuses for each device and luminaire. All electrical equipment shall be fully accessible and easily maintained from ground level. The system shall have a 650-volt lightning arrestor and lightning rod.

(9) Unit Responsibility. The High Mast Illumination Assembly shall be fully coordinated among the various components -- pole, luminaire ring, lowering device, head frame and luminaires. The various items need not be manufactured by one manufacturer; however, the lowering device supplier is responsible for supplying and assuring that the overall system is coordinated and properly interfaced for ease of assembly, proper raising and lowering, wind resistance, illumination pattern and level and ease of maintenance.

(H) Equipment Submittal: Prior to the ordering of all lighting equipment, electrical components, the contractor shall submit to the engineer a 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 pay 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.
If the engineer determines that the equipment submittal meets the design criteria, an approval will be provided. If the equipment submittal for use is rejected, the contractor shall re-submit the equipment submittal within fifteen (15) days of notification of equipment rejection. The equipment resubmittal will be considered the starting point of a new approval cycle as described.

CONSTRUCTION AND MAINTENANCE. (A) Installation Support. The Contractor shall include installation assistance from the high mast illumination assembly supplier in the bid price for High Mast Illumination Assemblies. The price shall include, at a minimum, the time for a factory trained field representative to witness the assembly and installation of the high mast illumination assemblies. The Contractor shall not begin pole assembly until the representative has advised both the Contractor and Engineer in writing of proper erection procedures.

When all units are installed, the manufacturer's representative shall inspect and verify proper installation of the units. The representative shall also demonstrate operation and proper maintenance to the Engineer and the City or their authorized representatives.
The Contractor shall submit high resolution PDF file of the complete drawings and maintenance instructions to the Engineer, to be forwarded to Maintenance Authorities.

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(B) Test Requirements and Quality Assurance.

A. **Meg and Leakage Test.**
Where specified in the contract, Contractor shall perform the Meg Test and Leakage Test in accordance contract specifications under the special provision Electrical Conductors-in-Conduit. The work shall be paid with the Electrical Conductors-in-Conduit pay item.

B. **14-Day Burn-Out Test.**
Contractor shall conduct minimum 14-day burn-out test for the complete lighting system. The Contractor shall be responsible to correct, and if needed, replace any malfunctioning equipment during the 14-day burn out test at no cost to the Department. The 14-day burn-out test shall be restarted in the event of any malfunctioning equipment.

C. **30-Day Performance Test.**
Contractor shall perform 30-day performance test of the lighting system. The lighting system shall be functioning in the normal operations as intended for the system.

The Contractor shall be responsible to correct, and if needed, replace any malfunctioning equipment during the 30-day performance test at no cost to the Department. The 30-day performance test shall be restarted in the event of any malfunctioning equipment. The 30-day performance test shall not start prior to the completion and approval of the 14-day burn-out test.

D. **Lowering Device Test.**
In addition to other requirements of the contract, Contractor shall perform a test of lowering and raising the lowering device in the present of the Engineer or the Engineer's representative. This test shall be conducted within the first two weeks of the 30-day performance test. If there is a malfunction of the lowering device, the Contractor shall be responsible to replace the lowering device at no cost to the Department and the 30-day performance test shall be restarted. The 30-day performance test shall not be approved if the lowering device has not been tested and approved by the Engineer. If for any reason this test is delayed, the 30-day performance shall be extended to allow at least two (2) weeks after this test is conducted and approved. Upon completion of the 30-day performance test, the Contractor shall handover the lowering device (and all associated equipment and material for this device) within five (5) business days to the Maintenance Authority (i.e., City, County, or District). The 6-month guarantee period shall apply to the lowering device.

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E. **6-Month Guarantee period.**
Contractor shall guarantee satisfactory in-service operation of the mechanical and electrical equipment and related components for a period of six (6) months following completion of the 30-day performance test. Contractor to maintain the lighting system for the 6-month guarantee period. The Contractor shall be responsible to correct, and if needed, replace any malfunctioning equipment during performing test at no cost to the Department. The 6-month guarantee period shall be restarted in the event of any malfunctioning equipment. The 6-month guarantee period shall not start prior to the completion and approval of the 30-day performance test.

F. **Warranty documents.**
The Contractor shall provide and transfer 5-year manufacturer's warranty to the Maintenance Authority (i.e., City, County, or District) at the end of the 6-month guarantee period.

Method of Measurement.
High Mast Illumination Assembly will be measured by the unit.

High Mast LED Fixture will be measured by the unit.

Basis of Payment. Work completed, tested and accepted under the item and measured as provided above shall be paid for at the contract unit price each bid for the type High Mast Illumination Assembly of the height and number of luminaires specified, which price shall be full compensation for completely furnishing and installing the pole of length shown on the plans, luminaires, luminaire assembly, electrical pedestal, electrical equipment, headframe, luminaire ring, lowering device, drilled shaft foundation, ground rod, lightning rod, lightning arrestor, aircraft warning light when shown and all incidentals in accordance with the plans and specifications and directions of the Engineer, including excavation, concrete, reinforcing steel, anchor bolts, backfill and/or disposal of surplus material, and for furnishing all materials, equipment, rigging, tools, labor, methods of erection and incidentals to complete the work.

Payment will be made under:

Pay Item	Pay Unit
High Mast Illumination Assembly (___ ft - ___ Luminaire)	Each
High Mast LED Fixture (_____ Lumen(s))	Each

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LED ROADWAY ILLUMINATION POLE

DESCRIPTION. This work consists of constructing and furnishing all materials to ensure a properly operating roadway lighting system according to these specifications and the plans, or as directed by the Engineer.

LIGHTING SYSTEM DESIGN CRITERIA. Roadway/Rest Area lighting system shall meet the illuminance design values, Table 3-5a, in AASHTO *Roadway Lighting Design Guide*, current edition, and ANSI/IES RP-8-22 Recommended Practice: Lighting Roadway and Parking Facilities, current edition.

MATERIALS. (A) Luminaire. Luminaire assemblies with accessories shall be supplied in one style or model number from one manufacturer only. Luminaire's driver shall be mounted inside the luminaire housing. The driver shall have voltage/current overload and short circuit protection.

In addition, luminaire(s) shall meet the following requirements:

- Light Source: Shall be LED. Refer to plan set for more information related to the number of lumens, mounted height, mast arm length, and orientation for each light source.
- Light Distribution: Type III
- Correlated Color Temperature: 4000K +/- 200K
- Color Rendering Index: No less than 70. Mesopic multipliers (i.e., effective luminance factors) shall not be used. All values shall assume photopic visual adaptation.
- Refractor or Lens: UV stabilized optical grade acrylic -or- high-translucent, high-strength heat/shock resistant glass, such as borosilicate.
- Operating Temperature Range: -40ºC (-40ºF) to +40ºC (+104ºF)
- BUG Rating: U0, in accordance with Arkansas Shielded Outdoor Lighting Act.

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- RoHS: Compliant
- IP Rating: IP66 or better
- Surge Protection: Minimum 10kV/5kA per ANSI C136.2
- Input Voltage: 120V-277V or 347V-480V
- Power Factor: 90% or higher
- Design Life: 100,000 hours to L90, tested in accordance with IES TM21-11
- Warranty: Minimum 5 years. LED driver and LED arrays shall be included in the warranty.
- Accessories: House-side shield shall be included for residential areas. See plans.
- Receptacle: ANSI C136.41 7-pin twist-lock photocell or shorting cap. See plans.
- Luminaire Housing: Die-cast aluminum with tool-less entry and fully gasketed. All internal components shall be assembled and pre-wired using quick disconnect or modular electrical connections. Internal components shall be replaceable without special tools.
- Paint: Luminaires shall be factory painted to match poles

(B) Conductors. Conductors for roadway luminaires shall be solid or stranded copper, UL Listed, XHHW-2, manufactured in accordance with ASTM B3, B-8, and B-787. Rated voltage for conductors shall be 600V. Temperature rating shall be 90ºC/194ºF for wet or dry locations.

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(C) Luminaire Poles. Poles and mast arms, if used, shall be hot-dipped galvanized steel. All poles and arms within continuous systems shall be of similar shape, dimension, materials, and color. If top of the pole is exposed, a pole cap shall be provided.

Luminaire poles and hardware, unless superseded by this special provision or the detail sheet(s), shall meet the minimum requirements under the current edition of *Standard Specifications for Highway Construction* (Standard Specifications), Arkansas Department of Transportation.

- Section 714. “Traffic Signal Mast Arm and Pole with Foundation” of the Standard Specifications shall apply to all units of steel design as well as hardware and foundation requirements for units of other material.

- Section 724. “Overhead, Bridge Mount, and Cantilever Sign Structure” of the Standard Specifications shall apply to poles and mast arms for units of aluminum design.

In addition, all luminaire poles shall meet the following minimum structural requirements:

- Design Specification: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, current edition and Interims Revisions.

- Minimum Structural Requirements: As a minimum, the diameter of the lower end of the shaft shall not be less than 8.0 inches with taper to a diameter of at least 3.4 inches at the top, or as shown on the plans. Pole shafts shall be a single-piece. Two-pieces, slip-fitted pole shafts will not be allowed.

- Nut Covers: Required for “shoe base” only.

- Hand Hole: Size (Inside Dimension) – 4 inches width x 6 inches height.

- Anchor Bolts: Anchor bolts shall be of sufficient size and strength and meet the requirements of Section 714 of the Standard Specifications.

- Construction Specifications: Standard Specifications for Highway Construction (current edition) with applicable Supplemental Specifications and Special Provisions.

- Base Wind Speed: 90 MPH

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CONSTRUCTION. (A) General. Prior to construction, the Contractor shall provide documentation to the Project Engineer, to ensure Arkansas State Codes (§17-28-101 et seq. and §20-31-101 et seq.) are met. The documentation shall include:

(1) Electricians' license information and expiration date.

(2) The ratio of licensed-electrician-to-apprentice-electricians.

(3) Printed search result of licensed electricians from Arkansas Department of Labor Electrician Licensee Directory (https://www.ark.org/labor/electrician/search.php).

All licenses shall be valid and current.

The Contractor shall contact the local utility companies and/or Arkansas One Call to determine the location of underground utilities in areas where new foundations are to be constructed. The Contractor shall maintain the utility location markings until they are no longer necessary.

The Contractor shall be responsible for all incidental damages during construction at no additional cost to the Department.

If existing underground conduit is to be incorporated into a new system, clean it with a mandrel or cylindrical wire brush and clean with compressed air.

Splices are allowed only at pull boxes and pole bases. All splices shall be made by using UL Listed or UL Certified products. All splices shall be watertight.

Degrees of tilt for luminaires shall be zero (0) to comply with BUG rating of U0 and Arkansas Shielded Outdoor Lighting Act.

(B) Luminaire Poles. All luminaire poles shall be placed according to pole orientations shown on the plans, or as directed by the Engineer.

Aluminum alloy surfaces contacting concrete foundations and steel surfaces shall be coated with or bedded in an aluminum caulking compound, such as alumilastic or other suitable material approved by the Engineer.

Hands holes shall be on the opposite side of the traveled lanes. Mast arms, if used, shall be included with the poles.

Cost of painting, powder coating, or anodization will not be paid for directly, and shall be considered subsidiary to the unit price bid for LED Roadway Illumination Pole. Subsequent to erection, any damaged galvanized coating or paint shall be repaired according to Standard Specification Section 807.88 or Section 638, as appropriate.

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(C) Breakaway Transformer Base. Where designated in the Unit Item as a "T-Base", a breakaway transformer base shall be furnished and installed as per manufacturer's recommendation. Transformer base shall be permanent mold casting of Aluminum Alloy 359-T6 or equal as specified by the AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*. Bases shall be a minimum of 16-inches high and square in cross section. The dimensions shall be approximately those dimensions shown on the plans. Any change in dimension, approved by the Engineer, shall not lessen the design load strength of the base.

A detail sheet illustrating the proper installation of the T-Base shall be supplied to the Department.

A written certification shall be supplied to the Department that the T-Base meets the minimum requirements for AAHSTO breakaway specifications.

In lieu of T-Base, breakaway couplings are allowed with the Engineer's approval.

(D) Pole foundations. Pole foundations for luminaire poles shall be constructed in firm earth to the minimum size and depth shown on the plans. The location of foundations shall be as shown on the plans, or as directed by the Engineer. Foundations shall be placed monolithically and have 1" chamfer at the top. Concrete shall be constructed according to Standard Specifications, Section 802.

(E) Luminaire Wind Loading. Design shall support the maximum luminaire properties for the pole type specified for attachment of the following luminaire(s):

LED Cobra Head

- Effective Projected Area (EPA): less than or equal to 1.5 sq. ft.
- Weight: less than or equal to 35lbs.

Luminaire Arm (where required)

- All arms shall be single member (no truss)
- Length: variable, see plans

(F) Wiring. Two (2) 12 AWG copper with one (1) 12 AWG EGC conductors shall be used for luminaires. Conductors shall run through the shaft to the pole base. Approved watertight breakaway disconnect, dual rated for copper and aluminum connections, shall be used to terminate the wires in the pole base, and from the pole base to the splices in the pull box. The

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current carrying conductor shall be fused. The EGC shall be neutral/dummy fused. All in-line disconnects shall be located in the pole base.

Waterproof breakaways disconnect and URD multi-port connectors shall be a mechanical “Homac Flood-seal”, “Eaton Bussmann,” or approved equivalent.

All conductors for luminaire and wiring requirements for poles with luminaires shall be considered subsidiary to the special provision LED Roadway Illumination Pole.

(G) Miscellaneous. A detail sheet illustrating the proper installation of the transformer base shall be supplied to the Department.

A written certification shall be supplied to the Department that the transformer base meets the minimum requirements for AASHTO breakaway specifications.

Poles not requiring T-Base, or non-breakaway base shall be designated in the Unit Item as “Shoe Base”.

Barrier mounted poles shall be designated in the Unit Item as “Barrier Mounted”.

(H) Test Requirements and Quality Assurance.

A. **Meg and Leakage Test.**
Where specified in the contract, contractor shall perform the Meg Test and Leakage Test in accordance contract specifications. This will be paid for the Electrical Conductors in Conduit pay item.

B. **14-Day Burn-Out Test.**
Contractor shall conduct minimum 14-day burn-out test for the complete lighting system. The Contractor shall be responsible to correct, and if needed, replace any malfunctioning equipment during the 14-day burn out test at no cost to the Department. The 14-day burn-out test shall be restarted in the event of any malfunctioning equipment.

C. **30-Day Performance Test.**
Contractor shall perform 30-day performance test of the lighting system. The lighting system shall be functioning as the normal operations it intended for the system.
The Contractor shall be responsible to correct, and if needed, replace any malfunctioning equipment during the 30-day performance test at no cost to the Department. The 30-day performance test shall be restarted in the event of any malfunctioning equipment. The 30-day performance test shall not start prior to the completion and approval of the 14-day burn-out test.

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D. **6-Month Guarantee period.**
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. Contractor to maintain the lighting system for the 6-month guarantee period. The Contractor shall be responsible to correct, and if needed, replace any malfunctioning equipment during performing test at no cost to the Department. The 6-month guarantee period shall be restarted in the event of any malfunctioning equipment. The 6-month guarantee period shall not start prior to the completion and approval of the 30-day performance test.

E. **Warranty documents.**
The contractor shall provide and transfer 5-year manufacturer's warranty to the maintenance authority (e.g., County, or City) at the end of the 6-month guarantee period.

SUBMITTALS. The Contractor shall submit all manufacturers' parts list, specification sheets, ordering information, shop drawings, IES file of luminaire, luminaire reports: LM-79, LM-80, and LM-21 (L70), released within the last five years, information on all manufacturers' warranty and guarantee information, and certifications. All submittals shall be legible. The Contractor shall clearly state and highlight all requirements mentioned in this Special Provision.

METHOD OF MEASUREMENT. Work completed and accepted under this item shall be measured by the unit. One unit shall consist of luminaire; mast arm, where required; illumination pole; pole foundation; conductors; breakaway disconnect; fuses; and all other hardware required for installing the roadway illumination pole.

"Lumen" shall refer to the lumen output of luminaire, "Luminaire" shall refer to the shape of luminaire used (e.g., cobra head, shoebox, or acorn). "Base" refers to T-Base, or Shoe Base meeting the requirements of this Special Provision. Height shall refer to the mounting height of the luminaire including base.

BASIS OF PAYMENT. Work completed, accepted, and measured as provided above will be paid for at the contract unit price bid per each for LED Roadway Illumination Pole, which price shall be full compensation for erecting, furnishing, and installing the luminaire, mast arm (where required), pole, T-Base (where required), pole foundation and ground rod with grounding electrode; for connection of electrical components, including waterproof breakaway disconnect; for excavation, backfill, compaction, and removal of surplus material; and for all materials, labor, equipment, tools, and incidentals necessary to complete the work.

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Payment will be made under:

Pay Item	**Pay Unit**
LED Roadway Illumination Pole (___ Lumens, ___, ___, __ ‘)	Each

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HIGH MAST LUMINAIRE ELEVATED SERVICE PLATFORM

DESCRIPTION: This item shall consist of fabricating and erecting structural framework, safety handrail, and self-closing gate for the high mast luminaires elevated service platform, including furnishing all necessary materials. All work shall be in accordance with details shown on the plans, with Section 807 of the Standard Specifications, and with this special provision.

CONSTRUCTION DETAILS: Structural framework, safety handrail, and self-closing gate for the service platform shall be fabricated and erected according to the details shown on the plans. Self-closing gate shall meet all applicable OSHA requirements. Shop drawings shall be submitted in accordance with Section 807.04 of the Standard Specifications prior to fabrication. Self-closing gate details, connections and dimensions pertaining to the selected manufacturer's products shall be shown and included in the shop drawings for approval by the engineer.

METHOD OF MEASUREMENT: Work completed and accepted under this item shall be measured by the unit. Each unit shall consist of structural framework and safety handrail along with the incidentals and work required to erect the service platform.

BASIS OF PAYMENT: Work completed and accepted under this item will be paid for at the contract unit price bid of each "High Mast Luminaire Elevated Service Platform." The price shall be full compensation for furnishing all material (including self-closing gates), labor, tools, equipment and incidentals necessary to complete the work as herein described and as shown on the plans. Platform grating material is paid for under the "Metal Grating for Platform" pay item.

Hot-dip galvanizing all structural steel (including metal grating and self-closing gate) and field repairing of galvanized coatings shall not be paid for directly but shall be considered subsidiary to the item "High Mast Luminaire Elevated Service Platform."

Payment will be made under:

Pay Item	Pay Unit
High Mast Luminaire Elevated Service Platform	Each

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METAL GRATING FOR PLATFORM

DESCRIPTION: This item shall consist of furnishing and installing metal grating for the platform around the top of the 10'-0" or 15'-0" tall foundation extensions for high mast luminaires. All work shall be in accordance with details shown on the plans and with these specifications.

MATERIALS: Welded steel grating shall be mild carbon steel of welding quality conforming to ASTM A-569 and have a yield stress of 50 ksi. Bearing bars shall be two inch by 3/16 inch spaced 1-3/16 inches center to center and cross bars shall be four inches on centers. The top surface of metal grating shall be skid resistant. Edges shall be banded with bars ¼" less in height than bearing bars. Banding bars shall be flush with the top of the grating.

CONSTRUCTION METHODS: Grating shall be fabricated to the dimensions shown on the drawings. Shop drawings shall be submitted in accordance with Section 807.04 of the Standard Specifications prior to fabrication of the grating. Attachments of the grating to the support shall be as recommended by the manufacturer. Grating shall be handled and stored to prevent damage. Any grating section with bent or otherwise damages bars or parts shall not be installed.

METHOD OF MEASUREMENT: Metal grating for platform shall be measured by the square foot in place to the nearest 0.1 square foot. No deductions in areas shall be made for cutouts, notching or recessing.

BASIS OF PAYMENT: Metal grating, acceptably completed and measured as provided above, shall be paid for at the contract unit price per square foot bid for "Metal Grating for Platform," which price shall be full compensation for furnishing all materials; erection; and for equipment, tools, labor and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Metal Grating for Platform	Square Foot

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PEDESTAL TYPE SERVICE POINT ASSEMBLY

DESCRIPTION. This item consists of furnishing and installing a pedestal type service point assembly, pedestal concrete foundations, ground rods, breakers, photoelectric cell switch, wire, and miscellaneous fittings at locations designated on the plans and in accordance with the latest version of the National Electrical Code.

All construction and wiring shall be in compliance with local electrical codes per NEC, current edition. The Contractor shall perform all necessary liaison with local power companies in order to ascertain such specific requirements as the power company may apply to each location.

MATERIAL and CONSTRUCTION REQUIREMENTS

The pedestal type service point shall be constructed as shown in the construction plans and details. The enclosure shall be NEMA 3R construction with expandable load centers to allow for future expansion. If required by the local utility it is the contractor's responsibility to install the conduit from the pedestal type service point to the location required by the utility to connect to the local utility. The pedestal type service point and secondary disconnect shall meet EUSERC 308 utility standards. All external hardware such as screws, bolts, hinges, handles, hasps, and sealing screws shall be stainless steel. The unit shall be UL listed as an industrial control panel (UL 508).

If the service point is more than 10 feet from controller cabinet, the Contractor shall provide and install a breaker enclosure on controller cabinet and shall install conduit, electrical service wire with ground as specified on the plans and perform wiring to connect into ARDOT's main service point as part of this contract. Conduit and wire are covered as separate pay items under this contract. Secondary local breaker shall be subsidiary to the service point assembly pay item.

Amperage - The service point assembly shall be rated for minimum of 100 Amps and be supplied with a minimum of 100 Amp 2-pole or 3 pole, main breaker depends on electrical system voltage.

System Voltage

- **a.** For the system voltage of 120/240 V.A.C. shall be single phase, three wire, 4-jaw meter socket.
- **b.** For the system voltage of 277/480 V.A.C. shall be three-phase, four wire, 7-jaw meter socket.

Distribution interior - The distribution interiors shall consist of a switched panel board with five (5) circuits. The circuit breaker shall be magnetic trip only and sized in accordance with the plans.

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PEDESTAL TYPE SERVICE POINT ASSEMBLY

a. For 240 V.A.C. system, the enclosures and circuit breakers shall be rated for 240 V.A.C. or greater.
b. For 277/480 V.A.C. system, the enclosures and circuit breakers shall be rated for 480 V.A.C. or greater.

The contactor amperage shall be rated at a minimum of 100 amps. The service point shall have a photoelectric cell for controlled loads. The unit shall have 22K ampere interrupting capacity. The pedestal type service point assembly shall have a H.O.A. (Hand Off Auto) switch. The distribution interior shall include lighting arrestors of a type approved by the Engineer.

Finish - The pedestal type service point assembly cabinet finish shall be anodized aluminum.

Size 100 Amp Service Pedestal - The enclosure size shall be 16” x 17” x 48” with ringless meter socket or the meter socket required by the utility (Milbank SL series, Tesco Tescoflex series, Eaton CMP series, or approved equal).

Base - The pedestal shall be installed on a concrete pad with anchor bolt kit installed as recommended by the manufacture with a minimum height of 18” above ground level at a location as shown in the plans. The pad shall be of the dimensions as shown in the detail sheet.

Contractor shall install a 5/8" x 10' copper clad ground rod in the first and last pull box and are subsidiary to pay item service point assembly.

Conductors shall continuously run directly from service point to electrical devices and/or pull boxes without splices being made in the conduit.

Electrical service shall be provided by the local utility city/county to a service pole with external raintight breaker (main breaker), galvanized steel service riser, meter loop (if required), and weatherhead at a mutually acceptable point within the right-of-way. If the service point is over 10 feet from the controller, the Contractor shall provide and install a separate two circuit external breaker (breaker enclosure) on or near the controller cabinet and shall install conduit, electrical service wire, and perform wiring to connect into ARDOT’s main breaker as part of this contract. Conduit is paid for as a separate item of this contract.

METHOD OF MEASUREMENTS. Work completed and accepted items will be measured by the unit.

BASIS OF PAYMENT. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid each for Pedestal Type Service Point Assembly for the

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PEDESTAL TYPE SERVICE POINT ASSEMBLY

number of circuits, size and amperage specified which price shall be full compensation for furnishing and installing enclosures(s), circuit breakers(s), main breaker, distribution panel, conduit, concrete pad with anchor bolts, conduit fittings, wire and ground rod; for testing the service point assembly; and for all materials, equipment, tools labor and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Pedestal Type Service Point Assembly (_____)	Each

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ENHANCED THERMOPLASTIC PAVEMENT MARKING

DESCRIPTION. This item shall consist of furnishing and placing enhanced thermoplastic pavement markings, of the color and type specified, all according to these specifications and in conformity with the dimensions and at the locations shown on the plans or as directed.

The markings are to be placed under existing traffic conditions. The work shall comply with the MUTCD except as modified by these specifications.

MATERIALS. The material used shall be a product especially compounded for traffic markings. Each container shall be clearly and adequately marked to indicate the color, weight, batch or lot number, and type of material.

The Contractor shall furnish a certification from the manufacturer showing that the material requirements of this specification have been met.

The material shall meet the requirements of AASHTO M 249 with the following additions:

Yellow materials color specifications shall be as follows:

Color Specifications							
Color Specification Limits - Daytime Initial							
Chromaticity Coordinates							
1		2		3		4	
x	y	x	y	x	y	x	y
0.499	0.466	0.545	0.455	0.518	0.432	0.485	0.454
Luminance Factor, Y (%)							
Minimum				Maximum			
40.0				60.0			

Initial daytime color determination will be made in accordance with AASHTO T 250. Values shall be evaluated on material without the drop-on beads.

Color Specifications Limits - Daytime Retained							
Chromaticity Coordinates							
1		2		3		4	
x	y	x	y	x	y	x	y
0.560	0.440	0.490	0.510	0.420	0.440	0.460	0.400

Retained daytime color limits shall conform to the specifications for a minimum of ninety days for construction pavement markings and one year for all other markings. Retained readings will be determined on a beaded surface in accordance with the requirements of ASTM E 2366.

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Color Specifications Limits - Nighttime Initial with drop-on beads							
Chromaticity Coordinates							
1		2		3		4	
x	y	x	y	x	y	x	y
0.575	0.425	.508	0.415	0.473	0.453	0.510	0.490

Initial nighttime color limits will be determined in accordance with the requirements of ASTM E 2367 on a beaded surface.

The pigments used for the pavement marking material compound shall not contain any compounds that will exceed the values listed in the Environmental Protection Agency Code of Federal Regulations (CFR) 40, Section 261.24, Table 1.

Heat-fused, pre-formed thermoplastic pavement marking material shall meet the requirements of AASHTO M249 with the exception of the relevant differences due to the material being pre-formed.

The material shall not break down or deteriorate if held at the plastic temperature for a period of 4 hours nor by reason of 4 re-heatings to the plastic temperature. The temperature-viscosity characteristics of the thermoplastic material shall remain consistent and there shall be no obvious change in the color of the material.

The material shall not deteriorate by contact with sodium chloride, calcium chloride, or other chemical formations on the roadway or streets, or because of the oil contact on pavement material, or from oil droppings from traffic.

After application and proper drying time, material shall show neither appreciable deformation nor discoloration under local traffic conditions and in air or road temperatures ranging from 0° F (-18° C) to 160° F (71° C). The material shall not smear or spread under normal traffic conditions at temperatures below 160° F (71° C).

Under this specification, the term "drying time" shall be defined as the minimum elapsed time after application when the pavement marking shall have and retain the characteristics required in the preceding paragraphs. In addition, the drying time shall be established by the minimum elapsed time after application when traffic will leave no impression or imprint on the applied marking. The drying time shall not exceed a characteristic straight-line curve, the limits of which are 2 minutes at 50° F (10° C) and 15 minutes at 90° F (32° C), measured at a maximum relative humidity of 70%.

The pavement markings shall maintain its original dimension and placement. The exposed surface shall be free of tack. Cold ductility of the material shall be such as to permit normal movement with the road surface without chipping or cracking. The material shall not be slippery when wet and it shall not lift from the pavement in freezing weather.

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The marking shall have a uniform cross section. The density and character of the material shall be uniform throughout its thickness and shall be completely reflectorized both internally and externally.

The glass beads used for the intermix and the drop-on application shall meet AASHTO M-247 for the gradation specified below, with the exception that the glass beads shall have a minimum 80% true spheres in all gradations.

Intermix Glass Beads. The required 30-40% glass bead intermix shall be comprised of 50% of AASHTO M 247 Type 1 and 50% of AASHTO M 247 Type 3 beads. The beads shall be uncoated.

Drop-On Beads. Drop-on beads shall be applied using a double drop system capable of applying the beads at the specified application rates. Drop-on beads shall consist of AASHTO M 247 60% Type 1 beads and 40% Type 4 beads. The beads shall be dual coated for moisture resistance and adhesion.

CONSTRUCTION REQUIREMENTS. The thermoplastic compound shall be screed or ribbon extruded to the pavement surface. Heat-fused, pre-formed pavement markings shall be fusible to asphalt or Portland cement concrete surfaces by means of the normal heat of a propane weed-burner type of torch or other heating device as recommended by the manufacturer.

The equipment used to apply the thermoplastic compound onto the pavement shall be suitably equipped for heating and controlling the flow of the material. The equipment shall be constructed to provide continuous mixing and agitation of the material. The conveying parts of the equipment, between the main material reservoir and applicator, shall be so constructed as to prevent accumulation and clogging. The equipment shall be constructed so that all mixing and conveying parts, up to and including the applicator, maintain the material at the plastic temperature. The thermoplastic material shall be dispensed at a temperature recommended by the manufacturer. The applicator shall include a cutoff device remotely controlled to provide clean, square stripe ends and to provide a method for applying skip lines.

The thermoplastic reservoir shall be insulated and equipped with an automatic thermostatic control to maintain the proper temperature of the material.

The thermoplastic machine shall comply with the requirements of the National Board of Fire Underwriters.

Beads applied to the surface of the completed stripe shall be applied by an automatic double drop bead dispenser attached to the pavement marking equipment in such a manner that the beads are immediately dispensed upon the completed line. The bead dispenser shall be equipped with an automatic cutoff control, synchronized with the cutoff of the pavement marking equipment. The Type 1 and Type 4 beads shall be automatically applied at a combined total minimum uniform rate of 8 to 10 pounds of glass beads to every 100 square feet. The Type 4

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beads shall be applied first, and shall be followed immediately by the Type 1 bead application. They shall be applied across the entire line width, ensuring uniform application and embedment of the beads to 50-60% of the bead diameter.

Thermoplastic markings shall not be applied to the pavement surface when the pavement surface temperature is less than 50° F or when the pavement surface shows evidence of moisture.

On new concrete pavements where no pavement markings exist or on existing concrete or asphalt pavements where the existing pavement markings are paint or thermoplastic and do not conflict with the proposed pavement markings, blasting with water or sand or a combination thereof will be required to remove any curing compound, oxidized paint or thermoplastic, or dirt to ensure a good bond. This blasting is considered surface preparation. On newly constructed asphalt pavements any sand, grit, or other surface contaminants must be removed using compressed air and/or sweeping. Water blasting may be necessary to remove surface contaminants which cannot be removed by the use of compressed air and/or sweeping. This work is considered surface preparation.

Conflicting pavement markings that exist shall be removed by blasting with water and/or sand or by grinding. This blasting or grinding is considered pavement marking removal.

The thickness of thermoplastic markings above the roadway surface shall be 90 mils. The thickness will be measured by a device supplied by the Contractor during the course of the project capable of measuring the thickness of the marking as installed on the pavement. The minimum thickness, as required above, will be measured in the center of the line when gauged by the equipment described above. The minimum thickness 1/2" from the edges shall not be less than 75% of the thickness required in the center. Maximum thickness of markings is 3/16".

On concrete pavements, paint pavement markings according to Section 718 shall be applied as a primer for the thermoplastic markings, except where thermoplastic markings are to be applied over existing thermoplastic markings. Paint applied to concrete pavement solely as a primer will not be measured or paid for separately, but full compensation therefor will be considered included in the contract unit prices bid for the various items of Enhanced Thermoplastic Pavement Markings. A primer other than paint may be used when recommended by the thermoplastic manufacturer.

A primer is not required for asphalt pavements, but paint pavement markings complying with Section 718 may be used by the Contractor as a primer at no cost to the Department.

When temperature limitations prohibit placement of thermoplastic markings within the 3 or 14 day limit specified in Section 604, the Contractor shall place painted markings according to Section 718. Painted markings required due to temperature limitations will be measured and paid for under Section 604. In this case, the Contractor shall maintain the painted markings at no additional cost to the Department until the thermoplastic markings, including primer if required, are installed.

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Spotting the pavement for centerline location on two-way roadways is required. It will be the responsibility of the Contractor to spot using a string line or chain so that spots are placed at intervals not exceeding 10'. The Department will establish the no passing zones if required. On one-way roadways spotting is required for the initial edge line or lane line placed. Edge lines and/or lane lines may be installed by referencing to center or lane lines. Edge lines shall not be broken for driveways. The trace of the thermoplastic line shall be uniform.

The finished lines shall have well defined edges, shall be uniform in thickness, and shall be straight and true. No stripe shall be less than the specified width. Any corrections of variations in width or alignment of the stripes shall not be made abruptly. Lines that cannot be corrected to meet these requirements shall be removed in accordance with Section 604 at the Contractor's expense.

Line removal as specified on the plans shall be performed in such a manner that no conflicting pavement marking will be left in place. Removal of the pavement marking by a means that will gouge the surface will not be permitted.

The Contractor shall use only workers experienced in installing thermoplastic markings.

METHOD OF MEASUREMENT.

(a) Enhanced Thermoplastic Pavement Markings will be measured by the linear foot (meter) of line of the width specified actually placed.

(b) Sand or water blasting in surface preparation will not be paid for separately, but full compensation therefor will be considered included in the contract unit price bid for Enhanced Thermoplastic Pavement Marking.

(c) Removal of pavement markings will be measured and paid for under Section 604.

BASIS OF PAYMENT. (a) Enhanced Thermoplastic Pavement Markings. Work completed and accepted and measured as provided above will be paid for at the contract unit price bid per linear foot for Enhanced Thermoplastic Pavement Markings of the width specified, which price shall be full compensation for furnishing and installing markings; for surface preparation; and for all labor, equipment, tools, furnishing thickness gauge, and incidentals necessary to complete the work.

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ENHANCED THERMOPLASTIC PAVEMENT MARKING

Payment will be made under:

Pay Item	Pay Unit
Enhanced Thermoplastic Pavement Marking White (_")	Linear Foot
Enhanced Thermoplastic Pavement Marking Yellow (_")	Linear Foot
Enhanced Thermoplastic Pavement Marking (Words)	Each
Enhanced Thermoplastic Pavement Marking (Arrows)	Each
Enhanced Thermoplastic Pavement Marking (Railroad Emblems)	Each
Enhanced Thermoplastic Pavement Marking (Bike Emblems)	Each

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JOB NO. 040904

STEEL SIGN STRUCTURES

Description. This item shall consist of furnishing, fabricating, and installing steel overhead, cantilever, tee mount, and bridge mounted sign structures, luminaire supports when specified, and concrete or drilled shaft foundations in accordance with this Special Provision and to the dimensions and details shown on the plans. Steel sign structures shall be installed at the locations shown on the plans or as directed by the Engineer.

Materials. Structural steel sign support members shall conform to the following specifications:

Angles:	ASTM A709, Gr. 36 (Fy = 36,000 psi)
Plate:	ASTM A709, Gr. 50 (Fy = 50,000 psi)
W-Section:	ASTM A709, Gr. 50 (Fy = 50,000 psi)
Pipe:	ASTM A139, Gr. C, straight-seam welded (Fy = 42,000 psi) ASTM A500, Gr. B (Fy = 42,000 psi), ASTM A501, Gr. B (Fy = 50,000 psi) All grades of pipe require Heat traceability back to the original melting mill.
Z-Shapes:	ASTM A709, Gr. 36 (Fy = 36,000 psi)
Shim Plates:	ASTM A1011, SS, Gr. 36, Type 2, or Gr. 40
Bolts:	ASTM F3125, Grade A325, Type I
Locknuts:	ASTM A563, Grade DH or AASHTO M 292, Grade 2H
Washers:	ASTM F436
Nuts:	ASTM A563, Grade DH or AASHTO M 292, Grade 2H

In addition to material requirements, all pipe used for welded applications shall have a maximum carbon equivalency (CE) of 0.4. All elements in the carbon equivalency (CE) equation shall be quantified and reported in the heat analysis or the product analysis. The following equation shall be used for determining the carbon equivalency (CE):

$$CE = \%C + \%Mn/6 + \%Cu/40 + \%Ni/20 + \%Cr/10 - \%Mo/50 - \%V/10$$

No circumferential butt welds or helical lap splices will be allowed in any pipe sections.

All steel shall be galvanized, unless otherwise noted, in accordance with Subsection 807.19.

All main load carrying tension members greater than 1/2" in thickness shall conform to the requirements of the Longitudinal Charpy V-notch test specified for Zone I minimum service temperature.

Bolts, nuts and washers shall be furnished and galvanized in accordance with Subsection 807.06. Anchor bolts shall conform to AASHTO M 314, Gr. 55, with supplementary requirement

STEEL SIGN STRUCTURES

S1, galvanized in accordance with Subsection 807.07. Nuts and washers for anchor bolts shall be furnished and galvanized in accordance with Subsection 807.07.

Concrete for footings 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.

Commercial Alternates. Subject to the approval of the Engineer and in conformance with the requirements specified herein, the Contractor may supply steel sign support structures as manufactured by a commercial sign structure manufacturer in place of the sign structures detailed in the plans.

If the Contractor elects to use a commercial product, a complete set of design calculations by a Licensed Professional Engineer, a certification by the Professional Engineer that the design conforms to the requirements specified herein and as shown on the plans, and general details or pictures of the proposed type of structure shall be submitted to the Engineer for review and acceptance prior to submitting shop details.

In general, the commercial product shall be a steel truss type structure that will have an appearance similar to the design shown on the plans including the use of a quadri-chord horizontal truss. Welded splices of the chords will not be allowed. Multi-column end supports consisting of round pipes shall be used and the individual members of the truss may be round pipes, angles, or other accepted structural shapes. The column to base plate connection shall use full-penetration groove welds or a socket-type joint with two fillet welds.

Sign supporting structures shall be designed in accordance with the design specifications used for the plan details. Equivalent design parameters specified in the plans for sign area and weights and maximum column heights shall be used for the design of the commercial sign structure. Unless otherwise specified in the plans, all structures shall be designed for Fatigue Category I and fatigue design for galloping loads may be excluded.

Materials, construction methods, and inspection shall comply with this Special Provision. If the fabricator elects to use materials of a different strength than that shown in this Special Provision, this information shall be included in the request for approval of the commercial product.

Shop Drawings. Shop drawings shall be submitted to the Engineer for review and approval prior to commencement of any fabrication. The Engineer's secured approval does not eliminate the Contractor's ultimate responsibility for the accuracy of the shop drawings and meeting the requirements of the plans and specifications.

Fabrication Requirements. Structure bracing members shall be cut and trimmed for proper fit and shall be bolted or welded in correct position to chord or post members to form the specified structural section. Each assembly shall be checked for alignment, correct shape, and sound welds at the fabricating plant prior to shipment. The fabricator shall certify that each complete structure shall be free of misfits or structural deficiencies prior to shipment.

STEEL SIGN STRUCTURES

Sign structures shall be fabricated in accordance with this Special Provision and the applicable provisions of Section 807. Welding shall be in accordance with the AWS D1.1 Structural Welding Code - Steel.

Visual inspection of all welds shall be made and shall include an examination of certificates of prequalification of the welders who are performing the work and an inspection of welding equipment and procedure. In addition to visual inspection, all fillet welds of critical members shall be tested according to the AWS D1.1 Structural Welding Code - Steel, using the magnetic particle method. Critical welds shall include all the connecting welds between the sign columns and base plates and between the sign columns and the top and bottom truss supports. All Complete Joint Penetration (CJP) Groove welds shall be tested according to the AWS D1.1 Structural Welding Code - Steel. An inspection report submitted by the inspection agency or a qualified representative, both approved by the Engineer, including a list of any defective welds that will require repairing, and certificates of prequalification of welding operators, shall be submitted to the Engineer. Further weld testing may be required as directed by the Engineer and will be at the Department's expense, except that the Contractor shall make welded members accessible for inspection at no cost to the State. Any welds found to be defective shall be repaired only by re-welding.

The Contractor shall certify in writing that the welding and fabrication of the structures are in accordance with the governing specifications.

Construction Requirements. Excavation, backfill, compaction, and disposal of surplus materials shall be performed according to Section 801. Compaction shall be accomplished to the extent necessary to prevent future settlement of the backfill. Disturbed surfaces shall be returned to the original condition.

The applicable provisions of Sections 802, 804 and 807 shall govern the construction and installation of concrete, reinforcing steel and structural steel, respectively.

Anchor bolts shall be pretensioned. Exposed anchor bolt threads shall be cleaned and lubricated prior to installation of leveling nuts. Threads and bearing surfaces of nuts shall be cleaned and lubricated immediately prior to assembly. Leveling nuts shall be initially installed at the same elevation. Leveling nuts/washers shall be in firm contact with the base plate prior to snug tightening of the top nuts. Top nuts/washers shall be in firm contact with base plate when snug tight. Beveled washers may be required to provide firm contact. After top nuts are snug tight, the lower nuts shall be tightened to a snug tight condition to ensure full contact is achieved. After all nuts have been brought to a snug tight condition, bolts shall be tensioned using the turn-of-nut method. For the turn-of-nut method, nuts shall be incrementally turned using a star pattern until achieving the required rotation specified in Table 1-1, a minimum of 2 tightening cycles (passes) will be required.

STEEL SIGN STRUCTURES

Table 1-1 Nut Rotation for Turn-of-Nut Pretensioning

Anchor Bolt Diameter	Nut Rotation [a,b]
≤ 1-1/2 inch	1/3 turn
> 1-1/2 inch	1/6 turn

[a] Nut rotation is relative to the anchor bolt. The tolerance is plus 20 degrees, minus 0 degrees

[b] A beveled washer shall be used if the nut is not in firm contact with the baseplate or the outer face of the baseplate is sloped more than 1:40.

All truss field sections shall be shop assembled unless otherwise noted in the plans.

Field welding will not be permitted except upon approval in writing by the Engineer.

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 to the road unless otherwise directed by the Engineer.

Subsequent to erection, any damaged galvanized coating shall be field repaired in accordance with Subsection 807.88.

Method of Measurement. Steel Overhead Sign Structure, Steel Cantilever Sign Structure, Steel Tee Mount Sign Structure, and Steel Bridge Mounted Sign Structure will be measured by the unit, including foundations, complete in place. One unit consists of the structure and all Z-bars, brackets, bolts, washers, nuts, and other hardware necessary to complete the installation and mount the sign(s). The fabrication and installation of the signs will be paid for under Section 725 or 726.

Basis of Payment. Steel Overhead Sign Structure, Steel Cantilever Sign Structure, Steel Tee Mount Sign Structure, and Steel Bridge Mounted Sign Structure completed and accepted and measured as provided above will be paid for at the contract unit price bid per each for Steel Overhead Sign Structure, Steel Cantilever Sign Structure, Steel Tee Mount Sign Structure, and Steel Bridge Mounted Sign Structure which price shall be full compensation for furnishing, fabricating, and installing the structure including sign framing, supporting structures, and concrete or drilled shaft foundations; for excavation, backfill, compaction, removal and disposal of surplus materials, and replacement of existing surfaces; for all weld testing; 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
Steel Overhead Sign Structure (__)	Each
Steel Cantilever Sign Structure (__)	Each
Steel Tee Mount Sign Structure (__)	Each
Steel Bridge Mounted Sign Structure (__)	Each

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SPECIAL PROVISION

JOB NO. 040904

WORK ZONE LAW ENFORCEMENT

DESCRIPTION: Arkansas Highway Police (AHP) officer(s) will be made available on this project to provide a law enforcement presence and enhance safety for motorists and workers through the work zone. Enforcement services may include speed, traffic, safety, and/or weight control.

The Engineer shall advise the Chief of the Arkansas Highway Police of the time and location of the Pre-Construction Conference. AHP commanders or patrol officers will also be invited to 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 communicate with the Engineer and to determine the need for AHP services regarding phases, times of work, enforcement type, and location.

On freeways and other fully controlled access facilities, only the utilization of Arkansas Highway Police (AHP) is permitted unless otherwise approved by the Engineer.

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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 its 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.

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.

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT

Description. This item shall consist of furnishing and installing Omni-directional breakaway sign supports for roadside mounted signs according to these specifications and to the dimensions and details and at the locations shown on the plans or as directed.

Materials. The posts shall conform to the Standard Specification for Electric-Resistance-Welded Metallic-Coated Carbon Steel Mechanical Tubing, ASTM designation A787.The length of each post for each sign shall be verified by the Contractor before ordering to meet the existing field conditions and to conform to the specified sign mounting heights.

The Contractor shall submit to the Engineer certified mill test reports showing chemical analysis and physical tests. The square sign post tubing shall be hot-dipped galvanized conforming to ASTM specification A653 designation G90. The weld is zinc-coated after scarfing operation. The cross section of the post shall be square tubing formed of 10 gauge steel, carefully formed into size, and induction welded in such a manner that neither weld nor flash shall interfere with telescoping properties.

Holes shall be 3/ 8” in diameter on 1" centers for the entire length of the post. Holes shall be on the center line of each side in true alignment and opposite to each other. All holes and sheared ends shall be free from burrs.

All high strength bolts, nuts, and washers shall comply with AASHTO M l64M. Shims shall be fabricated from brass shim stock or strip complying with ASTM B 36.

Concrete for footings 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 40. Footings for standard sign supports shall not be reinforced.

Hardware required for attachment of the sign(s) to the support shall comply with Section 724.

Construction Requirements. Excavation, backfill, compaction, and disposal of surplus materials shall be performed according to Section 80l. Compaction shall be accomplished to the extent necessary to prevent future settlement of the backfill. Disturbed surfaces shall be returned to the original condition.

The applicable provisions of Sections 802 and 804 shall govern the construction and installation of concrete and reinforcing steel.

Field welding will not be permitted except upon approval in writing by the Engineer. The Omni-directional breakaway 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

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORT

to the road unless otherwise directed by the Engineer. Subsequent to erection, any damaged galvanized coating shall be repaired according to Subsection 807.88.

The procedure for assembly of base connection, as shown on the plans, shall be followed explicitly.

Method of Measurement. Omni-directional breakaway sign supports will be measured by the unit. One unit consists of the post(s) and all bolts, nuts, washers, brackets, and other hardware necessary to complete the installation and mount the sign(s). The fabrication and installation of the sign will be paid for under Section 725 or 726.

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 Square Omni-directional breakaway sign supports of the type specified, which price shall be full compensation for furnishing, fabricating, and installing the support; and for all materials, labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Omni-directional breakaway sign supports (Type__)	Each

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

ARCHITECTURAL FINISH

Description. This item shall consist of providing a pattern finish to concrete surfaces in accordance with these specifications and in conformity with the locations, dimensions, and lines shown on the plans.

General. The pattern shall be Ashlar Stone or approved equal. Prior to construction, the Contractor shall submit a work plan to the Engineer for approval showing materials, construction methods, and other features affecting the pattern construction. The work performed shall be according to the approved work plan.

(a) Ashlar Stone Finish. The Ashlar Stone pattern shall have ridges as shown in the plans and shall be approximately 1 1/2" deep. Before construction of the parapets, wingwall rails, and transitional approach railing, approval of the Ashlar Stone Architectural Finish will be required. Approval will be based on a sample panel with approximate dimensions of 3 feet by 6 feet, representing the back of the superstructure parapet. In lieu of a sample panel, the Engineer may accept proof of previous work performed with similar size panels and finish.

Method of Measurement. Architectural Finish will be measured by the square foot. The quantities shown on the plans for Architectural Finish will be considered as the final quantities and no further measurement 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.

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 Architectural Finish, which price shall be full compensation for furnishing materials; form liners; forms; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Architectural Finish	Square Foot

For information and payment for Architectural Finish applied to retaining wall panels, see SP Job No. 040904 “RETAINING WALLS”.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

TEXTURED COATING FINISH

Subsection 802.19 Finishing Concrete Surfaces of the Standard Specifications, Edition of 2014, is modified as follows:

(a) General. After the third paragraph, add:

The Contractor shall use a Class 3, Textured Coating Finish (Smooth Texture) on some parts of Bridge Nos. 07691, A7693, B7693, and 07694 and some parts of Retaining Wall Nos. 6A and 6B. All surfaces shall be cleaned as necessary for bonding of the finish. Class 1 or Class 2 Protective Surface Treatment shall not be used on surfaces where textured coating finish is specified.

(b) (3) Class 3, Textured Coating Finish. Delete the second paragraph and replace with:

The Contractor shall furnish a small quantity of the materials for textured coating finish in the specified colors for use on a designated test area. Color adjustment may be required as directed by the Engineer and may require application to additional test areas. The final colors used on the project shall be as approved by the Engineer.

The color of the textured coating finish from Federal Color Standard 595 B and the areas it is to be applied to Bridge Nos. 07691, A7693, and B7693 and Retaining Wall Nos. 6A and 6B shall be as follows:

Light Brown, equal or close to Shade 33578:

- Exposed surfaces of intermediate bent caps and columns, excluding top of cap.
- Exposed surfaces of end bents including outside faces (non-roadway side) and top of wingwall rail, but excluding top of backwall and cap, front face of backwall between exterior girders, and Ashlar Stone Architectural Finish rail enhancement.
- Exposed surfaces of pedestals, excluding top of pedestals, for all bents.
- Outside face, and top of bridge rails, excluding Ashlar Stone Architectural Finish rail enhancement.
- Outside faces of the slab and the undersides of the slab outside exterior girders.
- Exposed surfaces of MSE retaining wall coping and State of Arkansas Form Insert recess, including chamfers.
- Other areas as directed by the Engineer.

Dark Brown, equal or close to Shade 30219:

TEXTURED COATING FINISH

- Ashlar Stone Architectural Finish rail enhancement on outside face of bridge rails and wingwall rails including chamfers.
- Exposed Ashlar Stone Architectural Finish surfaces of MSE retaining walls, excluding State of Arkansas Form Insert recess.

The color of the textured coating finish from Federal Color Standard 595 B and the areas it is to be applied to Bridge No. 07694 shall be as follows:

Cinnamon, equal or close to Shade Preston Shield Color No. B3 or approved equal:

- Exposed surfaces of intermediate bent caps and columns, excluding top of cap.
- Exposed surfaces of end bents, excluding both faces and top of wingwall rail, top of backwall and cap, and front face of backwall between exterior girders.
- Exposed surfaces of pedestals, excluding top of pedestals, for all bents.
- Other areas as directed by the Engineer.

Textured coating finish of exposed surfaces of the substructure and retaining walls shall be applied after the final ground line of the cut or embankment has been established.

Method of Measurement. Textured Coating Finish applied at the direction of the Engineer will be measured by the square yard. Measurement will be made of the actual area covered as directed. The quantities shown on the plans for Textured Coating Finish will be considered as the final quantities and no further measurement 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.

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 Textured Coating Finish, which price shall be full compensation for furnishing materials; for cleaning surfaces and application; and for all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Textured Coating Finish	Square Yard

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

RETAINING WALLS

Description. This item shall consist of the construction of mechanically stabilized earth (MSE) walls in accordance with these specifications and in conformity with the locations, dimensions, lines and grades shown on the plans. Modular Block wall systems will not be considered. All references to Division, Section, and Subsection refer to the Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 Edition).

General. The same type retaining wall system shall be used at all locations. Any approved retaining wall system, except Modular Block Walls, on the Qualified Products List (QPL) will be acceptable provided that:

1. The maintenance-free life expectancy shall be at least seventy-five (75) years.
2. Retaining walls shall be designed by an Arkansas Registered Professional Engineer. The design shall be in accordance with the current edition of the AASHTO LRFD Bridge Design Specifications and this Special Provision.
3. The basic wall geometry, including top and bottom of wall face, grade lines, length, and limits of walls shall be as shown on the plans.
4. Structural elements of the wall shall not interfere with the location of roadway drainage structures and end bent piling as shown on the plans.
5. An architectural finish as shown in the plans, or approved equivalent, will be required for the concrete wall face.
6. The wall system design shall comply with requirements for global stability as determined by the Department.
7. The passive resistance of the soil at the front face of the wall shall be neglected in the analysis of external stability for sliding.
8. The factored bearing resistance shown in the plans is recommended for the existing foundation material based on an estimated width of the reinforced zone. The Department will evaluate factored bearing pressures in excess of the recommended factored bearing resistance and in any undercut areas upon submittal of the wall system design.

Materials. (a) Concrete Facing Panels. The reinforced concrete facing panels shall be rectangular or square in shape, fabricated in accordance with Subsection 802.21 and Section 804. The materials shall meet the requirements of Subsections 802.02 and 804.02 with the following additions and modifications:

RETAINING WALLS

1. The Contractor shall submit his concrete mix design to the Resident Engineer for approval. The Portland cement concrete shall have a minimum 4,000 psi compressive strength at 28 days; with a minimum cement factor of 6 bags per cubic yard, an air content of 6% ± 2%, and a maximum aggregate size of 1 inch.
2. The units shall be fully supported by the forms until the concrete reaches a minimum compressive strength of 2,500 psi as evidenced by test cylinders cured in the same manner as the panels and tested in accordance with AASHTO T 22.
3. All units shall be handled, stored, and shipped in such a manner as to eliminate the dangers of chipping, discoloration, cracks, fractures, and excessive bending stresses. Stored panels shall be supported in firm blocking to protect the panel connection devices and the exterior finish.
4. Panel connection devices shall be positioned within a tolerance of 1 inch. Panel squareness, as determined by the difference between the two diagonals, shall not exceed 0.5 inch.
5. Units shall be rejected because of failure to meet any of the requirements specified above. In addition, any or all of the following shall be sufficient cause for rejection:
   - Imperfections.
   - Honeycombing or open texture concrete.
   - Cracked or severely chipped panels.
   - Color variation on front face of panel due to excess form oil or other causes.
6. The manufacturer shall have a Quality Control program whereby representative samples of raw materials (cement, aggregates, reinforcement) are tested and/or reviewed for conformity to specifications. In addition, quality control tests (slump, air content, concrete temperature, compressive strength, and gradations, as applicable) shall be conducted by the manufacturer during casting operations. Quality control tests shall be conducted in accordance with the AASHTO Testing Procedures. The frequency of quality control tests shall be a minimum of one (1) set of tests per pouring day for each type product (panels or coping).

   Records of materials used in the manufacture of reinforced concrete facing panels and quality control tests shall be maintained by the manufacturer. The Department shall reserve the right to review records for compliance with all applicable specifications and to reject any non-conforming units. Reinforced concrete facing panels shall not be shipped nor incorporated into the job until all testing has been completed. Copies of the manufacturer's quality control and inspection records shall be provided to the Engineer upon request.

   The Department shall reserve the right to observe all manufacturing processes and conduct random quality assurance tests to determine compliance. If deemed necessary, drilled cores shall be taken at the direction of the Engineer to verify the compressive strength.

RETAINING WALLS

All reinforced concrete facing panels manufactured for use on Department projects shall be legibly marked on their back side with the cast date and a distinct identification number.

7. The manufacturer shall furnish a Certificate of Delivery for each shipment stating that the listed products conform to all applicable specifications. The information on the Certificate of Delivery shall include the state job number (or state purchase order number), consignee, destination, number of pieces, cast dates, identification numbers, and plant of origin. One copy of the Certificate of Delivery and shipping papers shall be furnished to the Engineer.

(b) Soil Reinforcing and Attachment Devices. All reinforcing and attachment devices shall be carefully inspected to ensure they are true to size and free from defects that may impair their strength and durability. Metallic reinforcements and attachment devices shall be galvanized in accordance with AASHTO M 111.

(c) Select Granular Backfill. (1) Method A Construction. When Method A Construction is shown in the plans, all backfill material used within the reinforcement zone shall be granular having an angle of internal friction greater than 28 degrees as determined by the standard direct shear test AASHTO T-236 on the portion finer than the No. 10 sieve, using a sample of the material compacted to 95 percent of AASHTO T-99 and shall have no cohesion. Aggregates meeting the material requirements of Section 302 for Selected Material (Class SM-1) or the material requirements of Section 303 for Aggregate Base Coarse (Class 7) are acceptable backfill materials and shall be placed and compacted in accordance with Subsections 210.07, 210.09, and 210.10. The Contractor shall perform quality control and acceptance sampling and testing of the backfill in accordance with Section 306, with the exception that the minimum frequency of acceptance testing shall be one lot test for density, moisture content, gradation, and plasticity index for each 3,000 cubic yards of backfill material placed except that at least one set of tests shall be performed on each layer of backfill. If the material used for Select Granular Backfill is Aggregate Base Coarse (Class 7) and the source remains consistent, testing requirements for gradation and plasticity index shall meet the minimum frequency of one test per 3,000 cubic yards. The Engineer may waive PI testing as outlined in Section 306. Construction requirements outlined in Subsection 302.02 shall apply.

Drainage fill material placed immediately behind the wall shall conform to the requirements of a Class 3 mineral aggregate as specified in Subsections 403.01 and 403.02. As shown on the plans, drainage fill material shall be placed for a minimum width of 12 inches behind the wall, for the full height of wall, in 10 inch loose lifts and compacted in such a manner as to avoid any damage or distortion of wall materials or wall alignment. The Contractor shall perform quality control and acceptance sampling and testing of the drainage fill material in accordance with Section 306, with the exception that the minimum frequency of acceptance testing shall be one lot test for gradation and decantation loss for each 500 cubic yards of drainage fill material.

The Contractor shall sample and test the backfill material for Dry Rodded Unit Weight in accordance with AASHTO T-19 and angle of internal friction prior to wall construction. The angle of internal friction used in the wall system design shall not exceed the angle of internal friction of the backfill material within the reinforcement zone. The Contractor shall conduct one additional shear test on a sample taken during the wall construction at a location as determined

RETAINING WALLS

by the Engineer. If the backfill material source changes and/or material properties change during wall construction from the original sample tested, the angle of internal friction shall be re-verified. If the additional test result or the re-verified test result is less than the value utilized in the design of the wall, the material shall be removed and replaced with acceptable backfill material.

(2) Method B Construction. When Method B Construction is shown in the plans, all backfill material used within the reinforcement zone shall be mechanically crushed natural rock or stone of igneous, sedimentary, and/or metamorphic origin produced from a solid geological formation by quarrying methods meeting the requirements of Subsection 802.02(c) Coarse Aggregate for Class S concrete. The direct shear requirements may be waived in lieu of an assumed 34 degree soil angle of internal friction. The Contractor shall perform quality control and acceptance testing for gradation at a frequency of one test per 3,000 cubic yards. The Contractor shall sample and test the backfill material for Dry Rodded Unit Weight in accordance with AASHTO T-19 prior to wall construction.

(d) Filter Fabric. All joints between panels on the back face of the wall shall be covered with a geotextile filter fabric meeting the requirements of Subsection 625.02, Type 2. The minimum width and lap shall be 12 inches. Additional Type 2 geotextile filter fabric shall be placed as shown in the plans. The geotextile fabric and reinforcing elements used in the wall construction shall be able to resist deterioration when exposed to the properties of the concrete in the wall facing panels and the backfill material selected. Geotextile fabric shall be protected from sunlight during storage.

(e) Coping. Concrete for coping shall comply with the requirements of Section 802 for Class S(AE) Concrete. Reinforcing steel shall comply with the requirements of Section 804.

(f) Buy America Requirements. All iron and steel material used on Department projects must be in compliance with "Buy America" requirements and Subsection 106.01. All manufacturing processes of the iron or steel in a product (i.e., smelting/remelting, and any subsequent process which alters the steel material's physical form or shape or changes its chemical composition) must occur within the United States to be considered of domestic origin. This includes, but is not limited to, such processes such as rolling, extruding, machining, bending, grinding, drilling, and applying coatings. The use of pig iron or processed, pelletized, and reduced iron ore manufactured outside of the United States is permitted in the domestic manufacturing process for steel and/or iron materials. All steel and iron mill test reports must include a statement certifying that all manufacturing processes for the iron or steel product occurred in the United States. Each supplier/fabricator of an intermediate product shall also certify that the product complies with "Buy America" requirements.

Working Drawings. At least 30 calendar days prior to fabrication of the concrete panels, the Contractor shall submit four (4) copies of design calculations, working drawings, and material and construction specifications to the Resident Engineer for review. This will be used to verify compliance with design requirements. The drawings shall include details that provide for flexibility, differential settlement, and aesthetics at changes in direction of the wall alignment. Test results for gradation, plasticity index, unit weight and angle of internal friction of the Select Granular Backfill shall be submitted with the Working Drawings for all proposed sources. These

RETAINING WALLS

results shall state Method A Construction or Method B Construction. The wall design engineer shall review all proposed Select Granular Backfill sources and shall state in writing that the materials meet the wall manufacturer's recommendations regarding Electrochemical Properties. The above verification process shall not relieve the Contractor of any of his responsibility under the contract for the successful completion of the work.

Architectural Finish. The Ashlar Stone pattern shall have ridges approximately 1" deep. Before production of the precast concrete panels may begin, approval of the architectural finish will be required. Approval will be based on a sample panel with approximate dimensions of 6 feet by 6 feet. In lieu of a sample panel, the Engineer may accept proof of previous work performed with similar size panels and finishes. Prior to construction of any panels, a work plan showing the materials, construction methods, name and pattern number of form liner manufacturer, and other features affecting the finish shall be submitted to and approved by the Engineer. All panels shall be constructed according to the approved plan.

Construction. The Contractor will be required to have an experienced manufacturer's representative knowledgeable in the design and construction of the retaining wall system available throughout the construction period. The Construction Method shall not change during wall construction. The Contractor shall furnish a certification that the components of the wall system were manufactured in compliance with the approved design and that the materials furnished comply with the specifications.

Prior to wall construction, the foundation shall be compacted as directed by the Engineer. Any unsuitable foundation material shall be excavated and backfilled according to the undercutting requirements of this special provision. At each foundation level, a cast-in-place unreinforced concrete leveling pad shall be provided. The leveling pad shall be in place a minimum of 24 hours before panel erection begins and have a minimum earth cover as shown on the plans. Concrete for the leveling pad shall comply with the requirements of Section 802 for Class A or higher strength concrete as required by the wall supplier's construction requirements.

Precast concrete panels shall be placed so that their final position is vertical as shown on the plans. As drainage and backfill material are placed behind the panels, the panels shall be maintained in position by means of temporary wedges or bracing according to the wall supplier's recommendations. Concrete facing vertical tolerances and horizontal alignment tolerances shall not exceed 0.75 inch per ten (10) feet of length. During construction, the maximum allowable offset in any panel joint shall be 0.75 inch. The completed overall vertical tolerance of the wall (top to bottom) shall not exceed 0.5 inch per ten (10) feet of wall height.

As shown on the plans, drainage fill material shall be placed for a minimum width of 12 inches behind the wall, for the full height of the wall, in 10 inch loose lifts and compacted in such a manner as to avoid any damage or distortion of wall materials or wall alignment.

Select Granular Backfill placement shall closely follow the erection of each lift of panels. Backfill material within the reinforcement zone shall be compacted and placed in conformance with the applicable provisions of Subsection 302.03. At each reinforcement level, the backfill shall be placed to the level of the connection. Backfill placement methods near the facing shall assure that no voids exist directly beneath the reinforcing elements.

RETAINING WALLS

Backfill shall be placed in such a manner as to avoid any damage or disturbance of the wall materials or misalignment of the facing panels or reinforcing elements. Any damage or distortion of the wall materials during backfill placement shall be corrected at the Contractor's expense. Construction traffic will not be permitted on wall reinforcement unless a minimum backfill cover of 8 inches is provided.

The Contractor shall be responsible for preventing surface water or rainwater from damaging the retaining walls during construction. This shall include shaping the backfill to prevent water from ponding or flowing on the backfill or against the wall face. Any damage or movement caused by erosion, sloughing, or saturation of the retaining wall or embankment backfill shall be repaired at the Contractor's expense.

Unless otherwise noted in the plans, the exposed surfaces of the coping on the top of the wall shall receive a Class 2 Rubbed Finish in accordance with Subsection 802.19.

Undercutting. All material within any undercut areas shown in the plans shall be excavated to the limits shown. Additional soft and unstable materials shall be excavated as directed by the Engineer. Unless otherwise shown in the plans, all undercut areas shall be backfilled with granular material meeting the requirements specified in the plans. The granular backfill material shall be placed and compacted in accordance with Subsections 210.07, 210.09 and 210.10. The Contractor shall perform quality control and acceptance sampling and testing of the backfill in accordance with Section 306, with the exception that the minimum frequency of acceptance testing shall be one lot test for density, moisture content, gradation and plasticity index for each 3000 cubic yards of backfill material placed except that at least one set of tests for density and moisture content shall be performed on each layer of backfill.

When Stone Backfill is shown in the plans, all undercut areas shall be backfilled with material meeting the requirements of Section 207 Stone Backfill. The Stone Backfill shall be placed, measured and paid in accordance with Section 207.

Method of Measurement. Retaining walls will be measured by the square foot of front surface area between the top of the leveling pad at the face of the wall and the top of the wall including any coping required.

All excavation within the limits of any undercut areas will be measured as Unclassified Excavation unless Stone Backfill is specified in the plans. All excavation directly over any undercut areas, outside the limits of the reinforcement zone, within the reinforcement zone and for the leveling pad will be measured as Unclassified Excavation.

All backfill and drainage fill material placed behind retaining walls within the reinforcement zone will be measured as Select Granular Backfill in its final position in accordance with Subsection 210.12(c).

All backfill placed directly over the limits of any undercut areas and outside the limits of the reinforcement zone will be measured as Compacted Embankment. All backfill within the limits of any undercut areas will be measured as shown in the plans.

RETAINING WALLS

Basis of Payment. Retaining walls completed, accepted and measured as provided above will be paid for at the contract unit price bid per square foot for Retaining Wall, which price shall be full compensation for designing; for quality control and acceptance sampling and testing; for providing the architectural finish; for furnishing all materials except backfill and drainage fill materials but including pipe underdrains and joint materials; for constructing the leveling pad, the wall, and the coping; and for all labor, equipment, tools, and incidentals necessary to complete the work.

All excavation within the limits of any undercut areas will be paid for as Unclassified Excavation unless Stone Backfill is specified in the plans. All excavation directly over any undercut areas outside the limits of the reinforcement zone, within the reinforcement zone and for the leveling pad will be paid for as Unclassified Excavation in accordance with Section 210. All backfill within the limits of any undercut areas will be paid for as shown in the plans.

All backfill and drainage fill material placed behind retaining walls within the reinforcement zone, including quality control and acceptance sampling and testing, will be paid for as Select Granular Backfill in accordance with this Special Provision.

All backfill directly over the limits of any undercut areas and outside the limits of the reinforcement zone, including quality control and sampling and testing, will be paid for as Compacted Embankment in accordance with Section 210.

The Contractor shall comply with applicable Federal, State, and local laws governing safety in accordance with Subsection 107.01(b) in any and all excavation and/or shoring operations. Any shoring and additional excavation with replacement backfill outside the reinforcement zone or outside the limits and not directly over any undercut areas will not be paid for directly, but will be considered subsidiary to the unit price bid per square foot for Retaining Wall.

Payment will be made under:

Pay Item	**Pay Unit**
Retaining Wall	Square Foot
Select Granular Backfill	Cubic Yard

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

TEMPORARY RETAINING WALLS

Description. This item shall consist of constructing mechanically stabilized earth (MSE) temporary wire face walls in accordance with these specifications and in conformity with the locations, dimensions, lines and grades shown on the plans. All references to Division, Section, and Subsection are made to the Standard Specifications for Highway Construction, Edition of 2014.

General. The temporary retaining walls are to be constructed to provide for stage construction of the roadway as shown on the plans. When the portion of the roadway immediately adjacent to the temporary retaining wall is constructed, the temporary walls will be retained and buried.

The same type temporary retaining wall system shall be used at all locations which will be acceptable provided that:

1. Temporary retaining walls shall be designed by an Arkansas Registered Professional Engineer. The design shall be in accordance with the current edition of the AASHTO LRFD Bridge Design Specifications and this Special Provision. When used with a permanent wall system the temporary wall system shall be compatible.
2. The basic wall geometry, including top of walls, grade lines, and length and limits of walls shall be as shown on the plans.
3. Structural elements of the wall shall not interfere with the location of roadway drainage structures and end bent piling as shown on the plans.
4. The wall system design shall comply with requirements for global stability as determined by the Department for temporary retaining walls.
5. The passive resistance of the soil at the front face of the wall shall be neglected in the analysis of external stability for sliding.
6. The factored bearing resistance shown in the plans is provided for the in-situ foundation material based on an estimated width of the reinforcement zone. The Department will evaluate recommended factored bearing resistance less than factored bearing pressure, upon submittal of the wall system design.
7. Temporary retaining walls shall have a minimum five year design life.
8. Metal components shall conform to the minimum requirements of AASHTO M 32 and welded into the finished configuration in accordance with AASHTO M 55.
9. Retention fabric shall be as specified by the wall system supplier.
10. Material specifications for all geotextiles shall be provided with the working drawings. The design engineer shall provide certification that all exposed geotextiles meet the required design life.

TEMPORARY RETAINING WALLS

Materials. (a) Select Granular Backfill. All backfill material used within the reinforcement zone shall be granular having an angle of internal friction greater than 28 degrees as determined by the standard direct shear test AASHTO T 236. The direct shear test shall be performed on the portion passing the No. 10 sieve, using a sample of the material compacted to 95 percent of AASHTO T 99, Method A. Aggregates meeting the material requirements of Section 302 for Selected Material (Class SM-1), the material requirements of Section 303 for Aggregate Base Course (Class 7), or the material requirements Subsection 802.02(c) for Coarse Concrete Aggregate for Class S concrete are acceptable backfill materials.

The Contractor shall sample and test the backfill material prior to wall construction to verify that the angle of internal friction used in the wall system design does not exceed the measured angle of internal friction of the backfill material to be used within the reinforcement zone. The Contractor shall conduct one additional shear test on a sample taken during the wall construction at a location as determined by the Engineer. Also, if the backfill material source changes and/or material properties change during wall construction from the original sample tested, the angle of internal friction shall be re-verified. If either the additional test result or the re-verified test result is less than the design value used in the design of the wall, the material shall be removed and replaced with acceptable backfill material.

The Contractor shall perform quality control and acceptance sampling and testing of the backfill in accordance with Section 306, with the exception that the minimum frequency of acceptance testing shall be one lot test for density, moisture content, gradation, and plasticity index for each 3,000 cubic yards of backfill material placed and that at least one set of tests for density and moisture content shall be performed on each layer of backfill.

If Coarse Concrete Aggregate is utilized, testing for density, moisture content, plasticity, and direct shear are not required. The direct shear requirements may be waived in lieu of an assumed internal friction angle of 34 degrees.

(b) Buy America Requirements. All iron and steel material used on Department projects must be in compliance with “Buy America” requirements and Subsection 106.01. All manufacturing processes of the iron or steel in a product (i.e., melting/remelting, and any subsequent process which alters the steel material’s physical form or shape or changes its chemical composition) must occur within the United States to be considered of domestic origin. This includes, but is not limited to, such processes such as rolling, extruding, machining, bending, grinding, drilling, and applying coatings. The use of pig iron or processed, pelletized, and reduced iron ore manufactured outside of the United States is permitted in the domestic manufacturing process for steel and/or iron materials. All steel and iron mill test reports must include a statement certifying that all manufacturing processes for the iron or steel product occurred in the United States. Each supplier/fabricator of an intermediate product shall also certify that the product complies with “Buy America” requirements.

Working Drawings. At least 30 calendar days prior to fabrication of the temporary retaining wall, the Contractor shall submit four (4) copies of design calculations, working drawings, and material and construction specifications to the Engineer for review. This will be used to verify compliance with design requirements. The drawings shall include details that provide for flexibility, differential settlement, and changes in direction of the wall alignment.

TEMPORARY RETAINING WALLS

The above verification process shall not relieve the Contractor of any of their responsibility under the contract for the successful completion of the work.

Construction. The Contractor will be required to have a manufacturer's representative experienced and knowledgeable in the design and construction of the temporary retaining wall system available throughout the construction period.

The Contractor shall furnish a certification that the components of the temporary retaining wall system were manufactured in compliance with the approved design and that the materials furnished comply with the specifications and this SP.

Prior to wall construction, the foundation shall be proof rolled as directed by the Engineer. Any unsuitable foundation material shall be excavated and backfilled according to the undercutting requirements of this special provision.

The wall system components shall be constructed in accordance with the wall system supplier's recommendations and construction manual. The wall shall be constructed vertical or as near vertical as the wall system will allow.

Select Granular Backfill material shall be placed and compacted in accordance with Subsections 210.07, 210.09 and 210.10. Backfill shall be placed in such a manner as to avoid any damage or disturbance to the wall materials or misalignment of the facing or reinforcing elements. Any misalignment, damage, or distortion of the wall materials during backfill placement shall be corrected at the Contractor's expense. Construction traffic will not be permitted on the wall reinforcement unless a minimum backfill cover of 8 inches is provided.

The Contractor shall be responsible for preventing surface water or rainwater from damaging the temporary retaining walls during construction. This shall include shaping the backfill to prevent water from ponding or flowing on the backfill or against the wall face. Any damage or movement caused by erosion, sloughing, or saturation of the temporary retaining wall or embankment backfill shall be repaired at the Contractor's expense.

Undercutting. All the material within any undercut areas shown in the plans shall be excavated to the limits shown. Additional soft and unstable materials shall be excavated as directed by the Engineer. All undercut areas shall be backfilled with Select Granular Backfill unless otherwise specified in the plans or directed by the Engineer.

Method of Measurement. Temporary retaining walls will be measured by the square foot of total surface area between the base of the wall and the top of the wall.

All excavation within the limits of any undercut areas and excavation within the reinforcement zone will be measured as Unclassified Excavation.

All backfill placed behind temporary retaining walls within the reinforcement zone will be measured as Select Granular Backfill in its final position in accordance with Subsection 210.12(c). All backfill placed within the limits of any undercut areas will also be measured as Select Granular

TEMPORARY RETAINING WALLS

Backfill in its final position in accordance with Subsection 210.12(c) unless alternative remediation is directed in the plans or by the Engineer.

Basis of Payment. Temporary retaining walls completed, accepted, and measured as provided above will be paid for at the contract unit price bid per square foot for Temporary Retaining Walls, which price shall be full compensation for designing; for quality control and acceptance sampling and testing; for furnishing all materials except backfill material; for constructing the wall; and for all labor, equipment, tools, and incidentals necessary to complete the work.

All excavation within the limits of any undercut areas and excavation within the reinforcement zone will be paid for as Unclassified Excavation in accordance with Section 210.

All backfill material placed behind temporary retaining walls within the reinforcement zone, including quality control and acceptance sampling and testing, will be paid for as Select Granular Backfill in accordance with this Special Provision.

All backfill placed within the limits of any undercut areas performed for Temporary Retaining Walls, including quality control and acceptance sampling and testing, will be paid for as Select Granular Backfill unless alternative remediation is directed in the plans or by the Engineer.

The Contractor shall comply with applicable Federal, State, and local laws governing safety in accordance with Subsection 107.01(b) in any and all excavation and/or shoring operations. Any additional excavation and replacement backfill outside the reinforcement zone or outside the limits and not directly over any undercut areas will not be paid for directly but will be considered subsidiary to the unit price bid per square foot for Temporary Retaining Walls.

Payment will be made under:

Pay Item	**Pay Unit**
Temporary Retaining Wall	Square Foot
Select Granular Backfill	Cubic Yard

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

DRILLED SHAFT FOUNDATIONS FOR STEEL SIGN STRUCTURES

Description. This work includes the furnishing of all materials and the construction of foundations consisting of reinforced concrete shafts placed within drilled excavations. Slurry may be required to maintain stability of the borehole while advancing the excavation to the final depth. The foundations shall be constructed in accordance with the details and governing dimensions shown on the plans, the Standard Specifications, this special provision, and as directed by the Engineer.

Construction Experience. The drilled shafts on this project shall be constructed by a contractor or specialty subcontractor experienced with drilled shaft construction and if necessary, with the use of a slurry displacement method. The Contractor shall submit a project reference list to the Engineer for approval verifying the successful completion by the Contractor or specialty subcontractor of at least three separate foundation projects with shafts of diameters and depths similar to or larger than those shown in the plans, and ground conditions similar to those identified in the Contract (when provided). A brief description of each listed project shall be provided along with the name and current phone number of the project owner or the owner's Contractor.

The Contractor shall submit a list identifying the on-site supervisors and drill rig operators potentially assigned to the project to the Engineer. The list shall contain a brief description of each individual's experience in shaft excavation operations and placement of assembled steel reinforcing bar cages and concrete in shafts. The individual experience lists shall be limited to a single page for each supervisor or operator.

1. On-site supervisors shall have a minimum of two (2) years experience in supervising construction of shaft foundations of similar size (diameter(s) and depth(s)) and scope to those shown in the plans, and similar geotechnical conditions to those described in any provided boring logs. Work experience shall be direct supervisory responsibility for the on-site shaft construction operations. Project management level positions indirectly supervising on-site shaft construction operations are not acceptable for this experience requirement.
2. Drill rig operator shall have a minimum of one (1) year experience in construction of shaft foundations.

The Engineer may suspend the shaft construction if the Contractor substitutes unapproved personnel. The Contractor shall be fully liable for the additional costs resulting from the suspension of work, and no adjustments in contract time resulting from the suspension of work will be allowed.

DRILLED SHAFT FOUNDATIONS FOR STEEL SIGN STRUCTURES

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; and the specialty subcontractor, including the listed onsite supervisor, shall attend. Attendance is mandatory. All other parties to be involved with the construction or testing of the drilled shaft foundations may be represented. The meeting will be conducted to clarify the requirements of the work, to coordinate the construction schedule and activities, and to identify the contractual relationships and the delineation of responsibilities amongst the parties involved.

Materials. (a) Concrete. All concrete shall be Class S with a minimum 28-day compressive strength of 3,500 psi and shall conform to Section 802 unless modified herein.

The slump of the drilled shaft concrete, at time of placement, shall be 7 inches ± 1 inch for concrete placed in the dry or 8 inches ± 1 inch for concrete placed underwater/under slurry. The maximum water cement ratio specified in Subsection 802.05 shall not be increased. The aggregate used shall meet the sieve requirements set by AASHTO M 43, number 7. Approved admixtures may be used to obtain desired workability, flow, and anti-segregation properties.

Trial Batch: Each concrete mix design to be used in the drilled shafts shall be submitted to the Engineer a minimum of 10 business days prior to preparing a trial batch. A trial batch for each concrete mix design shall be prepared using the specific materials submitted in the mix design, including any admixtures, that are intended for use on the job. Each submitted mix design shall meet the slump requirements at the time of placement and shall maintain a slump of 6 inches or greater for the anticipated placement time stated in the Contractor's Drilled Shaft Work Plan plus one hour. The Contractor shall prepare a plant batch of at least 3 cubic yards or one-third the rated capacity of the mixer, whichever is greater. The trial batch, including all sampling and testing, shall be accomplished by the Contractor under the observation of the Engineer. The Contractor and Engineer shall sample and test the trial batch for compliance with the specifications for slump and compressive strength. Additional sampling and testing of the trial batch for slump loss shall be according to the following procedure:

1. The proposed mix shall be prepared for the slump loss test at a temperature consistent with ambient and concrete temperatures expected during actual concrete placement.
2. After initial mixing of 70 to 100 revolutions in accordance with Subsection 802.08, the slump, concrete temperature, and ambient temperature shall be determined. The slump shall be within the required specifications. The test start time is initiated when batch water is introduced to the cement of the mixture (the normal batch time that will be recorded on each concrete delivery ticket).
3. The mix shall remain in the mixer truck, which shall spin at minimum speed for the anticipated or actual time it will take for the mixer truck to travel to the job site. After this time period the mix will again be tested for slump, concrete temperature, and ambient temperature. If a higher slump is desired based on the results of this test, water may be added in accordance with Subsection 802.08, provided that the maximum water to cement ratio and/or the slump does not exceed the limits established by the specifications. The time and amount of water added shall be recorded on the batch ticket.

DRILLED SHAFT FOUNDATIONS FOR STEEL SIGN STRUCTURES

4. Once the desired slump is obtained, a one cubic yard sample of the mixture shall then be deposited into a plastic lined form measuring 3' x 3' x 3' in interior dimensions. A plastic-lined hole in the ground of approximately the same dimensions may be used. The surface of the concrete mixture shall be covered with plastic to prevent evaporation. The form shall not be exposed to direct sunlight for the entire duration of the slump loss test.
5. Using the concrete mixture in the form, tests shall be performed for slump, concrete temperature, and ambient temperature at intervals of 30 minutes until the slump is 6 inches or less, or for the anticipated placement time of the shaft plus one hour. In no case shall slump tests be performed for less than 4 hours. The top 6 inches of the concrete shall be thoroughly mixed using a scoop or shovel immediately prior to each set of tests. Plastic shall remain in place to cover the mixture between test intervals.

A record of the results of all tests performed, including the time of each test, along with a copy of the mix design and a copy of the batch ticket shall be submitted to the Engineer for review and approval.

(b) Reinforcing Steel. Reinforcing steel shall be Grade 60 conforming to the requirements of Section 804.

(c) Casing. Temporary casing shall conform to ASTM A252, Grade 2 or Grade 3. Permanent casing shall conform to ASTM A252, Grade 2 or Grade 3. The walls and interior surfaces of the casings shall be carefully washed and cleaned of all sand, gravel, bonded concrete or foreign materials before use.

All casing shall be steel, watertight and of ample strength to withstand handling and/or driving stresses and the pressure of both concrete and the surrounding earth materials. All casing shall be selected by the Contractor to control dimensions and alignment of excavations within tolerances and to execute all other construction operations.

(d) Slurry. Slurry, if required to maintain the stability of the borehole while advancing the excavation, shall be a mineral or polymer slurry product developed for concrete shaft construction using a slurry displacement method. The Contractor shall provide the Engineer with a copy of the manufacturer's specifications including suitability for site conditions and the parameters for the tests required in this Special Provision for the slurry intended for use. The approval to use this slurry shall be made by the Engineer.

Slurry operations shall be performed by personnel under the supervision of the manufacturer's representative or experienced personnel that are certified by the manufacturer's representative.

Construction. (a) Work Plan. The Contractor shall submit to the Engineer, for information and record purposes, a Work Plan for each shaft of similar type and setting at least 30 days prior to beginning construction of the drilled shafts. Where drilled shafts are to be constructed at multiple sites, a separate Work Plan shall be submitted for each site. The Work Plan shall include at a minimum:

DRILLED SHAFT FOUNDATIONS FOR STEEL SIGN STRUCTURES

1. A thorough and complete description of the proposed drilling equipment including cranes, drills, augers, tremies, concrete pumps, slurry pumps, de-sanding equipment, casings, etc.
2. The method of drilling and achieving shaft alignment tolerances and removing obstructions.
3. The method of installation for any permanent casings and the method of installation and removal for any temporary casings. Provisions shall be made for rigidly supporting the casings at locations where the soil that overlies rock is thin or absent or the casing extends above the ground line. The extension of permanent casing into competent rock beyond the depth required to maintain seal is not an acceptable method of rigid support.
4. Detailed procedures for mixing, using, maintaining, and disposing of slurry shall be provided. A detailed mix design (including all additives and their specific purpose in the slurry mix) and a discussion of its suitability to the anticipated subsurface conditions shall be provided. A detailed plan for quality control of the selected slurry, including tests to be performed, test methods to be used, and minimum and/or maximum property requirements, which must be met to ensure that the slurry functions as intended in accordance with the manufacturer's recommendations, shall be provided.
5. Details of methods to clean and inspect the shaft excavation including the bottom of the shaft.
6. The method of supporting and centralizing the reinforcing steel.
7. Details of concrete placement for each shaft, including proposed operation procedures for pumping methods, the anticipated time required for concrete placement in each shaft, and a sample inspection form to be used for the concreting curve showing depth versus volume over the length of the shaft.
8. The sequence of drilling and time schedule for completion of each shaft including any non-destructive testing required by the plans or special provisions.
9. Preventative measures for working around any structures, railroad tracks, and utilities in the immediate vicinity.
10. The location of any work roads, detours, and traffic control devices.
11. A pollution prevention plan that shows the method of controlling the discharge of any pollutants including any water that may be used as a drilling fluid. The Contractor's pollution prevention plan will become part of the Department's Stormwater Pollution Prevention Plan. The Contractor shall ensure compliance with Section 110 of the Standard Specifications.

The drilled shafts shall be constructed in accordance with the Work Plan and no deviation shall be allowed without the written permission of the Engineer. Any change in the Work Plan shall be submitted to the Engineer at least three (3) business days before any work is begun. Acceptance of the Work Plan shall not relieve the Contractor of any other requirements in the plans and specifications.

(b) Protection of Existing Structures. The Contractor shall control his operations to prevent damage to any existing structures, utilities, and railroad tracks. Preventative measures

shall include, but are not limited to, selecting construction methods and procedures that will prevent caving of the shaft excavation and monitoring and controlling the vibrations from construction activities such as the driving of casing or sheeting, or drilling of the shaft. Blasting will not be permitted.

(c) Construction Tolerances. The following construction tolerances apply to drilled shafts unless otherwise shown on the plans:

1. The center of the drilled shaft shall be within the integer value of d/15, where d is the shaft diameter in inches, of plan position in the horizontal plane at the plan elevation for the top of the shaft. In no instance shall the center tolerance be taken less than three (3) inches or more than six (6) inches.
2. The vertical alignment of a vertical shaft excavation shall not vary from the plan alignment by more than 1/4 inch per foot of depth.
3. After all the concrete in a shaft is placed, the top of the reinforcing steel cage shall be no more than four (4) inches above and no more than two (2) inches below plan position.
4. The top elevation of the shaft shall have a tolerance of plus one (1) inch or minus one (1) inch from the plan top of shaft elevation.
5. Excavation equipment and methods shall be designed so that the completed shaft excavation will have a near planar bottom. The cutting edges of the excavation equipment shall be normal to the vertical axis of the equipment within a tolerance of ± 3/8 inch per foot of diameter.
6. The finished diameter of the shaft shall be no less than the specified diameter along the entire length of the drilled shaft.

Drilled shaft excavations and completed shafts not constructed within the required tolerances are unacceptable. The Contractor shall be responsible for correcting all unacceptable shaft excavations and completed shafts to the satisfaction of the Engineer. Materials and work necessary, including engineering analysis and redesign by a Professional Engineer licensed in the State of Arkansas, to complete corrections for out of tolerance drilled shaft excavations shall be furnished without either cost to the Department or an extension of the completion date of the project.

(d) Casings. (1) Temporary Casing. When shown in the plans or as approved by the Engineer, temporary casings shall be used to prevent caving of the excavated shaft, to exclude ground water, or to create a positive seal into impervious material so that no piping of water or other materials occurs into or from the shaft excavation. The Contractor shall remove temporary casing before completion of concreting the drilled shaft. Predrilling with slurry and/or over-reaming to beyond the outside diameter of the casing may be required to install the casing.

When temporary casings are used in conjunction with permanent casings as shown in the plans or approved by the Engineer, the Contractor shall maintain both alignment of the temporary casing with permanent casing and a positive, watertight seal between the two casings during excavation and concreting operations.

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Before the temporary casing is withdrawn, the level of fresh concrete in the casing shall be a minimum of 5 feet above the hydrostatic water level in the soil or the level of the drilling fluid in the annular space behind the casing, whichever is higher. As the temporary casing is withdrawn, care shall be exercised to maintain an adequate level of concrete in the casing so that fluid trapped behind the casing is displaced upward and discharged at the ground surface without contaminating or displacing the shaft concrete. Insofar as possible, casing extraction shall be done at a slow uniform rate by application of a steady vertical upward pull in the direction of the axis of the shaft. To facilitate extraction, tapping on the casing, exertion of temporary downward pressure, and slight rotation will be permitted provided care is taken to avoid harmful impacts or disturbances to the fresh concrete. Vibration or rodding may not be used to break the casing loose for extraction.

Temporary casings which become bound or fouled during shaft construction and cannot be practically removed shall constitute a defect in the drilled shaft. The Contractor shall be responsible to improve such defective shafts to the satisfaction of the Engineer. Such improvements may consist of, but are not limited to: removal of the shaft concrete and extending the shaft deeper to compensate for loss of frictional capacity in the cased zone, providing saddle shafts to compensate for capacity loss or providing a replacement shaft. All corrective measures, including redesign of the structure caused by the defective shaft, shall be done to the satisfaction of the Engineer by the Contractor without either compensation or an extension of time. In addition, no compensation will be made for the temporary casing left in place.

(2) Permanent Casing. Permanent casing shall not be used unless otherwise approved by the Engineer. When approved, the casing shall be continuous between top and bottom elevationsof the approved casing length.. The outside diameter of the permanent casing shall be sufficient to produce a finished drilled shaft with a diameter no less than the specified diameter along the entire length of the shaft. The inside diameter of permanent casing shall not be greater than the specified diameter of the shaft plus 12 inches unless otherwise approved by the Engineer.. All casings shall be watertight and of ample strength to withstand handling and/or driving stresses and the pressure of both concrete and the surrounding earth materials. All casings used shall be selected by the Contractor to control the dimensions and alignment of excavations within tolerances and to execute all other construction operations. When permanent casing is approved for use, the drilled shaft length shall be adjusted to maintain the shaft embedment specified on the plans beyond the limits of the permanent casing.

(3) Temporary Surface Casing. Temporary oversized surface casing may also be required for no more than 10 feet below top of shaft to prevent sloughing of the top of the shaft excavation. Temporary surface casings shall not be removed until after a minimum of 72 hours has elapsed since concrete placement and shall be done in a manner to not cause any damage to the finished drilled shaft. Concrete shall not be cast directly against temporary surface casing.

(e) Excavations. The Contractor shall perform the excavation required for the shafts through whatever materials encountered, to the dimensions and elevations shown on the plans or required by the site conditions. The Contractor’s methods and equipment shall be suitable for the intended purpose and materials encountered. During excavation of the shafts, the Contractor shall make frequent checks on the plumbness, alignment, and dimensions of the shaft to maintain required tolerances.

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Bottom of shafts shall not be founded at a depth less than that shown on the plans without the approval of the Engineer. The depth that is to be drilled shall be considered an approximation and the Engineer may order, in writing, such changes in depth as may be necessary to secure a satisfactory foundation.

The excavation may require the use of slurry displacement. If a slurry is used, such use shall conform to subsection (f) below. Water may be used as a drilling fluid and to prevent a hydrostatic head from occurring. Drilled shaft excavation shall begin only if the Contractor can complete the excavation, perform foundation inspection and any required testing, and place the reinforcement and concrete as a continuous operation. If the center-to-center spacing is less than 3 shaft diameters, no two adjacent shafts shall be excavated at the same time and shafts shall not be constructed within 24 hours of the completion of an adjacent shaft. If the excavation will be subjected to vibrations from nearby activities that may cause caving, casing shall be advanced as drilling proceeds to prevent caving.

Material excavated from shafts and not used in the backfill around the compacted foundation shall be disposed of in a manner approved by the Engineer and shall not be placed in a waterway or otherwise impair the efficiency or appearance of the structure or other parts of the work. Any excavation for the shaft beyond the lines required by the plans shall be filled with material approved by the Engineer and at the Contractor's expense.

When drilled shafts are to be installed in conjunction with embankment placement, the Contractor shall construct drilled shafts after the placement of fills unless otherwise approved by the Engineer.

When drilled shafts are to be installed in conjunction with a footing or cap, excavation to the footing or cap elevation shall be completed before shaft construction begins unless otherwise noted in the plans or approved by the Engineer. Prior to the footing or cap pour, the Contractor shall repair any disturbance to the footing or cap area caused by shaft installation.

No open excavation shall be left unattended. During non-working hours, excavations shall be protected by the use of solid, safe covers that are firmly fastened in place.

The Contractor shall provide suitable access, lighting, and equipment for checking the dimensions and alignment of each permanent shaft excavation and for inspecting the excavation. Any mechanical equipment used within the excavation shall be operated by air or electricity. The use of gasoline driven engines or any device that produces toxic fumes or uses atmospheric oxygen, within the excavation for any purpose will not be permitted. All lighting shall be electric and precautions shall be taken in regard to potential short circuits of electric current within ground water. The Contractor shall not allow workers to enter the shaft excavation for any reason, unless both a suitable casing has been installed and adequate safety equipment and procedures have been provided to the workers entering the excavation.

The Contractor shall check the dimensions and alignment of the shaft excavation under the direction of the Engineer. Final shaft depths shall be measured with suitable weighted tape or other approved methods after final cleaning of the excavation.

DRILLED SHAFT FOUNDATIONS FOR STEEL SIGN STRUCTURES

No concrete shall be placed until the Engineer approves the condition of the excavation. Prior to placing concrete, the shaft excavation shall be cleaned so that a minimum of 50 percent of the base area will have less than ½ inch of sediment and at no place more than 1 ½ inch. The Contractor shall be responsible for showing that the excessive loose material has been removed from the excavation. Inspection of the bottom of the excavation shall be by camera or other suitable means approved by the Engineer. When the shaft inspection is by camera it shall be capable of viewing the bottom of the excavation at a resolution suitable for determining the bottom condition whether wet or dry construction methods are used. All expenses for inspection shall be included in the price bid for the items of "Steel Overhead Sign Structure (__)", "Steel Cantilever Sign Structure (__)", and "Steel Tee Mount Sign Structure (__)".

If the elevation of the top of shaft is below ground level at the time of concrete placement, an oversized temporary surface casing from ground elevation to a point below the top of the shaft will be required to control caving of any substance into freshly placed concrete and to facilitate construction. The oversized surface casing shall be removed and backfill placed in accordance with Subsection 801.08.

(f) Slurry. If required, the approved slurry shall have sufficient viscosity and gel characteristics to transport excavated material out of the shaft. The specific gravity of the slurry shall be sufficient to maintain the stability of the shaft. The level of the slurry shall be maintained at the height sufficient to prevent caving of the hole. An acceptable range of values for the physical properties of the slurry is shown in Tables 1 or 2. Slurry Properties shall be adjusted for the site conditions as recommended by the manufacturer and approved by the Engineer.

The slurry shall be mixed thoroughly with clean fresh water according to the manufacturer's recommendations. Water and soil temperature and pH shall be within the slurry manufacturer's recommendations or requirements prior to mixing.

Sidewall over-reaming shall be required when the sidewall of the hole is determined by the Engineer to have softened due to excavation methods, swelled due to delays in concreting, or degraded due to slurry cake buildup. Over-reaming thickness shall be a minimum of ½ inch and a maximum of 3 inches. The thickness and elevation of sidewall over-reaming shall be as directed by the Engineer. All expenses for over-reaming shall be included in the price bid for the items of "Steel Overhead Sign Structure (__)", "Steel Cantilever Sign Structure (__)", and "Steel Tee Mount Sign Structure (__)".

Adequate slurry tanks will be required. No excavated slurry pits will be allowed without written permission of the Engineer. Recycling of the slurry is permitted provided the recycled slurry's properties satisfy the required range of values given in Tables 1 or 2.

Since cement contamination is very harmful to the slurry, the top four feet of slurry directly above the shaft concrete shall be disposed of and not reused. Certain types of soil may require cleaning of the recycled slurry.

(1) Tests. Tests to determine density, viscosity, pH, and sand content shall be performed on the slurry by the Contractor during the shaft excavation to establish a consistent working pattern.

DRILLED SHAFT FOUNDATIONS FOR STEEL SIGN STRUCTURES

The testing apparatus must be approved by the Engineer. The tests shall be performed when the slurry temperature is above 40° F.

A minimum of four sets of tests shall be made during the first eight hours of slurry use. When the results show a consistent behavior, the testing frequency may be decreased to one set every four hours of slurry use. The slurry shall be tested and brought into conformance with specification requirements immediately prior to concreting the shaft.

For shafts less than 50 feet in depth, tests shall be conducted on slurry samples taken from 1 foot above the base of the shaft and at midpoint of the shaft. For shafts greater than 50 feet in depth, tests shall be conducted on the slurry samples taken from 1 foot above the base of the shaft and the third points of the shaft.

When any slurry samples are found to be unacceptable, the Contractor shall take whatever action is necessary to bring the slurry into conformance with specification requirements, before advancing the shaft excavation. An acceptable range of values for the physical properties of the slurry is shown in Tables 1 or 2. Slurry Properties shall be adjusted for the site conditions as recommended by the manufacturer and approved by the Engineer.

(2) Disposal. Slurry and material removed during shaft excavation shall not be allowed to enter a waterbody or wetland and will be handled in accordance with Supplemental Specification 110-1. Waste slurry, excavated material, and other material removed during shaft excavation utilizing slurry shall be disposed of at a licensed landfill which will accept industrial solid waste or by other means approved by the Arkansas Department of Environmental Quality (ADEQ). The Contractor shall be responsible for obtaining and complying with any permits required by ADEQ for disposal of the waste material.

Table 1 – Mineral Slurry Properties

ITEM TO BE MEASURED	**RANGE OF RESULTS AT 60° F (20°C)**	**TEST METHODS**
Density (pcf)	64-75 lb/ft^3 (fresh water applications)	(Mud Balance) ASTM D4380
Marsh Funnel Viscosity, (seconds/qt.)	28 to 45 (See Table 2 for application)	API RP13B-1 Sect. 2 (Marsh Funnel & Cup)
Sand Content by volume, percent, before concreting	4% maximum	(Sand Screen Set ASTM D4381)
pH	8 to 11	ASTM D4972

DRILLED SHAFT FOUNDATIONS FOR STEEL SIGN STRUCTURES

Table 2 – Polymer Slurry Properties

ITEM TO BE MEASURED	RANGE OF RESULTS AT 60° F (20°C)	TEST METHODS
Density (pcf)	64 lb/ft^3 Maximum (fresh water applications)	(Mud Balance) ASTM D4380
Marsh Funnel Viscosity, (seconds/qt.)	40 to 90 (or as approved by the Engineer)	API RP13B-1 Sect. 2 (Marsh Funnel & Cup)
Sand Content by volume, percent, before concreting	1% maximum	(Sand Screen Set ASTM D4381)
pH	8 to 10	ASTM D4972

(g) Reinforcing Steel. The reinforcing steel cage shall be completely assembled and shall be placed as a unit immediately after the shaft excavation is inspected and accepted, and prior to concrete placement. The cage will consist of the reinforcing shown in the plans, cage stiffener bars as required, spacing devices, and any other appurtenances required to maintain alignment, shape, and clearances. Any internal stiffeners shall be removed as the cage is lowered into the excavation.

The minimum clearance between the edge of the drilled shaft and the vertical reinforcing steel and the minimum length of steel required for lap with the column steel shall be as shown in the plans.

The Contractor shall be responsible for the proper bracing of the reinforcing cage. This bracing shall be sufficient to permit assembly above ground and placing in the shaft as a unit without inducing deforming, twisting, or bending stress. Welding of reinforcing bars will not be permitted.

Concrete spacer blocks shall not be used on the reinforcing cages. Epoxy coated metal "chair" type spacers, epoxy coated bent pieces of steel bars, or high density plastic alignment systems shall be used to ensure concentric spacing of the cage inside the shaft. Spacers shall be placed at least at quarter points around the circumference of the cage, and at a longitudinal spacing not exceeding 20 feet or 2.5 times the shaft diameter, whichever is less. The spacer sizes shall be varied as necessary along the length of the shaft to maintain a concentric spacing within the cased and uncased portions of the shaft.

The cage shall be supported from the top by some positive method to minimize uplift or downward slump during concrete placement and/or extraction of the casing. A minimum of one-half of the vertical bars shall be supported from the top. The support shall be concentric with the cage to prevent racking and distortion of the steel. Setting the cage on the socket bottom without support will not be permitted.

DRILLED SHAFT FOUNDATIONS FOR STEEL SIGN STRUCTURES

The elevation of the top of the steel cage shall be carefully checked before and after the concrete is placed. Displacement of the steel beyond the specified tolerances will be cause for rejection.

(g) Concrete. The work shall be performed in accordance with the provisions of Section 802 and in conformance with the requirements herein.

The maximum sublot size for acceptance sampling and testing of drilled shaft concrete by the Contractor shall be 100 cubic yards or one drilled shaft.

At the time concrete is placed, the excavation shall be free from accumulated seepage water (less than 3 inches above bottom of shaft and 12 inches per hour inflow) unless an underwater pour is authorized by the Engineer. Concrete shall be placed as soon as possible after completion of the excavation and the inspection and setting of the reinforcing cage. During concrete placement, the Contractor shall limit the difference in elevation of the concrete inside and outside the steel reinforcing cage to one (1) foot maximum. Concrete placement operations shall proceed in a continuous operation from the bottom of the shaft to the top of the shaft, unless a shaft construction joint below the top of the shaft is specified in the plans. After the concrete level has reached the top of the shaft, it will be forced to overflow until only fresh uncontaminated concrete is left in the shaft, unless a shaft construction joint below the top of the shaft is specified in the plans. The concrete waste shall be disposed of in accordance with the Storm Water Pollution Prevention Plan requirements. Slurry contaminated wastes shall be disposed of as described in Section (f).

If a shaft construction joint below the top of the shaft is specified in the plans, concrete shall be placed in a continuous operation from the bottom of the shaft to 2'-6" above the shaft construction joint or as directed by the Engineer, but in no case less than 1'-0". Care shall be exercised to control and minimize the depth of scum, laitance, loose grave, and sediment above the shaft construction joint prior to concrete set. After the shaft concrete has cured for a minimum of 72 hours and after conducting nondestructive testing, the Contractor shall remove all remaining scum, laitance, loose gravel, and sediment down to sound concrete, or to the depth of the shaft construction joint, whichever is lower. After approval of the shaft, the column reinforcing shall be set and the remaining portion of the shaft concrete shall be poured in the dry.

Concrete waste shall not enter the waterway as required by any applicable Section 404 Permits. Exposed portions of each drilled shaft shall be cured and any construction joint area shall be treated as prescribed in Section 802 and roughened to an amplitude of ¼ inch.

Placement of drilled shaft concrete underwater shall be done only with permission of the Engineer in strict conformance with the procedures outlined below for an underwater pour.

1. Concrete Placed in the Dry. All drilled shaft concrete placed in the dry shall be placed through a tremie or by pumping to prevent segregation of materials. The tremie shall have sufficient length to discharge concrete at the shaft base and shall consist of a rigid tube with a diameter of no more than 14 inches nor less than 10 inches and be fitted with a hopper at the top. The tremie shall not contain aluminum parts that may come in contact with the concrete. The inside and outside surfaces of the tremie shall be clean

and smooth to permit flow of concrete and unimpeded withdrawal. It shall be constructed and supported so that it can be moved horizontally to cover the work area and moved vertically to control the concrete flow as the level of the concrete in the shaft is raised. The bottom of the tremie or pump pipe shall be at the bottom of the shaft at the beginning of concrete placement, but will not be required to remain at the bottom of the shaft during the entire pour. The bottom of the tremie must remain below the top of the concrete at all times.

The concrete pump line shall have a minimum diameter of 4 inches with the portion of the line inside the excavation meeting the requirements above, but only that portion of the pump line in contact with the concrete will be required to be rigid. All pump equipment shall be clean and in good operating condition.

2. Concrete Placed Underwater. If it becomes apparent that pumping and other dewatering methods are not adequate to dry the holes, the Engineer may authorize underwater placement of concrete. In this case, the water in the hole shall be permitted to seek its natural hydrostatic head to prevent any possibility of pressure washing of the concrete being placed.

   The tremie and pump line requirements shall be the same as specified above for concrete placed in the dry except tremie and pump lines shall be watertight and constructed so that the discharge end can be sealed closed at the start of work to prevent water from entering the tremie or pump line before the tremie or pump line is filled with concrete. If a plug is used to separate the concrete from the fluid in the hole, the plug shall be removed from the excavation after placement has begun. Concrete placement shall be done in one continuous operation. The discharge orifice shall be at the bottom of the shaft at the beginning of the concrete placement and shall remain at least 5 feet below the top surface of the fluid concrete. The Contractor shall provide equipment and personnel to sound the top of the concrete in the presence of the Engineer in order to verify the location of the concrete surface and the discharge orifice at all times. After concrete placement has started the concrete level in the tremie shall be maintained above the water level in the bore hole to prevent water intrusion into the shaft concrete. When lifting the pump line during concreting, the Contractor shall temporarily reduce line pressure until the orifice has been repositioned at a higher elevation in the excavation. If at any time during the concrete pour the orifice is removed from the fluid concrete and discharges concrete above the rising concrete surface, the entire drilled shaft will be considered defective. In such case, the Contractor shall remove the reinforcing cage and concrete, complete any necessary sidewall cleaning or overreaming as directed by the Engineer, and repour the shaft.

3. Concrete Placed Under Slurry. All drilled shaft concrete placed using the slurry displacement method shall be placed through a suitable rigid tremie or by pumping through a suitable rigid tube as specified above for concrete placed underwater. The placement procedures shall also be as specified above for concrete placed underwater. The slurry shall be tested and brought into conformance with specification requirements prior to commencing concrete placement. In the presence of the Engineer, the

DRILLED SHAFT FOUNDATIONS FOR STEEL SIGN STRUCTURES

Contractor shall provide equipment and personnel to sound the top of the concrete in order to verify the location of the concrete surface and the discharge orifice at all times.

(h) Drilled Shaft Log. A record of each shaft construction shall be furnished by the Contractor to the Engineer prior to acceptance of the shaft. This Drilled Shaft Log shall include: information about the drilling procedures and equipment; a log of the excavated material; the as constructed elevations and lengths of all vertical elements of the shaft including reinforcing and casings; depth of final excavation, founding material and bottom condition; concrete volume and a concreting curve showing depth versus volume over the length of the shaft, volume used in overflow and purging; and the date and time of pertinent operations used in constructing the drilled shaft from beginning of excavation to completion of concrete placement. If a shaft construction joint below the top of the shaft is specified in the plans, the Drilled Shaft Log shall include the depth of concrete poured above the shaft construction joint, the depth of concrete removed prior to concrete set, and the method(s) used to control and minimize the depth of scum, laitance, loose gravel, and sediment above the shaft construction joint. During concrete operations, except for those above a shaft construction joint, the Contractor shall dedicate an inspector to the function of monitoring concreting operations and recording these portions of the Drilled Shaft Log. Failure to meet this requirement will be grounds for additional integrity investigation of the shaft at the Contractor's expense.

Basis of Payment. All costs incurred in complying with this Special Provision, including all costs for making and inspecting shaft excavations; for drilling test borings and furnishing logs; for furnishing, placing, and removing temporary casing; for furnishing, mixing, placing, testing and disposal of slurry, if required; for furnishing and placing all concrete and reinforcing steel; for the removal of scum, laitance, loose gravel, and sediment down to sound concrete when preparing a shaft construction joint; for performing mix designs; for preparing trial batches; for keeping the Drilled Shaft Log; for providing and placing necessary materials for nondestructive testing as required by those special provisions; for quality control and acceptance sampling and testing; for all backfilling; and for furnishing all tools, labor, equipment and incidentals necessary to complete the work, will not be measured or paid for separately, but shall be considered subsidiary to the items of "Steel Overhead Sign Structure (__)", "Steel Cantilever Sign Structure (__)", and "Steel Tee Mount Sign Structure (__)".

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

DRILLED SHAFT FOUNDATIONS

Description. This work includes the furnishing of all materials and the construction of foundations consisting of reinforced concrete shafts placed within drilled excavations. Such foundations shall be constructed in accordance with the details and governing dimensions shown on the plans, the Standard Specifications, this special provision, and as directed by the Engineer.

Construction Experience. The drilled shafts on this project shall be constructed by a contractor or specialty subcontractor experienced with drilled shaft construction. The Contractor shall submit a project reference list to the Engineer for approval verifying the successful completion by the Contractor or specialty subcontractor of at least three separate foundation projects with shafts of diameters and depths similar to or larger than those shown in the plans, and ground conditions similar to those identified in the Contract. A brief description of each listed project shall be provided along with the name and current phone number of the project owner or the owner's Contractor.

The Contractor shall submit a list identifying the on-site supervisors and drill rig operators potentially assigned to the project to the Engineer. The list shall contain a brief description of each individual's experience in shaft excavation operations and placement of assembled steel reinforcing bar cages and concrete in shafts. The individual experience lists shall be limited to a single page for each supervisor or operator.

1. On-site supervisors shall have a minimum of two (2) years experience in supervising construction of shaft foundations of similar size (diameter(s) and depth(s)) and scope to those shown in the plans, and similar geotechnical conditions to those described in the boring logs. Work experience shall be direct supervisory responsibility for the on-site shaft construction operations. Project management level positions indirectly supervising on-site shaft construction operations are not acceptable for this experience requirement.
2. Drill rig operator shall have a minimum of three (3) years experience in construction of shaft foundations.

The Engineer may suspend the shaft construction if the Contractor substitutes unapproved personnel. The Contractor shall be fully liable for the additional costs resulting from the suspension of work, and no adjustments in contract time resulting from the suspension of work will be allowed.

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 the listed onsite supervisor, shall attend. Attendance is mandatory. All other parties to be involved with the construction or testing of the drilled shaft foundations may be represented. The meeting will be conducted to clarify the requirements of the work, to coordinate the construction schedule and activities, and to identify the contractual relationships and the delineation of responsibilities amongst the parties involved.

DRILLED SHAFT FOUNDATIONS

Materials. (a) Concrete. All concrete shall be Class S with a minimum 28-day compressive strength of 3,500 psi for all bents and shall conform to Section 802 unless modified herein.

The slump of the drilled shaft concrete, at time of placement, shall be 9 inches ± 1 inch for concrete placed underwater. The maximum water cement ratio specified in Subsection 802.05 shall not be increased. The aggregate used shall meet the sieve requirements set by AASHTO M 43, number 7. Approved admixtures may be used to obtain desired workability, flow, retard set, and anti-segregation properties.

Trial Batch: Each concrete mix design to be used in the drilled shafts shall be submitted to the Engineer a minimum of 10 business days prior to preparing a trial batch. A trial batch for each concrete mix design shall be prepared using the specific materials submitted in the mix design, including any admixtures, that are intended for use on the job. Each submitted mix design shall meet the slump requirements at the time of placement and shall maintain a slump of 6 inches or greater for the anticipated placement time stated in the Contractor's Drilled Shaft Work Plan plus two hours. The Contractor shall prepare a plant batch of at least 3 cubic yards or one-third the rated capacity of the mixer, whichever is greater. The trial batch, including all sampling and testing, shall be accomplished by the Contractor under the observation of the Engineer. The Contractor and Engineer shall sample and test the trial batch for compliance with the specifications for slump and compressive strength. Additional sampling and testing of the trial batch for slump loss shall be according to the following procedure:

1. The proposed mix shall be prepared for the slump loss test at a temperature consistent with ambient and concrete temperatures expected during actual concrete placement.
2. After initial mixing of 70 to 100 revolutions in accordance with Subsection 802.08, the slump, concrete temperature, and ambient temperature shall be determined. The slump shall be within the required specifications. The test start time is initiated when batch water is introduced to the cement of the mixture (the normal batch time that will be recorded on each concrete delivery ticket).
3. The mix shall remain in the mixer truck, which shall spin at minimum speed for the anticipated or actual time it will take for the mixer truck to travel to the job site. After this time period the mix will again be tested for slump, concrete temperature, and ambient temperature. If a higher slump is desired based on the results of this test, water may be added in accordance with Subsection 802.08, provided that the maximum water to cement ratio and/or the slump does not exceed the limits established by the specifications. The time and amount of water added shall be recorded on the batch ticket.
4. Once the desired slump is obtained, a one cubic yard sample of the mixture shall then be deposited into a plastic lined form measuring 3' x 3' x 3' in interior dimensions. A plastic-lined hole in the ground of approximately the same dimensions may be used. The surface of the concrete mixture shall be covered with plastic to prevent evaporation. The form shall not be exposed to direct sunlight for the entire duration of the slump loss test.
5. Using the concrete mixture in the form, tests shall be performed for slump, concrete temperature, and ambient temperature at intervals of 30 minutes until the slump is 6 inches or less, or for the anticipated placement time of the shaft plus two hours. In no case shall slump tests be performed for less than 4 hours. The top 6 inches of the concrete

DRILLED SHAFT FOUNDATIONS

shall be thoroughly mixed using a scoop or shovel immediately prior to each set of tests. Plastic shall remain in place to cover the mixture between test intervals.

A record of the results of all tests performed, including the time of each test, along with a copy of the mix design and a copy of the batch ticket shall be submitted to the Engineer for review and approval.

(b) Reinforcing Steel. Reinforcing steel shall be Grade 60 conforming to the requirements of Section 804.

(c) Casing. Temporary casing shall conform to ASTM A252, Grade 2 or Grade 3. Permanent casing shall conform to ASTM A252, Grade 2 or Grade 3. The walls and interior surfaces of the casings shall be carefully washed and cleaned of all sand, gravel, bonded concrete or foreign materials before use.

All casing shall be smooth-walled steel, watertight and of ample strength to withstand handling and/or driving stresses and the pressure of both concrete and the surrounding earth materials. All casing shall be selected by the Contractor to control dimensions and alignment of excavations within tolerances and to execute all other construction operations.

(d) Slurry. Slurry shall consist of a stable colloidal suspension of various pulverized solids (mineral, commercial bentonite) or a drilling polymer thoroughly mixed with clean water, or water slurry with the properties given in Table 1. Slurry temperature shall be at least 40 degrees F when tested. Bentonite shall meet the requirements of API 13A.

Table 1

Item to be Measured	**Acceptable Range of Results**	**Test Method**
1. Density (lbs per cubic foot) a) mineral slurries b) polymer slurries c) water slurries	a) 64.3 to 72 b) 64 max. c) 64 max.	API 13B-1, 4th Ed., Section 1 (Mud balance), ASTM D4280
2. Viscosity (seconds per quart) a) mineral slurries b) polymer slurries	a) 28 to 50 b) 40 to 90 or as recommended by manufacturer	API 13B-1, 4th Ed., Section 2.2 (Marsh funnel & cup)
3. Sand Content (percent by volume immediately prior to performing final cleanout inspection) a) mineral slurries b) polymer slurries c) water slurries	a) not allowed in rock socket b) 1% max. c) 1% max.	API 13B-1, 4th Ed., Section 5 (Sand screen)

DRILLED SHAFT FOUNDATIONS

4. pH of polymer and mineral slurries, during excavation	8 to 11.5	API 13B-1, 4th Ed., (Paper test strips, glass-electrode, or pH meter)

Construction. (a) Work Plan. The Contractor shall submit to the Engineer, for information and record purposes, a Work Plan for each shaft of similar type and setting at least 30 days prior to beginning construction of the drilled shafts. Where drilled shafts are to be constructed at multiple sites, a separate Work Plan shall be submitted for each site. The Work Plan shall include at a minimum:

1. A thorough and complete description of the proposed drilling equipment including cranes, drills, augers, tremies, concrete pumps, casings, etc.
2. The method of drilling and achieving shaft alignment tolerances and removing obstructions.
3. Types of drilling fluid to be used to drill the shaft and rock socket and maintain shaft hole integrity as well as names of manufacturer's representative and field testers, fluid material properties, installation methods, mixing, sampling and testing, desanding method, and disposal procedures.
4. The method of installation for any permanent casings and the method of installation and removal for any temporary casings. Provisions shall be made for rigidly supporting the casings at locations where the soil that overlies rock is thin or absent or the casing extends above the ground line. The extension of permanent casing into competent rock beyond the depth required to maintain seal is not an acceptable method of rigid support.
5. Details of methods and equipment to clean and inspect the shaft excavation including the bottom of the shaft.
6. The method of supporting and centralizing the reinforcing steel.
7. Details of concrete placement for each shaft, including proposed operation procedures for pumping methods, the anticipated time required for concrete placement in each shaft, and a sample inspection form to be used for the concreting curve showing depth versus volume over the length of the shaft.
8. The sequence of drilling and time schedule for completion of each shaft including any non-destructive testing required by the plans or special provisions.
9. Preventative measures for working around any structures, railroad tracks, and utilities in the immediate vicinity.
10. The location of any work roads, detours, and traffic control devices.
11. A pollution prevention plan that shows the method of controlling the discharge of any pollutants including any water that may be used as a drilling fluid. The Contractor's pollution prevention plan will become part of the Department's Stormwater Pollution Prevention Plan. The Contractor shall ensure compliance with Section 110 of the Standard Specifications.

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12. Casing details, including calculations showing the ability of the casing to withstand anticipated hydrostatic and earth pressures, and stresses due to installation without undue deformation. These shall include methods for casing handling, splicing, straightening, and out-of-round correction. Calculations shall be signed and sealed by an Arkansas Licensed Professional Engineer.

The drilled shafts shall be constructed in accordance with the Work Plan and no deviation shall be allowed without the written permission of the Engineer. Any change in the Work Plan shall be submitted to the Engineer at least three (3) business days before any work is begun. Acceptance of the Work Plan shall not relieve the Contractor of any other requirements in the plans and specifications.

(b) Protection of Existing Structures. The Contractor shall control his operations to prevent damage to any existing structures, utilities, and railroad tracks. Preventative measures shall include, but are not limited to, selecting construction methods and procedures that will prevent caving of the shaft excavation and monitoring and controlling the vibrations from construction activities such as the driving of casing or sheeting, or drilling of the shaft. Blasting will not be permitted.

(c) Construction Tolerances. The following construction tolerances apply to drilled shafts unless otherwise shown on the plans:

1. The center of the drilled shaft shall be within the integer value of d/15, where d is the shaft diameter in inches, of plan position in the horizontal plane at the plan elevation for the top of the shaft. In no instance shall the center tolerance be taken more than three (3) inches.
2. The vertical alignment of a vertical shaft excavation shall not vary from the plan alignment by more than 1/4 inch per foot of depth.
3. After all the concrete in a shaft is placed, the top of the reinforcing steel cage shall be no more than four (4) inches above and no more than two (2) inches below plan position.
4. The top elevation of the shaft shall have a tolerance of plus one (1) inch or minus three (3) inches from the plan top of shaft elevation.
5. Excavation equipment and methods shall be designed so that the completed shaft excavation will have a near planar bottom. The cutting edges of the excavation equipment shall be normal to the vertical axis of the equipment within a tolerance of ± 3/8 inch per foot of diameter.
6. The finished diameter of the shaft shall be no less than the specified diameter along the entire length of the drilled shaft.

Drilled shaft excavations and completed shafts not constructed within the required tolerances are unacceptable. The Contractor shall be responsible for correcting all unacceptable shaft excavations and completed shafts to the satisfaction of the Engineer. Materials and work necessary, including engineering analysis and redesign by an Arkansas Licensed Professional Engineer, to complete corrections for out of tolerance drilled shaft excavations shall be furnished without either cost to the Department or an extension of the completion date of the project.

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(d) Permanent Casing. Permanent casing will be required on all shafts as shown in the plans. The casing shall be continuous between top and bottom elevations as shown in the plans and as approved by the Engineer. The inside diameter of the permanent casing shall be as shown in the plans. The use of oversized permanent casing will not be permitted. Lengths of permanent casing shown on the plans are for estimating quantities only; actual lengths are to be determined in the field. All casings shall be watertight and of ample strength to withstand handling and/or driving stresses and the pressure of both concrete and the surrounding earth materials. All casings used shall be selected by the Contractor to control the dimensions and alignment of excavations within tolerances and to execute all other construction operations.

(e) Temporary Surface Casing. Temporary oversized surface casing will be required on all shafts to prevent sloughing of the top of the shaft excavation, and contain the drilling fluid for excavating the shaft, control caving of any substance into freshly placed concrete, and to facilitate construction. The void between the temporary surface casings and permanent casings shall be backfilled as the temporary casing is removed with grout or flowable fill injected from the bottom of void displacing any drilling fluid to top of shaft. Temporary surface casing removed after the shaft concrete is placed shall not be removed until after a minimum of 72 hours has elapsed since concrete placement and shall be done in a manner to not cause any damage to the finished drilled shaft. Concrete shall not be cast directly against temporary surface casing or used to fill the void between temporary and permanent casings.

(f) Slurry. The Contractor shall use slurry as drilling fluid, which conforms to the material property requirements specified herein, to maintain a stable excavation during excavation and concrete placement operations. Mineral or Polymer slurry shall be used to stabilize uncased excavations above top of rock. Once permanent casing is seated into rock, any mineral slurry shall be replaced with polymer slurry or clear water. During the replacement process, the sidewalls of the permanent casing shall be cleaned by an approved method to remove any slurry cake buildup. Only polymer slurry or water shall be used to excavate the rock socket.

For polymer and mineral slurry, the manufacturer's representative, as identified to the Engineer in the drilled shaft Work Plan, shall provide technical assistance for the use of the slurry, be at the site prior to introduction of the slurry into a drilled hole, and remain at the site during the construction and completion of a minimum of one shaft to adjust the slurry mix to the specific site conditions. After the manufacturer’s representative is no longer present at the site, the Contractor’s employee trained in the use of the slurry, as identified to the Engineer in the drilled shaft Work Plan, shall be present at the site throughout the remainder of shaft slurry operations for this project to perform the duties specified above.

The Contractor shall clean, re-circulate, de-sand, or replace the slurry as needed in order to maintain the required slurry properties. Sand content shall be within limits specified herein, prior to final clean out inspection.

Mineral slurry and polymer slurry shall be mixed and thoroughly hydrated in slurry tanks. Direct mixing of slurry in the shaft is not permitted. The Contractor shall draw sample sets from the slurry tanks and test the samples for conformance with the appropriate specified material properties before beginning slurry placement in the drilled hole. Slurry shall conform to the

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quality control plan included in the drilled shaft Work Plan approved by the Engineer. A sample set shall be composed of samples taken at mid-height and within 2.0 ft. of the bottom of the storage area.

The Contractor shall sample and test all slurry in the presence of the Engineer, unless otherwise directed. The date, time, names of the persons sampling and testing the slurry, and the results of the tests shall be recorded. A copy of the recorded slurry test results shall be submitted to the Engineer at the completion of each shaft, and during construction of each shaft when requested by the Engineer.

Sample sets of all slurry, composed of samples taken at mid-height and within 2.0 ft. of the bottom of the shaft, shall be taken and tested during drilling as necessary to verify the control of the properties of the slurry. As a minimum, sample sets of polymer slurry shall be taken and tested at least once every 4.0 hours after beginning its use during each shift. Regardless of slurry type, at least one sample set per shaft shall be taken and tested every day that slurry is in use, or more often as required by the Engineer.

Sample sets of all slurry, as specified, shall be taken and tested immediately prior to final cleanout inspection and again immediately prior to placing concrete.

Contractor shall provide suitable means to recover slurries. Mineral and polymer slurries shall not be pumped or placed directly in the river or on the ground. Permission to pump or place a water slurry directly in the river or on the ground must be obtained by the Contractor from the appropriate agencies.

(g) Excavations. The Contractor shall perform the excavation required for the shafts through whatever materials encountered, to the dimensions and elevations shown on the plans or required by the site conditions. The Contractor's methods and equipment shall be suitable for the intended purpose and materials encountered. During excavation of the shafts, the Contractor shall make frequent checks on the plumbness, alignment, and dimensions of the shaft to maintain required tolerances.

Bottom of shafts shall not be founded at an elevation above that shown on the plans without the approval of the Engineer. The depth that is to be drilled shall be considered an approximation and the Engineer may order, in writing, such changes in depth as may be necessary to secure a satisfactory foundation.

The Contractor shall drill one test boring at each drilled shaft location prior to the drilled shaft excavation, except Bridge 07684 Bents 12, 14, 15, and 16, for which test borings have already been drilled. The test boring shall be positioned as near as practical to the centerline of the shaft. If rock is encountered at an elevation at or above the required embedment above the planned tip elevation, core drilling shall start at the top of rock and advanced to a minimum depth of 2 times the shaft diameter below the planned tip elevation. If rock is encountered at an elevation lower than the required embedment above the planned tip elevation, core drilling shall start at the top of rock and advanced to a minimum depth of the required embedment plus 2 times the shaft diameter. If voids, coal, soil-filled cavities, or other discontinuities are encountered within the planned rock socket length or below the planned tip elevation, core drilling shall continue from the top of rock

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below the discontinuity and advanced to a minimum depth of 2 times the shaft diameter below the discontinuity or as directed by the Engineer.

Each test boring shall advance using rotary drilling techniques. Test borings shall use temporary casing extending through soil to the top of rock to facilitate diamond core drilling. Core drilling shall start at the top of rock. Hollow stem augers may be considered to meet the definition of temporary casing for drilling purposes provided they allow for satisfactory coring results. Diamond core drilling shall be done with a five-foot length NQ-size double-tube swivel-type wireline core barrel or a similar approved larger sized tube swivel-type core barrel. Test borings shall be backfilled with an approved bentonite-cement grout from the bottom up.

A completed test boring log for each respective test boring shall be provided to the Engineer. The test boring log shall include station, offset, surface elevation, complete visual description, drilling and sampling methods; and depth of the various soil or overburden layers encountered to top of rock. The test boring log shall also include visual descriptions and conditions of the rock cores, including any voids, soil-filled cavities or other anomalies encountered; Standard Core Recovery (SCR), and Rock Quality Designation (RQD) of each core run. The rock cores shall be removed, boxed, appropriately marked for elevation, SCR, and RQD, and photographed in the field.

The test boring logs, rock core photos, and rock core samples shall be provided to the Engineer within two business days after completion of the test boring for a determination of the drilled shaft tip elevation. If the bottom shaft elevation is lowered below planned tip elevation, additional core drilling may be required to sample rock below the new drilled shaft tip elevation.

The shaft excavation, including the rock socket, shall be made with the use of drilling fluid using the slurry displacement method. Mineral or Polymer slurry mixed in tanks and added to the shaft shall be used as a drilling fluid to stabilize the excavation and to prevent a hydrostatic head from occurring as the excavation advances below the temporary casing to rock. The drilling slurry level shall be maintained within the temporary casing at a minimum of at least 10 feet above the static groundwater level or river level, whichever is higher. Once the excavation advances to rock, the permanent casing shall be set in the excavated hole and seated into rock. Only water or polymer slurry shall be used as a drilling fluid during excavation and clean out of the shaft below the bottom of permanent casing. The level of drilling fluid shall be maintained until concrete placement is completed. Mineral slurry will not be allowed in the rock socket. Excavation of the rock socket shall be made with suitable rock auger, digging bucket, and core barrel tooling.

As an alternate to the slurry displacement method of shaft excavation, temporary and permanent casings may be advanced through the ground by twisting, vibrating, driving, or oscillating before being cleaned out. Alternating advancement of temporary and permanent casing below the groundwater table elevation and excavation inside the casing will be permitted provided a 5-foot soil plug and a minimum fluid head 5 feet above the groundwater table elevation is maintained inside the casing to maintain stability of the hole. Removal of the soil plug to the final bottom of casing will only be permitted once casing is seated into rock. Advancement of excavation below top of rock shall be the same as for the slurry displacement method. The alternate method of shaft excavation, if proposed, shall be submitted with the Contractor's drilled shaft Work Plan.

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Drilled shaft excavation shall begin only if the Contractor can complete the excavation, perform foundation inspection and testing, and place the reinforcement and concrete as a continuous operation. If the center-to-center spacing is less than 3 shaft diameters, no two adjacent shafts shall be excavated at the same time and shafts shall not be constructed within 24 hours of the completion of an adjacent shaft. If the excavation will be subjected to vibrations from nearby activities that may cause caving, casing shall be advanced as drilling proceeds to prevent caving.

No driving or vibrating of piling or casings shall be permitted within a radius of 75 feet of poured concrete that has not attained a compressive strength of 1500 psi.

Material excavated from shafts and not used in the backfill around the compacted pier or abutment shall be disposed of in a manner approved by the Engineer and shall not be placed in a waterway or otherwise impair the efficiency or appearance of the bridge or other parts of the work. Any excavation for the shaft beyond the lines required by the plans shall be filled with material approved by the Engineer and at the Contractor's expense.

When drilled shafts are to be installed in conjunction with embankment placement, the Contractor shall construct drilled shafts after the placement of fills unless otherwise approved by the Engineer.

When drilled shafts are to be installed in conjunction with a footing, excavation to the footing elevation shall be completed before shaft construction begins unless otherwise noted in the plans or approved by the Engineer. Prior to the footing pour, the Contractor shall repair any disturbance to the footing area caused by shaft installation.

No open excavation shall be left unattended. During non-working hours, excavations shall be protected by the use of solid, safe covers that are firmly fastened in place.

The Contractor shall provide suitable access, lighting, and equipment for checking the dimensions and alignment of each permanent shaft excavation and for inspecting the excavation. Any mechanical equipment used within the excavation shall be operated by air or electricity. The use of gasoline driven engines or any device that produces toxic fumes or uses atmospheric oxygen, within the excavation for any purpose will not be permitted. All lighting shall be electric, and precautions shall be taken in regard to potential short circuits of electric current within ground water. The Contractor shall not allow workers to enter the shaft excavation for any reason.

The Contractor shall check the dimensions and alignment of the shaft excavation under the direction of the Engineer. Final shaft depths shall be measured with suitable weighted tape or other approved methods after final cleaning of the excavation.

Final cleaning of the bottom of all shafts shall be by cleanout bucket and airlift or hydraulic pump. Cleanout buckets for final cleaning of shafts shall have a diameter at least 75 percent of the shaft diameter.

No concrete shall be placed until the Engineer approves the condition of the excavation. Prior to placing concrete, the shaft excavation shall be cleaned so that a minimum of 50 percent of the

DRILLED SHAFT FOUNDATIONS

base area will have less than ½ inch of sediment and at no place more than 1 ½ inch. The Contractor shall be responsible for showing that the excessive loose material has been removed from the excavation. Inspection of the bottom of the excavation after final cleaning shall be by Shaft Inspection Device (SID), or Shaft Quantitative Inspection Device (SQUID). SID or SQUID inspection shall be performed according to ASTM methods or industry standard practices, and as accepted by the Engineer. Weighted tape soundings will be used in combination with SID or SQUID for final bottom inspection and approval. All expenses for inspection shall be included in the price bid for "Drilled Shaft (__" Dia.)".

(h) Reinforcing Steel. The reinforcing steel cage shall be completely assembled and shall be placed as a unit immediately after the shaft excavation is inspected and accepted, and prior to concrete placement. The cage will consist of the reinforcing shown in the plans, cage stiffener bars as required, spacing devices, and any other appurtenances required to maintain alignment, shape, and clearances. Any internal stiffeners shall be removed as the cage is lowered into the excavation.

The minimum clearance between the edge of the drilled shaft and the vertical reinforcing steel and the minimum length of steel required for lap with the column steel shall be as shown in the plans.

The Contractor shall be responsible for the proper bracing of the reinforcing cage. This bracing shall be sufficient to permit assembly above ground and placing in the shaft as a unit without inducing deforming, twisting, or bending stress. Welding of reinforcing bars will not be permitted.

Concrete or wood spacer blocks shall not be used on the reinforcing cages. Epoxy coated metal "chair" type spacers, epoxy coated bent pieces of steel bars, or high density plastic alignment systems shall be used to ensure concentric spacing of the cage inside the shaft. Spacers shall be placed at least at every 30 inches around the circumference of the cage, and at a longitudinal spacing not exceeding 10 feet along the shaft and 1.5 feet from the top and bottom of shaft. The spacer sizes shall be varied as necessary along the length of the shaft to maintain a concentric spacing within the cased and uncased portions of the shaft. Tie wires shall be tucked into rebar cage.

The cage shall be supported from the top by some positive method to minimize uplift or downward slump during concrete placement and/or extraction of the casing. A minimum of one-half of the vertical bars shall be supported from the top. The support shall be concentric with the cage to prevent racking and distortion of the steel. Setting the cage on the socket bottom or supported on the temporary casing will not be permitted.

The elevation of the top of the steel cage shall be carefully checked before and after the concrete is placed. Displacement of the steel beyond the specified tolerances will be cause for rejection.

(i) Concrete. The work shall be performed in accordance with the provisions of Section 802 and in conformance with the requirements herein.

DRILLED SHAFT FOUNDATIONS

The maximum sublot size for acceptance sampling and testing of drilled shaft concrete by the Contractor shall be 100 cubic yards or one drilled shaft.

Concrete shall be placed by underwater methods as soon as possible after completion of the excavation and the inspection and setting of the reinforcing cage. In addition, to limit the degradation of the exposed shale rock socket and reduce risk of hole instability, the time from the start of excavation below the bottom of permanent casing into the rock socket to start of concreting the shaft shall not exceed 72 hours without refreshing the sidewalls and bottom of the rock socket with an approved back scratcher tool, cleanout bucket, and airlift. Refreshing does not restart the 72-hour time limit and shafts may be directed to be backfilled with flowable fill or rejected if the Engineer determines the rock socket capacity has been compromised due to excessive exposure time. Bottom inspection will be required after refreshing the socket. During concrete placement, the Contractor shall limit the difference in elevation of the concrete inside and outside the steel reinforcing cage to one (1) foot maximum. Concrete placement operations shall proceed in a continuous operation from the bottom of the shaft to the top of the shaft, unless a shaft construction joint below the top of the shaft is specified in the plans. After the concrete level has reached the top of the shaft, it will be forced to overflow until only fresh uncontaminated concrete is left in the shaft, unless a shaft construction joint below the top of the shaft is specified in the plans.

If a shaft construction joint below the top of the shaft is specified in the plans, concrete shall be placed in a continuous operation from the bottom of the shaft to 2'-6" above the shaft construction joint or as directed by the Engineer, but in no case less than 1'-0". Care shall be exercised to control and minimize the depth of scum, laitance, loose gravel, and sediment above the shaft construction joint prior to concrete set. After the shaft concrete has cured for a minimum of 72 hours and after conducting nondestructive testing, the Contractor shall remove all remaining scum, laitance, loose gravel, and sediment down to sound concrete, or to the depth of the shaft construction joint, whichever is lower. After approval of the shaft, the column reinforcing shall be set and the remaining portion of the shaft concrete shall be poured in the dry.

Concrete waste shall not enter the waterway as required by any applicable Section 404 Permits. Exposed portions of each drilled shaft shall be cured and any construction joint area shall be treated as prescribed in Section 802 and roughened to an amplitude of ¼ inch.

Placement of drilled shaft concrete underwater shall be required for all shafts in strict conformance with the procedures outlined for an underwater pour. The drilling slurry level shall be maintained within the permanent casing at a minimum of at least 10 feet above the static groundwater level or river level, whichever is higher, until the concrete pour is completed.

All drilled shaft concrete shall be placed underwater through a tremie or by pumping to prevent segregation of materials. The tremie shall have sufficient length to discharge concrete at the shaft base and shall consist of a rigid tube with a diameter of no more than 14 inches nor less than 10 inches and be fitted with a hopper at the top. The tremie shall not contain aluminum parts that may come in contact with the concrete. The inside and outside surfaces of the tremie shall be clean and smooth to permit flow of concrete and unimpeded withdrawal. It shall be constructed and supported so that it can be moved horizontally to cover the work area and moved vertically to control the concrete flow as the level of the concrete in the shaft is raised.

DRILLED SHAFT FOUNDATIONS

The concrete pump line shall have a minimum diameter of 5 inches with the portion of the line inside the excavation meeting the requirements above, but only that portion of the pump line in contact with the concrete will be required to be rigid. All pump equipment shall be clean and in good operating condition.

The tremie and pump lines shall be watertight and constructed so that the discharge end can be sealed closed at the start of work to prevent water from entering the tremie or pump line before the tremie or pump line is filled with concrete. If a plug is used to separate the concrete from the fluid in the hole, the plug shall be removed from the excavation after placement has begun. Concrete placement shall be done in one continuous operation. The discharge orifice shall be at the bottom of the shaft at the beginning of the concrete placement and shall remain at least 10 feet below the top surface of the fluid concrete. The Contractor shall provide equipment and personnel to sound the top of the concrete in the presence of the Engineer in order to verify the location of the concrete surface and the discharge orifice at all times. After concrete placement has started the concrete level in the tremie shall be maintained above the water level in the shaft to prevent water intrusion into the shaft concrete. When lifting the pump line during concreting, the Contractor shall temporarily reduce line pressure until the orifice has been repositioned at a higher elevation in the excavation. If at any time during the concrete pour the orifice is removed from the fluid concrete and discharges concrete above the rising concrete surface, the entire drilled shaft will be considered defective. In such case, the Contractor shall remove the reinforcing cage and concrete, complete any necessary sidewall cleaning or overreaming as directed by the Engineer, and repour the shaft.

(j) Drilled Shaft Log. A record of each shaft construction shall be furnished by the Contractor to the Engineer prior to acceptance of the shaft. This Drilled Shaft Log shall include: information about the drilling procedures and equipment; a log of the excavated material; the as constructed elevations and lengths of all vertical elements of the shaft including reinforcing and casings; depth of final excavation, founding material and bottom condition; concrete volume and a concreting curve showing depth versus volume over the length of the shaft, volume used in overflow and purging; and the date and time of pertinent operations used in constructing the drilled shaft from beginning of excavation to completion of concrete placement. If a shaft construction joint below the top of the shaft is specified in the plans, the Drilled Shaft Log shall include the depth of concrete poured above the shaft construction joint, the depth of concrete removed prior to concrete set, and the method(s) used to control and minimize the depth of scum, laitance, loose gravel, and sediment above the shaft construction joint. During concrete operations, except for those above a shaft construction joint, the Contractor shall dedicate an inspector to the function of monitoring concreting operations and recording these portions of the Drilled Shaft Log. Failure to meet this requirement will be grounds for additional integrity investigation of the shaft at the Contractor's expense.

Method of Measurement. Acceptable drilled shafts, complete in place and of the specified diameter, will be measured by the linear foot as constructed to the dimensions shown on the plans or approved by the Engineer from bottom to top of shaft. No additional payment will be made for any excavation or concrete provided beyond the lines required by the plans.

Permanent casing for the specified diameter will be measured by the linear foot of the actual accepted length left in place. Measurement will be along the casing from top of casing or top of

DRILLED SHAFT FOUNDATIONS

shaft, whichever is lower, to the bottom of the casing at each shaft location where permanent casing is authorized and used.

Temporary steel casing will not be measured for separate payment but shall be included in the unit price for "Drilled Shaft (__" Dia.)".

Basis of Payment. Drilled shafts, measured as provided above, will be paid for at the contract unit price bid per linear foot for "Drilled Shaft (__" Dia.)" which shall be full compensation for making and inspecting shaft excavations; for furnishing, use, and handling and disposing of all drilling fluids, for drilling test borings and furnishing logs; for furnishing, placing, and removing temporary casing; for furnishing and placing all concrete and reinforcing steel; for the removal of scum, laitance, loose gravel, and sediment down to sound concrete when preparing a shaft construction joint; for performing mix designs; for preparing trial batches; for keeping the Drilled Shaft Log; for providing and placing necessary materials for nondestructive testing as required by those special provisions; for quality control and acceptance sampling and testing; for all backfilling; and for furnishing all tools, labor, equipment and incidentals necessary to complete the work.

When drilled shafts are carried below elevations shown on the plans at the direction of the Engineer, the additional length of drilled shaft will be measured as provided above and will be paid for in accordance with the following price schedule:

Depth Below Planned Elevation	**Price**
Not more than 5 feet	Contract Price
Excess of 5 feet and not more than 15 feet	Contract Price + 15%
More than 15 feet	Contract Price + 25%

Permanent casing will be paid for at the contract unit price bid per linear foot for "Permanent Steel Casing (__" Dia.)" which shall be full compensation for furnishing and placing the casing above the costs attributed to the work paid for under associated pay items.

Payment will be made under:

Pay Item	**Pay Unit**
Drilled Shaft (__" Dia.)	Linear Foot
Permanent Steel Casing (__" Dia.)	Linear Foot

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

NONDESTRUCTIVE TESTING OF DRILLED SHAFTS

Description. This work shall consist of the Nondestructive Testing (NDT) of drilled shaft foundations, as described herein. All work shall be in accordance with this Special Provision, the details shown in the plans, Standard Specifications, and as directed by the Engineer.

Work to be Performed. (a) General Requirements. The NDT methods known as Crosshole Sonic Logging (CSL) and Thermal Integrity Profiling (TIP) shall be used on each drilled shaft where specified in the plans. The Contractor shall employ one experienced independent testing organization approved by the Engineer to perform all NDT. Information shall be supplied showing the independent testing organization has the experience in the kind of work described in this Special Provision and also showing they have the equipment capable of performing the work.

(b) CSL (1) Testing. Testing shall be in accordance with ASTM D6760 and this Special Provision, and shall not be conducted until at least 72 hours after placement of concrete is concluded in the shaft, unless a shaft construction joint below the top of the shaft is specified in the plans. If a shaft construction joint is specified, testing shall be conducted at least 72 hours after placement of the initial concrete is concluded in the shaft and prior to any subsequent concrete placement. Testing of drilled shaft concrete above a shaft construction joint specified in the plans will not be required. Testing of the first shaft placed in each bent shall be completed within 14 calendar days after placement of concrete in the first shaft in each bent.

The Engineer shall approve the scheduling of subsequent testing. Testing on the remaining shafts in each bent shall be completed within 14 calendar days of the last shaft placed, but no later than 30 calendar days after placement of concrete in a particular shaft.

(2) Preparation for Testing. To accommodate the CSL test requirements, the Contractor shall install a number of pipes in each shaft. The number of pipes installed will depend on the diameter of the shaft as specified below:

NONDESTRUCTIVE TESTING OF DRILLED SHAFTS

Shaft Diameter	Minimum Number of Pipes	Pipe Spacing
48”	4	90 Degrees
54"	5	72 Degrees
60”	5	72 Degrees

The pipes shall be ASTM A53 Standard Weight, or an approved equivalent, steel pipe with a minimum inside diameter (ID) of 1.5 or 2 inches, and shall be in compliance with “Buy America” requirements and Subsection 106.01. The pipes shall have a round, regular internal diameter free of defects or obstructions including defects at pipe joints; in order to permit the free, unobstructed passage of 1.375 inch diameter source and receiver probes. The pipes shall be watertight and free from corrosion with clean internal and external faces to ensure passage of the probes inside and a good bond with the concrete outside.

Each pipe shall be fitted with a watertight shoe on the bottom and a removable cap or plug on the top. The pipes shall be securely attached to the interior of the reinforcing steel cage. The pipes shall be installed in each shaft in a regular, symmetric pattern such that each pipe is equally spaced from the others around the perimeter of the cage. Prior to construction, the Contractor shall submit their selection of pipes and proposed method of pipe installation to the approved testing organization. The pipes shall be secured to the reinforcing cage at three foot vertical intervals, such that the pipes remain in position during placement of the cage and placement of the concrete.

The pipes shall be as near to parallel as possible. **They shall extend from within 0.25 feet above the shaft’s excavated bottom to at least 3 feet above the top of shaft. If the length of the excavated shaft varies from the plans, the pipes shall be adjusted to meet the above requirements.** No pipe may be allowed to rest on the bottom of a drilled excavation. Any joints required to achieve full length pipes shall be made watertight. Care shall be taken during placement of the reinforcing steel cage so as not to damage the pipes.

After placement of the cage, and before placement of concrete, the pipes shall be filled with potable water and the pipe tops shall be capped or sealed to keep debris or other foreign matter out of the pipes. In a case where conditions make rapid concrete placement imperative, the Engineer may permit the filling of the pipes to be delayed until immediately after the concrete is placed while exercising care to avoid spilling of water onto freshly cast concrete. Care shall be exercised in the removal of caps or plugs so as not to apply excess torque, hammering, or other stresses that could break the bond between the pipes and the concrete.

Upon completion of all CSL testing on a shaft, and after the acceptance of that shaft by the Engineer, the pipes shall be filled by the Contractor with a QPL approved grout such that no air pockets or impurities remain in the pipes. All water shall be removed from the access pipes. The portion of pipe extending above the top of the shaft shall be removed.

NONDESTRUCTIVE TESTING OF DRILLED SHAFTS

(3) CSL Test Equipment. The CSL testing equipment shall consist of all necessary supplies, support equipment, and power to perform the testing and to record, analyze, and report the results in accordance with this Special Provision.

(4) CSL Testing Procedures. Before placement of concrete, the Contractor shall investigate at least one pipe per shaft to ensure there are no bends, crimps, obstructions or other impediments to the free passage of the testing probes. A record of all pipe lengths, including a measurement of the projection of the pipes above the top of the shaft shall be made. Prior to the CSL tests, the Contractor shall provide this information, shaft bottom elevations, top elevations, and construction dates to the approved testing organization and Engineer.

The tests shall be conducted by the approved testing organization between all pairs of pipes. The CSL test shall be carried out with the source and receiver probes in the same horizontal plane. Any slack shall be removed from the cables prior to pulling to provide for accurate depth measurements in the CSL records. CSL measurements shall be made at increments of 3 inches or less from the bottom to the top of each shaft. The probes shall be pulled simultaneously over the depth measuring wheel, starting from the bottoms of the pipes.

Any anomalies/defects indicated by longer pulse arrival times and significantly lower amplitude/energy signals shall be reported to the Engineer. Further tests may be required to evaluate the extent of such anomalies/defects. Additional NDT methods which could be used to evaluate possible defects include: Angled Crosshole Sonic Logging, Crosshole Tomography, Single Hole Sonic Logging, Gamma-Gamma Nuclear Density Logging, and Sonic Echo and Impulse Response tests. Any additional nondestructive testing shall be provided at no cost to the Department and with no extension of the contract time.

(5) CSL Testing Results. The CSL test results shall be compiled into an overall shaft integrity testing report for each shaft. The report shall summarize and analyze (a) initial pulse arrival time versus depth and (b) pulse energy/amplitude versus depth. In addition, the report shall include a (c) plot of pulse velocity versus depth and a (d) waterfall diagram of nested arrival times for each pair of pipes that are tested. A CSL log will be presented for each pair of pipes tested, with any defect zones indicated on the logs and discussed in the report. All filtering or smoothing of the processed results shall be disclosed in the report. The logs shall cover the full length of shaft corresponding to the measurements provided by the Contractor for the constructed length minus 0.75 feet to allow for CSL tube to shaft bottom offset and CSL equipment limitations. More than 0.75 feet of missing data at any tube pair will be grounds for additional integrity investigation at the Contractor's expense.

(c) TIP (1) Testing. Testing, if specified in the plans, shall be in accordance with ASTM D7949 (Method B) and the provisions herein. Temperature measurements at each drilled shaft shall begin as soon as concrete placement has ceased, or sooner if directed so by the testing agency, and shall be recorded at 15 minute intervals for a minimum of 36 hours or until peak temperature is captured in the data, whichever is longer. Additional monitoring time may be required if the drilled shaft concrete contains admixtures such as set-retarders and water-reducing agents. Due to the limited time window for proper TIP testing, the Contractor shall coordinate with the testing agency all necessary project scheduling in an effort to minimize project delays

and ensure proper monitoring of the concrete heat of hydration. Testing of drilled shaft concrete above a shaft construction joint will not be required.

(2) Preparation for Testing. The testing agency shall work closely with the Contractor to ensure all thermal wiring is properly installed and functional prior to cage installation and again prior to concreting. The Contractor responsible for installing the thermal wiring shall be required to obtain training from the Manufacturer on proper installation practices prior to actual installation. The number of thermal wires necessary for proper TIP testing shall be at the recommendation of the testing agency and meet or exceed standard industry practice based on the concrete volumes used, but in no case shall be less than one thermal wire per foot of shaft diameter, rounding to the next whole number as necessary (e.g., five wires are required for a 4'-6" diameter shaft). Thermal wiring shall be installed uniformly around the perimeter of the reinforcing cage and shall be adequately secured to the reinforcing steel cage. Securing thermal wiring to CSL pipes will not be allowed. Thermal wiring shall extend to a depth capable of providing temperature measurements to within 0.5 feet of the shaft's excavated bottom. If the bottom of drilled shaft is excavated below plan elevation requiring the cage to be extended, proper measures shall be followed to adjust thermal wiring placement in a manner approved by the testing agency to ensure adequate TIP testing coverage. The Contractor shall provide an accurate record of thermal wiring serial numbers (or other identification codes) and their corresponding locations in each shaft for proper monitoring.

All thermal access ports (TAPs) shall be adequately protected from damage during rebar placement and concreting operations. Adequate thermal wiring shall be extended from the top of shaft to allow connecting of TAPs and all thermal monitoring equipment.

The Contractor shall work closely with the testing agency to provide all relevant information required for proper TIP testing, such as shaft drilling and inspection records, detailed concrete placement logs, and concrete mix design.

(3) TIP Test Equipment. The TIP testing equipment shall consist of all necessary supplies, support equipment, and power to perform the testing and to record, analyze, and report the results in accordance with this Special Provision.

(4) TIP Testing Results. The TIP test results shall be compiled into an overall shaft integrity testing report for each shaft. The report shall address, but not be limited to: overall shaft geometry, concrete cover, concrete quality, and location of the reinforcing cage. Any anomalies shall be addressed in the report along with the testing agency's expert opinion of what the likely cause of the anomaly is. The temperature data shall cover the full length of shaft corresponding to the measurements provided by the Contractor for the constructed length minus 0.5 feet to allow for thermal wire to shaft bottom offset. More than 0.5 feet of missing data will be grounds for additional integrity investigation at the Contractor's expense.

(d) Evaluation of NDT Results. The CSL and TIP test results shall be compiled into an overall integrity testing report for each shaft and approved/sealed by an Arkansas Licensed Professional Engineer. The approved testing organization shall supply one digital copy, in an approved format, of the NDT report to the Engineer and a copy of each report shall be provided

NONDESTRUCTIVE TESTING OF DRILLED SHAFTS

to the Contractor. Raw data files for all NDT performed shall be kept available for review and provided at the Department's request.

The integrity report for the first shaft shall be provided to the Engineer within 72 hours of completion of all NDT on that shaft. The Contractor will not be allowed to begin any construction operations on the remaining shafts or make additional permanent construction on the first shaft until the Engineer has approved the first shaft. The Engineer will evaluate the NDT results and will determine whether or not the drilled shaft construction is acceptable. If the Engineer approves the first drilled shaft based upon the results of the NDT, then the shaft and the shaft site will be turned back to the Contractor and further construction may proceed.

The integrity reports of the subsequent shafts shall be provided to the Engineer within 72 hours of completion of all NDT on each shaft. The Contractor will not be allowed to make additional permanent construction on each shaft until the Engineer has approved that shaft.

Provided the reports received meet the requirements of this Specification, the Engineer will provide a response within 10 business days of each report received. Incomplete submission of required data necessary for review, including detailed drilled shaft logs, will delay this review and no contract time extensions will be allowed due to delays caused by incomplete submittals.

The acceptance of each drilled shaft shall be the decision of the Engineer, based on the results of the shaft integrity testing reports and other information of the shaft placement. If it is determined by the Engineer that any confirmed defect indicated by NDT may affect the structural integrity of the shaft, the Engineer may require the Contractor to verify shaft conditions by core drilling in accordance with Subsection (e), "Evaluation by Core Drilling."

(e) Evaluation by Core Drilling. A drilled shaft that is found to be unacceptable by the NDT may be cored by the Contractor using double tube core barrels. Core samples shall be obtained, handled, and tested in accordance with AASHTO T 24-15. At the Contractor's option a PQ size core barrel may be used. Core samples will be delivered to the Department's Materials Division where they will be visually inspected and selected samples will be evaluated for compressive strength. Selected samples with compressive strengths less than 0.85 f'c will be considered unacceptable. A core sample shall be taken from each defect location, at a length specified by the Engineer. The methods and equipment used to core the drilled shaft and grout the cored hole shall be approved by the Engineer prior to commencing coring operations. An accurate log of the core shall be kept and the core shall be crated/boxed and properly marked showing the shaft depth at each interval of core recovery. The crates/boxes which store the cores shall be properly labeled with the job number, bridge number, bent number, and the shaft number. The core, along with two copies of the coring log, shall be provided to the Engineer.

If the quality of the shaft, as represented by the core samples, is determined to be acceptable by the Engineer, then the shaft and the shaft site will be turned back to the Contractor and further construction may proceed. If the quality of the shaft is determined to be unacceptable by the Engineer, then the Contractor shall proceed in accordance with Subsection (f), "Defective Shaft," below. If a defect is confirmed, the Contractor shall pay for all coring and grouting in the shaft related to a suspected defect. If no defect is encountered, compensation for all coring and

NONDESTRUCTIVE TESTING OF DRILLED SHAFTS

grouting in the shaft will be paid for at the contract unit price bid per linear foot for "Coring Drilled Shaft." Upon acceptance of the shaft, core holes shall be cleaned and filled with a QPL approved grout such that no impurities or air pockets remain.

(f) Defective Shaft. If the Engineer determines that a shaft is unacceptable, the Contractor shall submit a plan for remedial action to the Engineer for approval. Any modifications to the foundation shaft and load transfer mechanisms caused by the remedial action will require calculations and working drawings stamped and signed by an Arkansas Licensed Professional Engineer for all affected foundation elements. This data shall be submitted to the Engineer for information and record keeping purposes. All labor and materials required to perform remedial shaft action shall be provided at no cost to the Department and with no extension of the contract time.

Method of Measurement. (a) CSL Testing. Acceptable CSL tests shall be measured per each shaft tested of a specified diameter.

(b) TIP Testing. Acceptable TIP tests shall be measured per each shaft tested of a specified diameter. Non-functioning thermal sensors will be grounds for rejection at the discretion of the Engineer.

(c) Coring Drilled Shafts. If no defect is encountered, the coring of shafts shall be measured by the linear foot.

Basis of Payment. CSL and TIP testing shall be paid for at the contract unit price bid per each shaft tested of a specified diameter. The price bid for each shaft tested shall be full compensation for furnishing all equipment and incidentals necessary to perform the required test, performing the tests, analyzing the results, and furnishing the Engineer with the shaft integrity reports, as required.

Furnishing and installing all wiring, connectors, pipes, splices, maintaining water level in the pipes, dewatering the pipes, removing excess pipe above top of shaft, and filling the pipes with grout will be considered incidental to the unit price bid for "Drilled Shaft (" Dia.)".

Coring for shafts where no defect is encountered will be paid for at the unit price bid per linear foot of "Coring Drilled Shaft" which price shall be compensation for furnishing all labor, materials, grout, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	**Pay Unit**
Crosshole Sonic Logging (" Dia.)	Each
Thermal Integrity Profiling (" Dia.)	Each
Coring Drilled Shaft	Linear Foot

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

NONDESTRUCTIVE TESTING OF DRILLED SHAFTS FOR STEEL SIGN STRUCTURES

Description. This work shall consist of the Nondestructive Testing (NDT) of drilled shaft foundations, as described herein. All work shall be in accordance with this Special Provision, the details shown in the plans, Standard Specifications, and as directed by the Engineer.

Work to be Performed. (a) General Requirements. The NDT methods known as Crosshole Sonic Logging (CSL) and Thermal Integrity Profiling (TIP) shall be used where specified in the plans. The Contractor shall employ one experienced independent testing organization approved by the Engineer to perform all NDT. Information shall be supplied showing the independent testing organization has the experience in the kind of work described in this Special Provision and also showing they have the equipment capable of performing the work.

(b) CSL (1) Testing. Testing shall be in accordance with ASTM D6760 and this Special Provision, and shall not be conducted until at least 72 hours after placement of concrete is concluded in the shaft, unless a shaft construction joint below the top of the shaft is specified in the plans. If a shaft construction joint is specified, testing shall be conducted at least 72 hours after placement of the initial concrete is concluded in the shaft and prior to any subsequent concrete placement. Testing of drilled shaft concrete above a shaft construction joint will not be required. Testing of the first shaft placed shall be completed within 14 calendar days after placement of concrete in the first shaft.

The Engineer shall approve the scheduling of subsequent testing. Testing on the remaining shafts shall be completed within 14 calendar days of the last shaft placed, but no later than 45 calendar days after placement of concrete in a particular shaft.

(2) Preparation for Testing. To accommodate the CSL test requirements, the Contractor shall install a number of pipes in each shaft. The number of pipes installed will depend on the diameter of the shaft as specified below:

Shaft Diameter	Minimum Number of Pipes	Pipe Spacing
30"	4	90 Degrees
36"	4	90 Degrees

The pipes shall be ASTM A53 Standard Weight, or an approved equivalent, steel pipe with a minimum inside diameter (ID) of 1.5 or 2 inches, and shall be in compliance with “Buy

NONDESTRUCTIVE TESTING OF DRILLED SHAFTS FOR STEEL SIGN STRUCTURES

America" requirements and Subsection 106.01. The pipes shall have a round, regular internal diameter free of defects or obstructions including defects at pipe joints; in order to permit the free, unobstructed passage of 1.375 inch diameter source and receiver probes. The pipes shall be watertight and free from corrosion with clean internal and external faces to ensure passage of the probes inside and a good bond with the concrete outside.

Each pipe shall be fitted with a watertight shoe on the bottom and a removable cap or plug on the top. The pipes shall be securely attached to the interior of the reinforcing steel cage. The pipes shall be installed in each shaft in a regular, symmetric pattern such that each pipe is equally spaced from the others around the perimeter of the cage. Prior to construction, the Contractor shall submit their selection of pipes and proposed method of pipe installation to the approved testing organization. The pipes shall be secured to the reinforcing cage at three foot vertical intervals, such that the pipes remain in position during placement of the cage and placement of the concrete.

The pipes shall be as near to parallel as possible. **They shall extend from within 0.25 feet above the shaft's excavated bottom to at least 3 feet above the top of shaft. If the length of the excavated shaft varies from the plans, the pipes shall be adjusted to meet the above requirements.** No pipe may be allowed to rest on the bottom of a drilled excavation. Any joints required to achieve full length pipes shall be made watertight. Care shall be taken during placement of the reinforcing steel cage so as not to damage the pipes.

After placement of the cage, and before placement of concrete, the pipes shall be filled with potable water and the pipe tops shall be capped or sealed to keep debris or other foreign matter out of the pipes. In a case where conditions make rapid concrete placement imperative, the Engineer may permit the filling of the pipes to be delayed until immediately after the concrete is placed while exercising care to avoid spilling of water onto freshly cast concrete. Care shall be exercised in the removal of caps or plugs so as not to apply excess torque, hammering, or other stresses that could break the bond between the pipes and the concrete.

Upon completion of all CSL testing on a shaft, and after the acceptance of that shaft by the Engineer, the pipes shall be filled by the Contractor with a QPL approved grout such that no air pockets or impurities remain in the pipes. All water shall be removed from the access pipes. The portion of pipe extending above the top of the shaft shall be removed.

(3) CSL Test Equipment. The CSL testing equipment shall consist of all necessary supplies, support equipment, and power to perform the testing and to record, analyze, and report the results in accordance with this Special Provision.

(4) CSL Testing Procedures. Before placement of concrete, the Contractor shall investigate at least one pipe per shaft to ensure there are no bends, crimps, obstructions or other impediments to the free passage of the testing probes. A record of all pipe lengths, including a measurement of the projection of the pipes above the top of the shaft shall be made. Prior to the CSL tests, the Contractor shall provide this information, shaft bottom elevations, top elevations, and construction dates to the approved testing organization and Engineer.

NONDESTRUCTIVE TESTING OF DRILLED SHAFTS FOR STEEL SIGN STRUCTURES

The tests shall be conducted by the approved testing organization between all pairs of pipes. The CSL test shall be carried out with the source and receiver probes in the same horizontal plane. Any slack shall be removed from the cables prior to pulling to provide for accurate depth measurements in the CSL records. CSL measurements shall be made at increments of 3 inches or less from the bottom to the top of each shaft. The probes shall be pulled simultaneously over the depth measuring wheel, starting from the bottoms of the pipes.

Any anomalies/defects indicated by longer pulse arrival times and significantly lower amplitude/energy signals shall be reported to the Engineer. Further tests may be required to evaluate the extent of such anomalies/defects. Additional NDT methods which could be used to evaluate possible defects include: Angled Crosshole Sonic Logging, Crosshole Tomography, Single Hole Sonic Logging, Gamma-Gamma Nuclear Density Logging, and Sonic Echo and Impulse Response tests. Any additional nondestructive testing shall be provided at no cost to the Department and with no extension of the contract time.

(5) CSL Testing Results. The CSL test results shall be compiled into an overall shaft integrity testing report for each shaft. The report shall summarize and analyze (a) initial pulse arrival time versus depth and (b) pulse energy/amplitude versus depth. In addition, the report shall include a (c) plot of pulse velocity versus depth and a (d) waterfall diagram of nested arrival times for each pair of pipes that are tested. A CSL log will be presented for each pair of pipes tested, with any defect zones indicated on the logs and discussed in the report. All filtering or smoothing of the processed results shall be disclosed in the report. The logs shall cover the full length of shaft corresponding to the measurements provided by the Contractor for the constructed length minus 0.75 feet to allow for CSL tube to shaft bottom offset and CSL equipment limitations. More than 0.75 feet of missing data at any tube pair will be grounds for additional integrity investigation at the Contractor’s expense.

(c) TIP (1) Testing. Testing, if specified in the plans, shall be in accordance with ASTM D7949 (Method B) and the provisions herein. Temperature measurements at each drilled shaft shall begin as soon as concrete placement has ceased, or sooner if directed so by the testing agency, and shall be recorded at 15 minute intervals for a minimum of 36 hours or until peak temperature is captured in the data, whichever is longer. Additional monitoring time may be required if the drilled shaft concrete contains admixtures such as set-retarders and water-reducing agents. Due to the limited time window for proper TIP testing, the Contractor shall coordinate with the testing agency all necessary project scheduling in an effort to minimize project delays and ensure proper monitoring of the concrete heat of hydration. Testing of drilled shaft concrete above a shaft construction joint will not be required.

(2) Preparation for Testing. The testing agency shall work closely with the Contractor to ensure all thermal wiring is properly installed and functional prior to cage installation and again prior to concreting. The Contractor responsible for installing the thermal wiring shall be required to obtain training from the Manufacturer on proper installation practices prior to actual installation. The number of thermal wires necessary for proper TIP testing shall be at the recommendation of the testing agency and meet or exceed standard industry practice based on the concrete volumes used, but in no case shall be less than one thermal wire per foot of shaft diameter, rounding to the next whole number as necessary (e.g., five wires are required for a 4'-6" diameter shaft). Thermal wiring shall be installed uniformly around the perimeter of the

reinforcing cage and shall be adequately secured to the reinforcing steel cage. Securing thermal wiring to CSL pipes will not be allowed. Thermal wiring shall extend to a depth capable of providing temperature measurements to within 0.5 feet of the shaft's excavated bottom. If the bottom of drilled shaft is excavated below plan elevation requiring the cage to be extended, proper measures shall be followed to adjust thermal wiring placement in a manner approved by the testing agency to ensure adequate TIP testing coverage. The Contractor shall provide an accurate record of thermal wiring serial numbers (or other identification codes) and their corresponding locations in each shaft for proper monitoring.

All thermal access ports (TAPs) shall be adequately protected from damage during rebar placement and concreting operations. Adequate thermal wiring shall be extended from the top of shaft to allow connecting of TAPs and all thermal monitoring equipment.

The Contractor shall work closely with the testing agency to provide all relevant information required for proper TIP testing, such as shaft drilling and inspection records, detailed concrete placement logs, and concrete mix design.

(3) TIP Test Equipment. The TIP testing equipment shall consist of all necessary supplies, support equipment, and power to perform the testing and to record, analyze, and report the results in accordance with this Special Provision.

(4) TIP Testing Results. The TIP test results shall be compiled into an overall shaft integrity testing report for each shaft. The report shall address, but not be limited to: overall shaft geometry, concrete cover, concrete quality, and location of the reinforcing cage. Any anomalies shall be addressed in the report along with the testing agency's expert opinion of what the likely cause of the anomaly is. The temperature data shall cover the full length of shaft corresponding to the measurements provided by the Contractor for the constructed length minus 0.5 feet to allow for thermal wire to shaft bottom offset. More than 0.5 feet of missing data will be grounds for additional integrity investigation at the Contractor's expense.

(d) Evaluation of NDT Results. The CSL and TIP test results shall be compiled into an overall integrity testing report for each shaft and approved/sealed by an Arkansas Licensed Professional Engineer. The approved testing organization shall supply one digital copy, in an approved format, of the NDT report to the Engineer and a copy of each report shall be provided to the Contractor. Raw data files for all NDT performed shall be kept available for review and provided at the Department's request.

The integrity report for the first shaft shall be provided to the Engineer within 72 hours of completion of all NDT on that shaft. The Contractor will not be allowed to begin any construction operations on the remaining shafts or make additional permanent construction on the first shaft until the Engineer has approved the first shaft. The Engineer will evaluate the NDT results and will determine whether or not the drilled shaft construction is acceptable. If the Engineer approves the first drilled shaft based upon the results of the NDT, then the shaft and the shaft site will be turned back to the Contractor and further construction may proceed.

NONDESTRUCTIVE TESTING OF DRILLED SHAFTS FOR STEEL SIGN STRUCTURES

The integrity reports of the subsequent shafts shall be provided to the Engineer within 72 hours of completion of all NDT on each shaft. The Contractor will not be allowed to make additional permanent construction on each shaft until the Engineer has approved that shaft.

Provided the reports received meet the requirements of this Specification, the Engineer will provide a response within 10 business days of each report received. Incomplete submission of required data necessary for review, including detailed drilled shaft logs, will delay this review and no contract time extensions will be allowed due to delays caused by incomplete submittals.

The acceptance of each drilled shaft shall be the decision of the Engineer, based on the results of the shaft integrity testing reports and other information of the shaft placement. If it is determined by the Engineer that any confirmed defect indicated by NDT may affect the structural integrity of the shaft, the Engineer may require the Contractor to verify shaft conditions by core drilling in accordance with Subsection (e), "Evaluation by Core Drilling."

(e) Evaluation by Core Drilling. A drilled shaft that is found to be unacceptable by the NDT may be cored by the Contractor using double tube core barrels. Core samples shall be obtained, handled, and tested in accordance with AASHTO T 24-15. At the Contractor's option a PQ size core barrel may be used. Core samples will be delivered to the Department's Materials Division where they will be visually inspected and selected samples will be evaluated for compressive strength. Selected samples with compressive strengths less than 0.85 f'c will be considered unacceptable. A core sample shall be taken from each defect location, at a length specified by the Engineer. The methods and equipment used to core the drilled shaft and grout the cored hole shall be approved by the Engineer prior to commencing coring operations. An accurate log of the core shall be kept and the core shall be crated/boxed and properly marked showing the shaft depth at each interval of core recovery. The crates/boxes which store the cores shall be properly labeled with the job number, bridge or sign structure number, bent number (if applicable), and the shaft number. The core, along with two copies of the coring log, shall be provided to the Engineer.

If the quality of the shaft, as represented by the core samples, is determined to be acceptable by the Engineer, then the shaft and the shaft site will be turned back to the Contractor and further construction may proceed. If the quality of the shaft is determined to be unacceptable by the Engineer, then the Contractor shall proceed in accordance with Subsection (f), "Defective Shaft," below. The Contractor shall pay for all coring and grouting in the shaft related to a suspected defect. Upon acceptance of the shaft, core holes shall be cleaned and filled with a QPL approved grout such that no impurities or air pockets remain.

(f) Defective Shaft. If the Engineer determines that a shaft is unacceptable, the Contractor shall submit a plan for remedial action to the Engineer for approval. Any modifications to the foundation shaft and load transfer mechanisms caused by the remedial action will require calculations and working drawings stamped and signed by an Arkansas Licensed Professional Engineer for all affected foundation elements. This data shall be submitted to the Engineer for information and record keeping purposes. All labor and materials required to perform remedial shaft action shall be provided at no cost to the Department and with no extension of the contract time.

NONDESTRUCTIVE TESTING OF DRILLED SHAFTS FOR STEEL SIGN STRUCTURES

Basis of Payment. All costs incurred in complying with this Special Provision, including all costs for CSL and TIP testing; all costs for furnishing and installing all wiring, connectors, pipes, splices, maintaining water level in the pipes, dewatering the pipes, removing excess pipe above top of shaft, and filling the pipes with grout; and all costs for coring drilled shafts, will not be measured or paid for separately, but shall be considered subsidiary to the items of "Steel Overhead Sign Structure (__)", "Steel Cantilever Sign Structure (__)" and "Steel Tee Mount Sign Structure (__)".

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

DRIVEN PILING BY METHOD A

Section 805 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection 805.07(a) shall be deleted and the following substituted therefor:

(a) Hammers. Unless otherwise specified on the plans, all piling shall be driven with a single acting diesel hammer. It shall be equipped with a stroke indicator or the Contractor must furnish a method approved by the Engineer for determining the actual stroke.

Subsection 805.09(a) shall be deleted and the following substituted therefor:

(a) Method A – Empirical Pile Formulas. The following FHWA Modified Gates Formula shall be used to determine the nominal driving resistance, R_{ndr}, of piles at the end of driving. The term "nominal driving resistance" is considered synonymous with the term "ultimate bearing capacity" used elsewhere in Section 805. References to Method A and Empirical Pile Formulas made elsewhere in Section 805 shall be understood to refer to the FHWA Modified Gates Formula presented in this Special Provision.

$$R_{ndr} = 1.75 * \sqrt{E_d} * \log_{10}(10 * N_b) - 100$$

R_{ndr} = nominal driving resistance of pile, measured in kips.
E_d = developed hammer energy in foot-pounds.
N_b = Number of hammer blows for 1.0 inch of pile permanent set in blows/inch.

The developed hammer energy "E_d" is the kinetic energy in the ram at impact for a given blow. For single acting diesel hammers, the kinetic energy may be assumed equal to the potential energy of the ram at the height of the stroke, taken as the ram weight times the stroke, unless otherwise directed by the Engineer.

The above formula is applicable only when:

1) The hammer has an unrestricted fall.
2) The head of the pile is not broomed, crushed, or otherwise damaged.
3) The penetration is reasonably quick and uniform.
4) There is no detectable bounce of the hammer after the blow.
5) A follower is not used.
6) The required nominal driving resistance is less than 600 kips.

For piles driven on a batter, the nominal driving resistance, $R_{ndr,}$ will be multiplied by the hammer energy reduction coefficient "B" which will be determined as follows.

DRIVEN PILING BY METHOD A

$$B = \frac{0.1*(10-m)}{\sqrt{(1+m^2)}}$$

Where:

B = Hammer energy reduction coefficient, less than unity
m = Tangent of the angle of batter (i.e., m= 0.33 = 4/12 for 4H:12V batter)

For a test pile, the penetration per blow shall be measured during initial driving. For piling other than test piling, the penetration per blow shall be measured either during initial driving or during redriving. Redriving, when allowed, shall be with a warmed-up hammer operating at full energy after a pile set period, as determined by the Engineer. A warmed-up hammer is defined as a hammer that has applied at least 20 blows to another pile immediately before being used.

If hammer bounce is detected, twice the height of the bounce of the hammer shall be deducted from the height of fall of the ram (stroke).

When water jets are used in conjunction with the driving, the nominal driving resistance value shall be determined by the above formula based upon the measurement of penetration per blow made after the jets have been withdrawn.

The character of the soil penetrated; conditions of driving; distributions, sizes, lengths, and weights of piles driven; and the computed load on the pile shall also be considered in determining the nominal driving resistance.

(1) Test Piles. Test piles shall be driven with suitable pile driving equipment before other piles are ordered or driven. The FHWA Modified Gates Formula will be used to determine if the pile driving equipment is acceptable. To be considered acceptable, the proposed driving equipment shall be capable of obtaining the nominal driving resistance between the specified blow count range of 3 and 12 blows per 1 inch at the end of driving. Hammer pump settings shall be adjusted as necessary to maintain this range.

Test piles shall be driven until: 1) the required nominal driving resistance or greater, as determined by the above formula, has been obtained for the last 3 feet of driving; and 2) the top of the pile is at plan grade; but not to more than when 3) a hammer blow count of 20 blows per 1 inch has been obtained while the hammer is operating at the highest pump setting capable without damaging the test pile. In no case shall test piles be driven less than that specified in Subsection 805.08(e).

If the test pile has been driven to plan grade and has not satisfied conditions required to cease driving, the Engineer may direct the Contractor to excavate around a concrete pile to below plan grade to facilitate additional driving and testing to satisfy conditions required to cease driving. Steel piles shall be built-up and driving continued. The excavation or build-up and additional driving must be completed during the same day as the initial driving. The excavation will not be paid for separately, but full compensation therefor will be considered included in the contract unit price bid for Test Pile.

DRIVEN PILING BY METHOD A

If the conditions to cease driving on a concrete test pile are not obtained with the excavation and additional driving, or if additional excavation is not allowed by the Engineer, the pile will be an unsuccessful test pile, and the Engineer shall order a new longer test pile to be driven. The length and location of the new longer test pile shall be determined by the Engineer. The unsuccessful test pile shall be paid for at the contract unit price bid for Test Pile and shall be built-up and driven to meet the requirements for piling as specified in Subsection 805.09(a)(2). Payment for the build-up will be made at the unit price bid for Concrete Piling.

The new longer test pile will be paid for at the contract unit price bid for Test Pile. Payment for build-up of a successful test pile will be made at the contract unit price for Test Pile.

(2) Piling. When test piles are called for in the plans, the pile driving equipment used for the successful test piles shall be the same equipment used for the production piling. When no test piles are called for in the plans, the piles shall be driven with acceptable pile driving equipment. The FHWA Modified Gates Formula will be used to determine if the pile driving equipment is acceptable. To be considered acceptable, the proposed driving equipment shall be capable of obtaining the nominal driving resistance between the specified blow count range of 3 and 12 blows per 1 inch at the end of driving. Hammer pump settings shall be adjusted as necessary to maintain this range.

Except as noted herein, concrete piling shall be driven continuously until: 1) the required nominal driving resistance or greater, as determined by the above formula, has been obtained; and 2) the top of the concrete pile is at plan grade; but not to more than when 3) a hammer blow count of 20 blows per 1 inch has been obtained while the hammer is operating at the highest pump setting capable without damaging the concrete pile. In no case shall the concrete pile be driven less than that specified in Subsection 805.08(e). Except as noted herein, steel piling shall be driven continuously until: 1) the required nominal driving resistance or greater, as determined by the above formula, has been obtained; but not to more than when 2) a hammer blow count of 20 blows per 1 inch has been obtained while the hammer is operating at the highest pump setting capable without damaging the steel pile. If directed by the Engineer, the top of the steel pile shall be driven to plan grade. In no case shall the steel pile be driven less than that specified in Subsection 805.08(e).

If the required nominal driving resistance has not been obtained when the top of the pile is 6" above the plan grade, the pile shall be driven until one of the following conditions has been satisfied, as approved by the Engineer:

- Soil may be excavated from around the pile, if necessary, and the pile driven until the required nominal driving resistance has been obtained. Such excavation will not be paid for separately, but full compensation therefor will be considered included in the contract unit price bid for Steel Piling, Steel Shell Piling, or Concrete Piling.
- The pile shall be built-up in accordance with Subsection 805.11 and driven until the required nominal driving resistance has been obtained. Unless otherwise noted in the plans, measurement and payment for build-up will be in accordance with Subsections 805.14 and 805.15.

DRIVEN PILING BY METHOD A

- After a 24-hour waiting period, the pile shall be struck with 20 blows from a warmed-up hammer and the penetration measured to determine if the required nominal driving resistance has been obtained. A warmed-up hammer is defined as a hammer that has applied at least 20 blows to another pile immediately before being used.

  If this option is selected, initial driving shall cease when the top of the pile is 6" above the plan grade. An allowance of 3 linear feet of piling will be made for each pile struck with the warmed-up hammer in addition to the actual length of accepted pile in place.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

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

DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES

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 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:

DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES

(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.

DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES

TABLE 807-3
DIRECT TENSION INDICATOR REQUIREMENTS

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 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

DIRECT TENSION INDICATORS FOR HIGH STRENGTH BOLT ASSEMBLIES

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 ( )” and “Structural Steel in Beam Spans ( )”.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

SPECIAL SAFETY REQUIREMENTS FOR BRIDGES

Description. This specification covers special safety requirements during the construction of Bridge Nos. A7693 and B7693. These requirements are intended for the safety of both the traveling public and the workers. Any modifications must meet the approval of the Engineer.

Construction of New Bridge. (a) Erection of structural steel, placement and removal of safety platforms, painting and other activities deemed necessary by the Engineer on the spans over Hwy 162 **shall be limited to off peak traffic hours between 9:00 p.m. and 5:00 a.m. Monday through Saturday, or anytime on Sunday, but will not be permitted on legal holidays or weekends adjacent to these holidays.** During this time window, all traffic may be stopped for short intervals of time, not to exceed 15 minutes, in order that the above activities can progress without endangering the traveling public. Between closure periods the roadway must be opened for a 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 or situations.

(b) The Contractor shall notify the Resident 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 above listed roadway(s). Notification is required for each subsequent activity that will reduce the previous existing clearance. A minimum vertical clearance of 14'-0" must be maintained during all activities.

(c) The Contractor shall notify all local law enforcement and emergency agencies of closures or other activities that will affect normal flow of traffic on the above listed roadway(s) no less than three days before any such activities occur.

(d) Construction of bents and embankments shall be accomplished in such a manner that traffic is maintained on the highway as described above. Precast barriers shall be placed as shown on the roadway plans before work is performed. Sheet piling or other means shall be used to prevent embankment or excavated material from spilling onto the existing highway or to protect the shoulders from bent excavation. Excavation for footings and pouring of concrete shall be accomplished without construction equipment obstructing traffic.

Details of the shoring – 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 licensed in Arkansas.

The Contractor shall construct the shoring in accordance with the details submitted to the Engineer and the results obtained by the use of the shoring design are the Contractor’s responsibility.

SPECIAL SAFETY REQUIREMENTS FOR BRIDGES

(e) During the erection of the structural steel, permanent bents or sufficient falsework shall be provided for support of the steel beams. Highway traffic shall not be allowed to travel under a span while a piece of structural steel on that span is being moved into position or before a steel beam is securely supported by falsework or by a permanent bent. Equipment or materials of any kind shall not be hoisted over highway traffic.

Any falsework or construction equipment required for the erection of the structural steel, or for other activities, shall be protected by precast barriers as shown on Standard Drawing TC-4. The precast barriers may be located to close a shoulder as approved by the Engineer. Appropriate signs must be in place when a shoulder is closed.

(f) Immediately after erection of structural steel, a safety platform shall be constructed directly under the steel beams on the spans over the highway for the entire area of construction to protect traffic from falling objects. The Contractor must devise a method of support for the safety platform used under the deck outside the exterior beams. The safety platform outside the exterior beams shall be below and independent of the overhang brackets. The safety platform between the exterior beams shall be plywood sheets adequately supported on top of the bottom beam flange, or other method as submitted by the Contractor.

Details for the 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 by the use of 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) Permanent steel deck forms shall be used between beams in spans over the highway. Further requirements and details of permanent steel deck forms may be found on Standard Drawing No. 55005 and Subsection 802.14(b) of the Standard Specifications. Permanent steel deck forms will not be considered as part of the required safety platform.

(h) The epoxy tie coat may be applied before erection if the urethane coat can still be applied after erection but within the time interval recommended by the Manufacturer. The application of the urethane coat shall be deferred until adjoining concrete work has been placed and finished. If concreting operations damage the epoxy tie coat, the surface shall be recleaned and repainted. Spray painting will be permitted in applying the coat(s) of paint after erection to the spans over the highway during the work periods described above. The Contractor shall use tarps or similar curtains while spraying spans over the existing highway and when adjacent to traffic to prevent damage to highway traffic from drift. The Contractor shall assume all responsibility for any damage.

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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SHORING FOR CULVERTS

DESCRIPTION: Work under this item shall consist of the design, construction, and removal of a shoring or bracing system that may be required to retain the existing, temporary, or new roadway embankment and to maintain traffic during construction of culverts. The shoring system shall provide sufficient clearance for excavation and construction work and shall ensure the safety of the traveling public and workmen at all times.

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 a Professional Engineer registered in Arkansas.

The Contractor shall be responsible for the adequacy of the temporary 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 temporary shoring.

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.

PAYMENT: No direct payment will be made for work described in this special provision (which includes preparation of necessary design details and drawings, construction and removal of shoring, and for all materials, labor, tools, equipment, and incidentals necessary to complete the work) but shall be considered subsidiary to other pay items in the contract.

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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

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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	Project Status	Enter the estimated percent complete for each month based on the Baseline Schedule.
Actual % Complete (bi-monthly)		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	Revenue Status	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		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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ARCHEOLOGICAL MONITORING

Description. Archeological monitoring of a segment of this project is required by the State Historic Preservation Officer; therefore, the Contractor must hire a Secretary of Interior (SOI) qualified archeologist must be present during any construction activity (including the demolition of the house and construction of the new interstate) from Stations 608+93 to 615+89 Right and Stations 608+03 to 614+20 Left inside of the Right-of-Way on the north side of Waterfront Street and document the findings. Notification of these planned activities within the noted area must be sent two weeks prior to any construction activities through the Engineer to the email address EnvironmentalClearance@arkansashighways.com. A copy of the final monitoring report shall be submitted to the Engineer and the Environmental Division for review.

Construction Methods. The SOI archeologist should be present for any ground-disturbing activities, such as clearing and grubbing, stripping of topsoil, excavating below the existing grade, and demolition of the house. If burials or evidence of burials is encountered, the project will be halted, the county sheriff, coroner, and the Arkansas Historic Preservation program will be notified, and the procedures outlined in the Arkansas Burial Laws (Act 753 and Act 1533 [1991/1999]) and the Department's Section 106 Programmatic Agreement will be followed.

Contractor Compliance. Potential discoveries on the Right-of-Way will be addressed by Section 107.10(b) & (d)(1) of the Standard Specifications for Highway Construction, Edition of 2014. Refer to Section 104.02 (c) Differing Site Conditions for information related to potential changes in site conditions.

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 results of the Contractor's failure to comply with the notification required by this Special Provision. The Department will not be responsible for any delays or costs due to the Contractor's failure 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.

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DETAILS FOR SAFETY OF STREAM TRAFFIC

DESCRIPTION: This Special Provision applies to Frog Bayou Bridge and shall consist of the protection of streams with traffic from dangers that might result from its construction. It shall also consist of furnishing, installing, maintaining and removing temporary signs, warning lights and all other safety features. The Engineer will have final approval over all aspects of the stream traffic safety plan, materials, and associated details.

MATERIALS: Unless modified by this Special Provision, materials, construction, and maintenance of the signs shall conform to the requirements of Section 604 of the Standard Specifications and the General Notes on Standard Drawing TC-1. A black, direct applied, non-reflective border and legend shall be used on the background of the signs. This background shall consist of AASHTO M 268 Type V retroreflective sheeting. Legends shall utilize six-inch series "D" letters as shown in 'Standard Alphabets for Highway Signs' published by the Federal Highway Administration, U. S. Department of Transportation. Sign Detail A shall utilize four-inch series "D" letters.

The temporary signs shall be as shown in the Sign Details in this Special Provision.

Warning Lights shall be in accordance with the MUTCD, Type A Low Intensity Flashing Warning Lights.

CONSTRUCTION REQUIREMENTS: The Contractor shall submit a plan to the Engineer for approval that details the plans for protection of stream traffic. The Contractor shall take whatever steps necessary to warn or protect stream traffic from any dangers that might be encountered as a result of the construction of this project.

A portage route for stream traffic shall be established through the construction area before construction begins and maintained until the Engineer approves its closing. Materials or signs used to mark the portage route shall be made of retroreflective materials that will be easily visible at night when illuminated.

If the Engineer agrees that conditions are safe for stream traffic passage through the project area via the waterway, the portage route may be closed. If at any time the Engineer determines that conditions are unsafe for stream traffic to float through the project via the waterway, the Contractor shall reinstall and maintain the portage route.

Stream traffic shall be temporarily halted for short intervals of time, not to exceed 15 minutes or if and where directed by the Engineer, in order that potentially dangerous construction activities can be conducted without endangering the traveling public. When traffic is to be halted, the Contractor shall station personnel upstream of the construction area to direct stream traffic to stop until conditions are safe for travel.

Before any span(s) is signed and marked for a safe passage channel, a safety platform shall be constructed for the entire width of construction of that span(s). The safety platform shall be constructed to the extent necessary, if and where directed by the Engineer, to protect boats from falling objects. The Contractor must devise a method of support for the safety platform used under the deck outside the exterior girders of the bridge. The safety platforms between the exterior girders of the bridge shall be plywood sheets adequately supported on the top of the bottom girder flange or other method as submitted by the Contractor. The safety platforms outside the exteriors girders of the bridge shall be below and independent of the overhang brackets.

Details for platform construction, complete with dimensions, design calculation, 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

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registered in Arkansas. The Contractor shall construct the platform in accordance with the details submitted to the Engineer and the results obtained by the use of the platform design is the Contractor's responsibility. Boat traffic shall not be allowed under a portion of platform being installed or removed.

The Contractor shall install the signs as shown on Details A & B above normal floodwater elevations in a location clearly visible to stream traffic. The Contractor shall install the sign as shown on Detail C at the construction site when the portage route is open. The Contractor shall install the sign as shown in Detail D at the construction site when the float-through route is available. If and where directed by the Engineer, all signs shall be installed with warning lights to make them visible at night. The Contractor shall coordinate the location and method of installation of the signs with local canoe outfitters and the Engineer, with the Engineer having final approval.

Signs and warning lights shall be installed and maintained in good condition. The Contractor shall certify weekly to the Engineer that these devices in use have been inspected on at least a daily basis and that any devices failing to comply with the requirements set out herein were corrected. The certification shall contain, at a minimum, the following information:

- Date and time of inspection;
- Name of person performing the inspection;
- Any deficiencies found; and
- Measures taken to correct the deficiencies.

The work involved in performing the required inspections and furnishing the certification will not be paid for separately, but full compensation therefore will be considered included in the contract unit prices bid for other items of the Contract.

The Contractor shall install and remove the signs and warning lights when and as directed by the Engineer.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT: Signs will be measured and paid for in accordance with Section 604.

All Contractor costs incurred in complying with the placement of temporary warning lights to mark the safe passage channel and temporary warning lights on bridge piers, boats and other equipment will be subsidiary to Maintenance of Traffic.

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DETAILS FOR SAFETY OF STREAM TRAFFIC

SIGN DETAIL

Detail A
60” x 36”

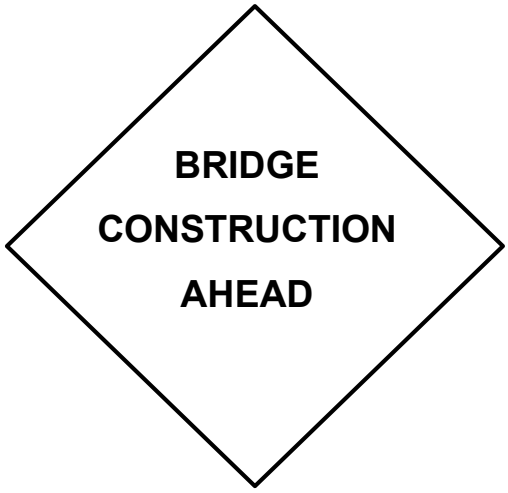
WARNING!
BRIDGE CONSTRUCTION
DOWNSTREAM

NOTE: ORANGE WITH BLACK LEGEND

NOT TO SCALE

SIGN DETAIL

Detail B
48” x 48”



NOTE: ORANGE WITH BLACK LEGEND

NOT TO SCALE

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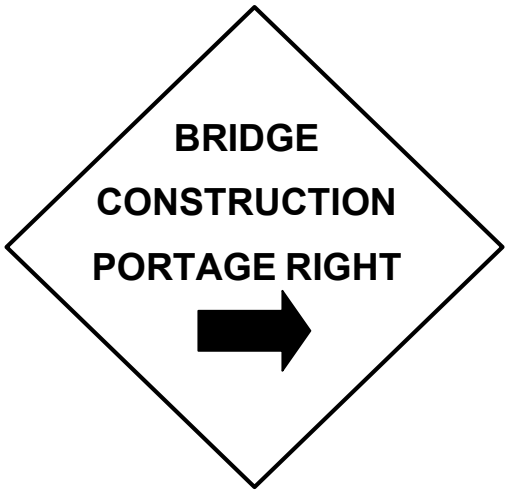
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DETAILS FOR SAFETY OF STREAM TRAFFIC

SIGN DETAIL

Detail C
48” x 48”



NOTE: ORANGE WITH BLACK LEGEND

NOT TO SCALE

SIGN DETAIL

Detail D
60” x 36”

WARNING!
STAY WITHIN
NAVIGATION CHANNEL

NOTE: ORANGE WITH BLACK LEGEND

NOT TO SCALE

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WATER POLLUTION CONTROL

Section 110 of the 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. 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:

- **Demolition of the existing bridge shall be accomplished in such a manner that turbidity and sedimentation are minimized. The method of demolition and removal shall be approved by the Engineer.**
- **No material shall be wasted or temporarily stockpiled in wetlands or where it can be eroded or washed into waters of the United States.**
- **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. 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 and other chemical products shall be located away from the stream channel 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 waterway, 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. Methods of removal that would contribute to increased turbidity, such as dredging, shall be avoided.**
- **Fording of streams shall not be allowed.**

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.

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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.

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SEQUENCE OF CONSTRUCTION - ALTERNATE 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

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 the Wednesday 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.

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SITE USE (A+B 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 only be used to determine the successful bidder. 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 B, shall consist of all items of work involving the I-40/I-49 Interchange including but not limited to the closure of the existing I-49 South Bound to I-40 East Bound ramp to traffic to the opening of the existing I-49 South Bound to I-40 East Bound ramp to normal traffic as well as the closure of the existing Collum Lane exit ramp to traffic to the opening of the existing Collum Lane exit ramp to normal traffic.

(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. Any day shown on the calendar including Saturdays, Sundays, and legal holidays, beginning and ending at midnight.

(d) Daily Road User Cost. The amount which represents the average daily cost of interference and inconvenience to the road user. The daily road user cost for this project is $ 35,000 .

(e) Substantially Complete. When the Specified Site Use Work requiring lane closure is completed and traffic is following the lane arrangement as shown on the plans for the finished roadway.

(f) 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 B.

(g) 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 B.

The product of the number of days established by the bidder for Part B multiplied by the daily road user cost of $ 35,000 per calendar day will be added to the contract amount bid. The sum will be the amount used for consideration of bids for award.

4. CONSIDERATION OF BIDS. Each bid submitted shall consist of two parts:

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(A) The Contract amount.

(B) Total number of calendar days proposed by the bidder to substantially complete the Specified Site Use Work.

The successful bid will then be determined by the Department as the lowest combination of (A) and (B) according to the following formula:

(A)+[(B) x (daily road user cost of $ 35,000)] = 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. One day will be assessed against the Bid Site Use Time for each calendar day or portion thereof that any lane in the area of the Specified Site Use Work is obstructed or closed under this contract, whether or not work is in progress.

Unless an emergency is declared, the Contractor shall not perform work that requires inspection on Sundays, legal holidays designated in subsection 101.01(c), 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. Site Use Time will be assessed on Sundays and holidays whether or not any work is performed.

Extensions of the Bid Site Use Time 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) If the dollar value of the Specified Site Use Work exceeds the dollar value for the plan quantities, the time will be extended in the same proportion.

(c) Change Orders affecting the work that results in additional time being required to complete the Specified Site Use Work.

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 $ 35,000 for each calendar day the Specified Site Use Work is substantially complete before

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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 days for which this payment will be made is 110 calendar 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 $ 35,000 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 moneys due or to become due the Contractor.

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 Specification are ***separate and in addition*** to the Daily Road User Cost assessed under this Special Provision.

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PERCENT WITHIN LIMITS

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

Subsection 410.09(b)(1) is deleted and the following substituted therefore:

> **Properties in Table 410-1.** Acceptance with respect to the properties listed in Table 410-1 will be by lot. Acceptance of a standard lot will be based on the Percent Within Limits (PWL). Acceptance of a sublot will be based on the results of the test(s) performed on samples from that sublot.
>
> In Table 410-1, the term "mix design value" refers to the value shown in the accepted mix design.

Percent Within Limits (PWL). The PWL analysis will only be performed on lots when 3 or more tests are performed on the lot. Acceptance of a partial lot with 2 or less tests performed on the lot will be based on the lot average of the actual number of tests made on that partial lot.

ACHM base, binder, or surface course used in temporary work that will not be incorporated into the final roadway, such as temporary shoulder widening, crossovers, and temporary ramps, will be declared a partial lot and acceptance will be based on Section 410 of the Standard Specifications.

The Percent Within Limits (PWL) will be based on the mean, standard deviation and quality index of each lot's test results. The PWL and Pay Factors (PF) for the lot will be calculated as described below. The upper PWL (PWL_U) and lower PWL (PWL_L) are determined from the Table 410-2. Variables used in the calculations are as follows:

x_i = individual test value (sublot)
x_a = arithmetic mean of the individual test values
n = number of tests (sublots)
s = sample standard deviation
Q_U = upper quality index
USL = upper compliance limit (from Table 410-1)
Q_L = lower quality index
LSL = lower compliance limit (from Table 410-1)

(1) Calculate the arithmetic mean (x_a) of the test values:

$$x_a = (\Sigma x_i)/n$$

(2) Calculate the sample standard deviation(s):

$$s = [\Sigma((x_i - x_a)^2/(n - 1))]^{1/2}$$

(3) Calculate the upper quality index (Q_U):

$$Q_U = (USL - x_a)/s$$

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(4) Calculate the lower quality index (Q_L):

$$Q_L = (x_a - LSL)/s$$

(5) From Table 410-2, use Q_U to determine the upper PWL (PWL_U).

(6) From Table 410-2, use Q_L to determine the lower PWL (PWL_L).

(7) If Q_U or Q_L is a negative number, then calculate the percent within limits for Q_U or Q_L as follows: enter Table 410-2 with the positive value of Q_U or Q_L and obtain the corresponding percent within limits for the proper sample size. Subtract this number from 100.00. The resulting number is the value to be used in the next step (Step 8) for the calculation of quality level.

(8) Calculate the total percent within limits:

$$PWL = (PWLU + PWLL) - 100$$

(9) Calculate the Pay Factor (PF) for each property. Pay Factors will be calculated by using the following equation:

$$PF = 55 + 0.5 \times PWL$$

(10) Calculate the Total Pay Factor (PF_T) for the lot. The PF_T will be calculated based on the individual Pay Factors (PF) with the following weighting applied: 20 percent asphalt binder content (PAB), 35 percent air voids (PAV), 10 percent voids in mineral aggregate (VMA), and 35 percent density (PC). Calculate the PF_T by using the following formula, where the PF for each property is determined in Step (9):

$$PF_T = (0.20)\, PF_{PAB} + (0.35)\, PF_{PAV} + (0.10)\, PF_{VMA} + (0.35)\, PF_{PC}$$

All lots of material with a PF_T less than 80.00 shall be removed and replaced with acceptable material by the contractor at no cost to the Department. Payment for sections where removal and replacement is required will be withheld or recovered, and released after replacement has been acceptably completed. The quantity for payment will be the original quantity and measurement of the quantity used in replacement operations will not be considered. Sampling and testing of the replacement material will be according to Subsection 410.09(a). Acceptance of the replacement material will be determined using the acceptance criteria for Partial lots with two (2) or less tests as outlined below.

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For any single property except density, if the result of the single test in a sublot falls outside the limits shown as “Sublot Rejection Limits”, that sublot shall be removed and replaced at no cost to the Department. In the sublot containing the Department’s lot test, if the result of either the Contractor’s sublot test or the Department’s lot test fall outside the sublot rejection limits, the two tests will be averaged and the average of the two test results used to determine acceptance or rejection of the sublot. Sampling and testing of the replacement material will be according to Subsection 410.09(a). Acceptance of the replacement material will be determined using the acceptance criteria for Partial lots with two (2) or less tests as outlined below.

For density, if a test for a sublot is more than 2.0 percentage points above or below the compliance limits for the type of mix, that sublot will be further evaluated as follows:

> Two additional density tests will be performed by the Department on a statistically random basis within that sublot, except that only one additional test will be performed if the sublot contains both a Contractor sublot test and a Department lot test. If the average of the three tests is within 2.0 percentage points above or below the compliance limits, the sublot will be accepted. The average of the three test results will be used as a single value to compute the arithmetic mean of the test values for the lot for the PWL calculations.

If the average is outside the sublot rejection limits, the sublot shall be removed and replaced at no cost to the Department. Sampling and testing of the replacement material will be according to Subsection 410.09(a). Acceptance of the replacement material will be determined using the acceptance criteria for Partial lots with two (2) or less tests as outlined below.

Partial lots with two (2) or less tests. Acceptance of a partial lot will be based on the average of the actual number of tests made on that partial lot.

When the average of the test results for a partial lot fall within the range shown in Table 410-1 as “Compliance Limits”, the partial lot will be accepted with no price reduction for those properties. If the average of the test results for a partial lot for any single property listed in the table falls within the limits shown as “Price Reduction Limits”, the material may be left in place at a reduced price as specified in Subsection 410.09(d). If the average of the test results for a partial lot for any single property listed in the table falls outside the limits shows as “Lot Rejection Limits”, the entire partial lot shall be removed and replaced at no cost to the Department. Sampling and testing of the replacement material will be according to Subsection 410.09(a).

For any single property except density, if the result of the single test in a sublot falls outside the limits shown as “Sublot Rejection Limits”, that sublot shall be removed and replaced at no cost to the Department. In the sublot containing the Department’s lot test, if the result of either the Contractor’s sublot test or the Department’s lot test fall outside the sublot rejection limits, the two tests will be averaged and the average of the two test results used to determine acceptance or rejection of the sublot. The average of the two test results will also be used as a single value to compute the average for the partial lot for acceptance and adjustment.
For density, if a test for a sublot is more than 2.0 percentage points above or below the specification limits for the type of mix, that sublot will be further evaluated as follows:

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Two additional density tests will be performed by the Department on a statistically random basis within that sublot, except that only one additional test will be performed if the sublot contains both a Contractor sublot test and a Department lot test. If the average of the three tests is within 2.0 percentage points above or below the compliance limits, the sublot will be accepted. The average of the three test results will be used as a single value to compute the average for acceptance and adjustment of the partial lot.

If the average is outside the sublot rejection limits, the sublot shall be removed and replaced at no cost to the Department. In that case, the result of a density test performed on the replacement material will be used to calculate the average for acceptance and adjustment of the partial lot.

Subsection 410.09(d) is amended as follows:

Price adjustments on lots accepted based on Percent Within Limits (PWL) will be calculated as part of the Total Pay Factor (PF_T).

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PERCENT WITHIN LIMITS

Table 410-2
Percent Within Limits

Quality Index	PWL for Selected Sample Size		
	n = 3	n = 4	n = 5
0.00	50.00	50.00	50.00
0.01	50.28	50.33	50.36
0.02	50.55	50.67	50.71
0.03	50.83	51.00	51.07
0.04	51.10	51.33	51.42
0.05	51.38	51.67	51.78
0.06	51.65	52.00	52.13
0.07	51.93	52.33	52.49
0.08	52.21	52.67	52.85
0.09	52.48	53.00	53.20
0.10	52.76	53.33	53.56
0.11	53.04	53.67	53.91
0.12	53.31	54.00	54.27
0.13	53.59	54.33	54.62
0.14	53.87	54.67	54.98
0.15	54.15	55.00	55.33
0.16	54.42	55.33	55.69
0.17	54.70	55.67	56.04
0.18	54.98	56.00	56.40
0.19	55.26	56.33	56.75
0.20	55.54	56.67	57.10
0.21	55.82	57.00	57.46
0.22	56.10	57.33	57.81
0.23	56.38	57.67	58.16
0.24	56.66	58.00	58.52
0.25	56.95	58.33	58.87
0.26	57.23	58.67	59.22
0.27	57.51	59.00	59.57
0.28	57.80	59.33	59.92
0.29	58.08	59.67	60.28
0.30	58.37	60.00	60.63
0.31	58.65	60.33	60.98
0.32	58.94	60.67	61.33
0.33	59.23	61.00	61.68
0.34	59.51	61.33	62.03
0.35	59.80	61.67	62.38
0.36	60.09	62.00	62.72
0.37	60.38	62.33	63.07

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Table 410-2
Percent Within Limits

Quality Index	PWL for Selected Sample Size		
	n = 3	n = 4	n = 5
0.38	60.67	62.67	63.42
0.39	60.97	63.00	63.77
0.40	61.26	63.33	64.12
0.41	61.55	63.67	64.46
0.42	61.85	64.00	64.81
0.43	62.15	64.33	65.15
0.44	62.44	64.67	65.50
0.45	62.74	65.00	65.84
0.46	63.04	65.33	66.19
0.47	63.34	65.67	66.53
0.48	63.65	66.00	66.88
0.49	63.95	66.33	67.22
0.50	64.25	66.67	67.56
0.51	64.56	67.00	67.90
0.52	64.87	67.33	68.24
0.53	65.18	67.67	68.58
0.54	65.49	68.00	68.92
0.55	65.80	68.33	69.26
0.56	66.12	68.67	69.60
0.57	66.43	69.00	69.94
0.58	66.75	69.33	70.27
0.59	67.07	69.67	70.61
0.60	67.39	70.00	70.95
0.61	67.72	70.33	71.28
0.62	68.04	70.67	71.61
0.63	68.37	71.00	71.95
0.64	68.70	71.33	72.28
0.65	69.03	71.67	72.61
0.66	69.37	72.00	72.94
0.67	69.70	72.33	73.27
0.68	70.04	72.67	73.60
0.69	70.39	73.00	73.93
0.70	70.73	73.33	74.26
0.71	71.08	73.67	74.59
0.72	71.43	74.00	74.91
0.73	71.78	74.33	75.24
0.74	72.14	74.67	75.56
0.75	72.50	75.00	75.89
0.76	72.87	75.33	76.21

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Table 410-2
Percent Within Limits

Quality Index	PWL for Selected Sample Size		
	n = 3	n = 4	n = 5
0.77	73.24	75.67	76.53
0.78	73.61	76.00	76.85
0.79	73.98	76.33	77.17
0.80	74.36	76.67	77.49
0.81	74.75	77.00	77.81
0.82	75.14	77.33	78.13
0.83	75.53	77.67	78.44
0.84	75.93	78.00	78.76
0.85	76.33	78.33	79.07
0.86	76.74	78.67	79.38
0.87	77.16	79.00	79.69
0.88	77.58	79.33	80.00
0.89	78.01	79.67	80.31
0.90	78.45	80.00	80.62
0.91	78.89	80.33	80.93
0.92	79.34	80.67	81.23
0.93	79.81	81.00	81.54
0.94	80.27	81.33	81.84
0.95	80.75	81.67	82.14
0.96	81.25	82.00	82.45
0.97	81.75	82.33	82.75
0.98	82.26	82.67	83.04
0.99	82.79	83.00	83.34
1.00	83.33	83.33	83.64
1.01	83.89	83.67	83.93
1.02	84.47	84.00	84.22
1.03	85.07	84.33	84.52
1.04	85.69	84.67	84.81
1.05	86.34	85.00	85.09
1.06	87.02	85.33	85.38
1.07	87.73	85.67	85.67
1.08	88.49	86.00	85.95
1.09	89.29	86.33	86.24
1.10	90.16	86.67	86.52
1.11	91.11	87.00	86.80
1.12	92.18	87.33	87.07
1.13	93.40	87.67	87.35
1.14	94.92	88.00	87.63
1.15	97.13	88.33	87.90

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Table 410-2
Percent Within Limits

Quality Index	PWL for Selected Sample Size		
	n = 3	n = 4	n = 5
1.16	100.00	88.67	88.17
1.17	100.00	89.00	88.44
1.18	100.00	89.33	88.71
1.19	100.00	89.67	88.98
1.20	100.00	90.00	89.24
1.21	100.00	90.33	89.50
1.22	100.00	90.67	89.77
1.23	100.00	91.00	90.03
1.24	100.00	91.33	90.28
1.25	100.00	91.67	90.54
1.26	100.00	92.00	90.79
1.27	100.00	92.33	91.04
1.28	100.00	92.67	91.29
1.29	100.00	93.00	91.54
1.30	100.00	93.33	91.79
1.31	100.00	93.67	92.03
1.32	100.00	94.00	92.27
1.33	100.00	94.33	92.51
1.34	100.00	94.67	92.75
1.35	100.00	95.00	92.98
1.36	100.00	95.33	93.21
1.37	100.00	95.67	93.44
1.38	100.00	96.00	93.67
1.39	100.00	96.33	93.90
1.40	100.00	96.67	94.12
1.41	100.00	97.00	94.34
1.42	100.00	97.33	94.56
1.43	100.00	97.67	94.77
1.44	100.00	98.00	94.98
1.45	100.00	98.33	95.19
1.46	100.00	98.67	95.40
1.47	100.00	99.00	95.61
1.48	100.00	99.33	95.81
1.49	100.00	99.67	96.01
1.50	100.00	100.00	96.20
1.51	100.00	100.00	96.39
1.52	100.00	100.00	96.58
1.53	100.00	100.00	96.77
1.54	100.00	100.00	96.95

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Table 410-2
Percent Within Limits

Quality Index	PWL for Selected Sample Size		
	n = 3	n = 4	n = 5
1.55	100.00	100.00	97.13
1.56	100.00	100.00	97.31
1.57	100.00	100.00	97.48
1.58	100.00	100.00	97.65
1.59	100.00	100.00	97.81
1.60	100.00	100.00	97.97
1.61	100.00	100.00	98.13
1.62	100.00	100.00	98.28
1.63	100.00	100.00	98.43
1.64	100.00	100.00	98.58
1.65	100.00	100.00	98.72
1.66	100.00	100.00	98.85
1.67	100.00	100.00	98.98
1.68	100.00	100.00	99.11
1.69	100.00	100.00	99.23
1.70	100.00	100.00	99.34
1.71	100.00	100.00	99.45
1.72	100.00	100.00	99.55
1.73	100.00	100.00	99.64
1.74	100.00	100.00	99.73
1.75	100.00	100.00	99.81
1.76	100.00	100.00	99.88
1.77	100.00	100.00	99.94
1.78	100.00	100.00	99.98
1.79	100.00	100.00	100.00
1.80	100.00	100.00	100.00
1.81	100.00	100.00	100.00
1.82	100.00	100.00	100.00
1.83	100.00	100.00	100.00
1.84	100.00	100.00	100.00
1.85	100.00	100.00	100.00
1.86	100.00	100.00	100.00
1.87	100.00	100.00	100.00
1.88	100.00	100.00	100.00
1.89	100.00	100.00	100.00
1.90	100.00	100.00	100.00
1.91	100.00	100.00	100.00
1.92	100.00	100.00	100.00
1.93	100.00	100.00	100.00

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Table 410-2
Percent Within Limits

Quality Index	PWL for Selected Sample Size		
	n = 3	n = 4	n = 5
1.94	100.00	100.00	100.00
1.95	100.00	100.00	100.00
1.96	100.00	100.00	100.00
1.97	100.00	100.00	100.00
1.98	100.00	100.00	100.00
1.99	100.00	100.00	100.00
2.00	100.00	100.00	100.00
2.01	100.00	100.00	100.00
2.02	100.00	100.00	100.00
2.03	100.00	100.00	100.00
2.04	100.00	100.00	100.00
2.05	100.00	100.00	100.00
2.06	100.00	100.00	100.00
2.07	100.00	100.00	100.00
2.08	100.00	100.00	100.00
2.09	100.00	100.00	100.00
2.10	100.00	100.00	100.00
2.11	100.00	100.00	100.00
2.12	100.00	100.00	100.00
2.13	100.00	100.00	100.00
2.14	100.00	100.00	100.00
2.15	100.00	100.00	100.00
2.16	100.00	100.00	100.00
2.17	100.00	100.00	100.00
2.18	100.00	100.00	100.00
2.19	100.00	100.00	100.00
2.20	100.00	100.00	100.00
2.21	100.00	100.00	100.00
2.22	100.00	100.00	100.00
2.23	100.00	100.00	100.00
2.24	100.00	100.00	100.00
2.25	100.00	100.00	100.00
2.26	100.00	100.00	100.00
2.27	100.00	100.00	100.00
2.28	100.00	100.00	100.00
2.29	100.00	100.00	100.00
2.30	100.00	100.00	100.00
2.31	100.00	100.00	100.00
2.32	100.00	100.00	100.00

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

PERCENT WITHIN LIMITS

Table 410-2
Percent Within Limits

Quality Index	PWL for Selected Sample Size		
	n = 3	n = 4	n = 5
2.33	100.00	100.00	100.00
2.34	100.00	100.00	100.00
2.35	100.00	100.00	100.00
2.36	100.00	100.00	100.00
2.37	100.00	100.00	100.00
2.38	100.00	100.00	100.00
2.39	100.00	100.00	100.00
2.40	100.00	100.00	100.00
2.41	100.00	100.00	100.00
2.42	100.00	100.00	100.00
2.43	100.00	100.00	100.00
2.44	100.00	100.00	100.00
2.45	100.00	100.00	100.00
2.46	100.00	100.00	100.00
2.47	100.00	100.00	100.00
2.48	100.00	100.00	100.00
2.49	100.00	100.00	100.00
2.50	100.00	100.00	100.00
2.51	100.00	100.00	100.00
2.52	100.00	100.00	100.00
2.53	100.00	100.00	100.00
2.54	100.00	100.00	100.00
2.55	100.00	100.00	100.00
2.56	100.00	100.00	100.00
2.57	100.00	100.00	100.00
2.58	100.00	100.00	100.00
2.59	100.00	100.00	100.00
2.60	100.00	100.00	100.00
2.61	100.00	100.00	100.00
2.62	100.00	100.00	100.00
2.63	100.00	100.00	100.00
2.64	100.00	100.00	100.00
2.65	100.00	100.00	100.00

ARKANSAS DEPARTMENT OF TRANSPORTATION

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CONSTRUCTION DELAY DUE TO ARCHEOLOGICAL MITIGATION

All earth-disturbing activities in or adjacent to the right-of-way from Stations 620+00 to 629+00, 645+00 to 651+00, and 653+00 to 662+00 may be delayed until December 31, 2027, to allow for the completion of archeological investigations in the area.

The Contractor shall not be allowed to perform earth-disturbing activities within this area until use of the area has, in fact, been extended to the Contractor in writing by the Engineer.

If there is a delay in allowing use of the area beyond December 31, 2027 that affects 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.

BASIS OF PAYMENT: There will be no direct payment made for fulfilling the requirements of this Special Provision, but compensation shall be included in the price bid for the various contract items.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

INSURANCE, CONSTRUCTION, AND FLAGGING REQUIREMENTS ON RAILROAD PROPERTY (UPRR)

GENERAL

The requirements of this Special Provision are intended to perform earthwork and embankment activities near Union Pacific Railroad Company right-of-way for future Interstate 49 (New DOT# 980098J, Van Buren Subdivision, Railroad Mile Post 490.37) in Crawford County, Arkansas. These requirements are in addition to construction details shown on the Plans or called for elsewhere in the project documents.

This Special Provision applies to a portion of the construction activities on this project and supplements the Plans. The Contractor shall execute the Contractor Endorsement with the Railroad (RR). Before beginning any work on the Railroad's right-of-way (ROW), the Contractor shall provide a copy of the Contractor Endorsement to the Public Projects Manager at the email below. The contractor shall also complete the Union Pacific Property Access Training (UP-PAT) prior to any work being performed in the railroad right of way. This can be completed at the following link, www.up.com/up-pat. Please note, all employees working within the RR ROW will be required to complete the Property Access Training.

The Union Pacific Railroad Coordination Requirements and the Contractor's Right of Entry Agreement are intended to be complementary and to describe and provide for a complete work on the Railroad Property. In case of discrepancy, the requirements in this provision will govern over the requirements in the Union Pacific Railroad Coordination Requirements and the Contractor's Right of Entry Agreement.

INSURANCE

For Insurance requirements, contact Leo Craig, Associate Project Manager/Rail, (817) 901-9560, lcraig@olsson.com.

CONSTRUCTION

In addition to the requirements in the Union Pacific Railroad Coordination Requirements and the Contractor's Right of Entry Agreement, the Contractor shall:

1. Determine if fiber optic cable systems are buried on the Railroad’s property by visiting www.up.com/CBUD to complete and submit the required form. If any fiber optics exists, the Contractor shall telephone the company(ies) involved, arrange for a locator, and make arrangements for protection of the fiber optic cable or other utilities prior to beginning any work on the Railroad's right-of-way.

2. Furnish to the Public Projects Manager for informational and record purposes a copy of all plans approved by the Union Pacific Railroad. The Contractor shall perform all work in accordance with the approved plans.

ARKANSAS DEPARTMENT OF TRANSPORTATION

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JOB NO. 040904

INSURANCE, CONSTRUCTION, AND FLAGGING REQUIREMENTS ON RAILROAD PROPERTY (UPRR)

3. Construct any necessary safety platforms in accordance with the details approved by the Union Pacific Railroad. The Contractor shall be responsible for the results obtained by the use of the platform design.

4. Notify in writing the Railroad's Project Manager within ten (10) days of Notice of Awarding of a job requiring any work on the Railroad's premises or any work that will be undertaken within twenty-five (25) feet of the Railroad's tracks. The Public Project Manager for this job will be:

   Leo Craig – Associate Project Manager/Rail
   Email: lcraig@olsson.com
   Cell: (817) 901-9560

5. Notify in writing the Railroad's Director of Track Maintenance, at least ten (10) days in advance of starting any work on the Railroad's premises and at least thirty (30) days in advance of any work that will be undertaken within twenty-five (25) feet of the Railroad's tracks. Contact information will be provided at the pre-construction meeting.

   Brian Shields – Director of Track Maintenance
   Union Pacific Railroad
   Email: bwshields@up.com
   Phone: (501) 373-2027

6. If hydrodemolition is required, the Contractor is responsible for providing falsework plans to UPRR for review and approval Plans for any demolition of any structure must be approved by the Railroad prior to the commencement of any demolition work.

7. Plans for temporary haul roads or other access to Project construction sites that cross over or under Union Pacific Railroad right-of-way must be submitted to and approved by the Railroad prior to their construction.

RAILROAD SERVICES DURING CONSTRUCTION

The Railroad or their approved contractor will be providing services which may include design review and approval of falsework, shoring, and other plans submitted by the ARDOT Contractor. Additionally, the Railroad or their approved contractor may provide inspection services and other project oversight along with other work which the Railroad deems necessary for protection of Railroad property and operation as a result of the Contractor's operations under this Contract. **These services will be billed directly by the Railroad to the State.**

For flagging and other services provided by the Railroad or their Contractor, the ARDOT Contractor is responsible for payment of the flagging and other services costs. **The ARDOT Contractor is obligated to reimburse the Railroad for the cost of these services within the**

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

INSURANCE, CONSTRUCTION, AND FLAGGING REQUIREMENTS ON RAILROAD PROPERTY (UPRR)

time frame established in the Contractor's Right of Entry Agreement. These costs shall be billed directly by the Railroad to the Contractor.

Railroad employee's wage rates are subject to change at any time, by the law or by agreement between the Railroad and its employees and may be retroactive as a result of negotiations or a ruling of an authorized Governmental Agency. Additional charges on labor are also subject to change. If the wage rates or additional charges are changed, the Contractor shall pay the new rates and charges.

The bidder shall make their own estimate of the costs associated with Railroad services. The Railroad's current estimate for flagging services is $1,500 for an eight-hour day; overtime rates may be applicable. This flagging estimate may change without notice.

Should the Contractor not pay the Railroad for their services, the Contractor's Payment Bond shall apply to this debt in addition to the other debts incurred by the Contractor associated with this Contract. **If the Railroad elects to bar the Contractor from entering onto Railroad property due to overdue debts with the Railroad, the assessment of Contract Time will continue and no claim for an extension of Contract Time will be considered**.

PAYMENT

The cost of working on Railroad Property including, but not limited to, the cost of providing insurance and the cost of design review of plans for temporary work, the cost of flagging services, the cost of the site inspection by the railroad, and the cost to meet other requirements contained in this Special Provision, shall not constitute a separate pay item under this Contract or be paid for directly but shall be considered to be subsidiary work pertaining to the various items of the Contract.

NOTICE TO BIDDING CONTRACTOR

For specific crossing data, please enter the DOT# highlighted below at the FRA website https://safetydata.fra.dot.gov/officeofsafety/publicsite/crossing/crossing.aspx.

For more information on UPRR requirements for public projects go to https://www.up.com/aboutup/re/index.htm website for public projects manual.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040904

CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS

GENERAL: This special provision limits the temporary construction operations in Special Flood Hazard Areas (SFHA) as required by the National Flood Insurance Program (NFIP).

Temporary construction operations include all work and material necessary to access and construct the permanent bridge(s) and roadway embankment within the SFHA. These operations may include work ramps, haul roads, temporary crossings, detour roads, levees, diversion channels, retaining walls, cofferdams, forms, storage of materials, storage of large equipment, and other related work.

This project crosses a regulatory floodway, regulatory floodplain, or SFHA as shown on the Community's Flood Insurance Rate Map published by FEMA. The regulatory floodway, regulatory floodplain, or SFHA limits are shown on the project plan and profile drawings.

The project is designed to comply with the NFIP's regulations set forth in Title 44, Chapter 1, Parts 59-77, of the U.S. Code of Federal Regulations (CFR).

The following special conditions must be complied with:

- Temporary operations are to be used during the low flow season when possible.

- The conceptual work plan (CWP), included in this Special Provision, for temporary operations in a regulatory floodway provide for no increase in the NFIP's published flood levels within the community during the occurrence of the 100-year flood discharge.

- The conceptual work plan (CWP) for temporary operations in a regulatory floodplain provide for up to a one foot increase in the NFIP's published flood levels within the community during the occurrence of the 100-year flood discharge.

- The conceptual work plan (CWP) for temporary operations in a SFHA provide for up to a one foot increase in the designed flood levels within the community during the occurrence of the 100-year flood discharge.

- Temporary operations shall not obstruct an existing or proposed bridge(s) waterway opening more than what is shown on the CWP.

- Any changes in the CWP that will increase flood levels shall be approved in accordance with the "Modifications to Conceptual Plan" section of this Special Provision.

- All temporary operations shall meet the requirements of the Corps of Engineers' Section 404 Permit issued for this project.

- All temporary fills and temporary obstructions to the existing or proposed bridge(s) or culvert(s) must be removed in their entirety and the affected areas returned to their pre-construction or designed elevation and condition.

ARKANSAS DEPARTMENT OF TRANSPORTATION

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CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS

- The contractor is responsible for preventing equipment and materials within the floodplain from becoming buoyant and floating downstream during a significant flood event. In the event this flood starts to occur, the contractor shall remove and/or anchor materials and equipment by means approved by the Engineer at the Preconstruction Conference.

MODIFICATIONS TO CONCEPTUAL WORK PLAN: If the Contractor prefers another conceptual work plan, a request shall be submitted to the Engineer outlining the specifics of the proposed modifications. The modifications should consider the minimization of reduction of waterway opening in the floodplain as a primary objective.

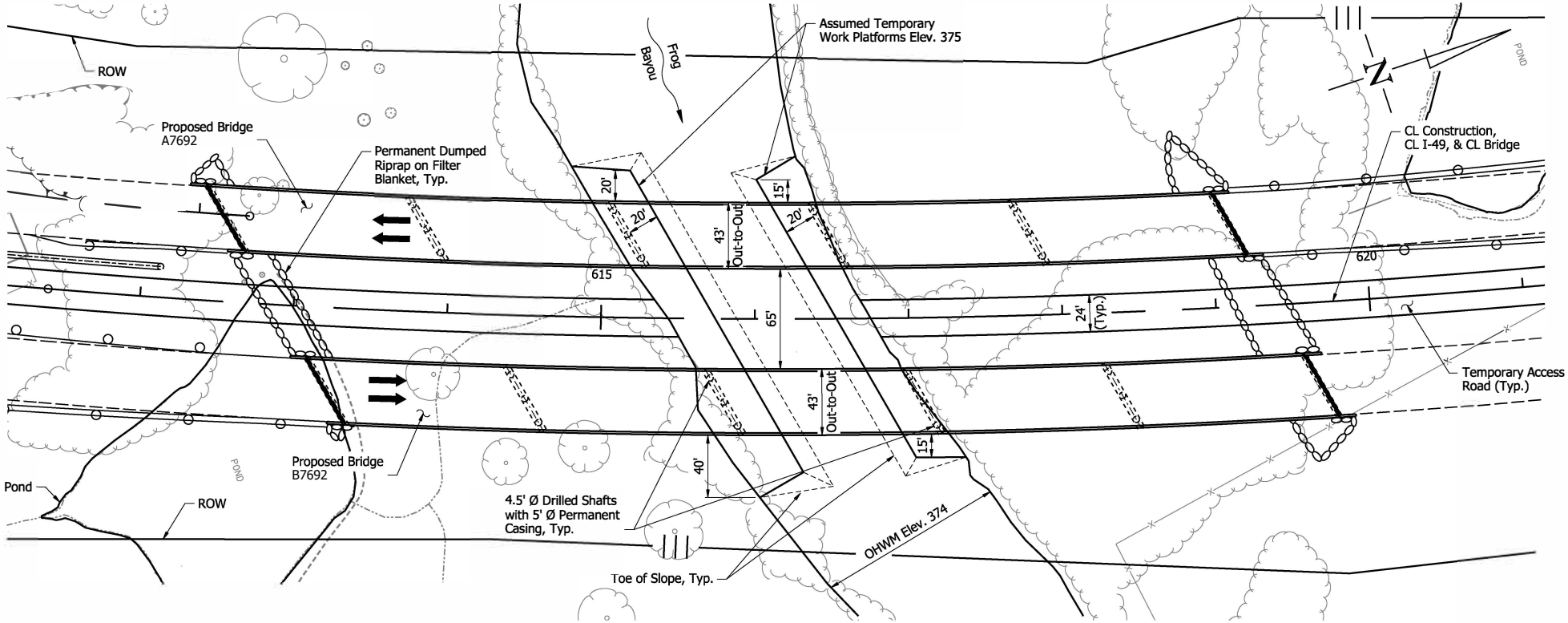
A determination will be made by the Engineer within ten (10) business days concerning the necessity or practicability of the request. If approved, the modifications will be reviewed by the Department's Hydraulics Section. The Hydraulics Section will approve or deny the request within ten (10) business days after receiving the request.

Modifications to the Plan that also change the volume of temporary fill in place at any one time may require a modification of the Section 404 Permit which will require additional time for review by the Corps of Engineers. Refer to the 404 Permit for these requirements.

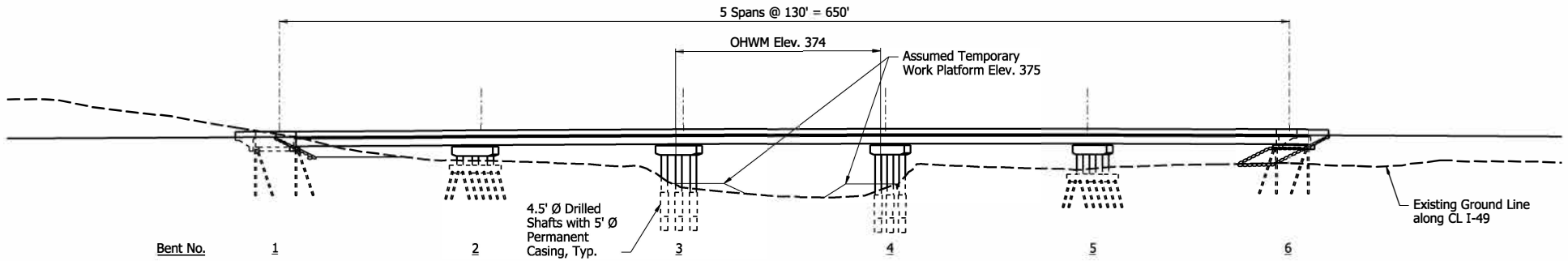
The contract time will not be extended for the time required to consider or approve any modifications. Any additional work or expenses incurred preparing, submitting, or completing an alternate conceptual work plan shall be at no additional cost to the Department.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT: All work, including labor, materials, tools, and equipment necessary to complete the requirements of this special provision shall not be paid for directly, but will be considered subsidiary to other items in the contract.

Temporary Construction Impacts



PLAN



ELEVATION

100 50 0 100
SCALE IN FEET

Type of Activity	Location	Amount
Temporary Fill (Work Platform)	Frog Bayou Stations 615+00 – 616+55	0.433 acre 2,794.3 yd^3 (below OHWM elevation 374 ft msl)

HNTB

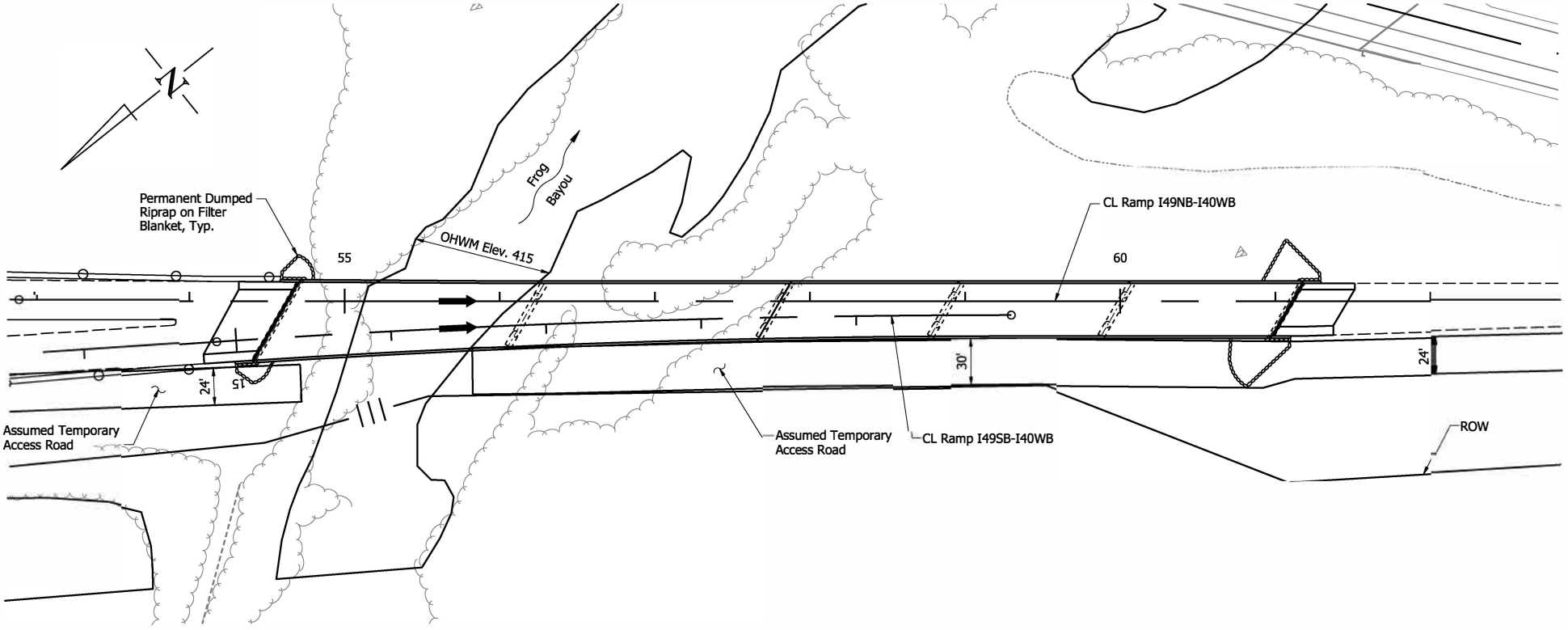
PROPOSED BRIDGES A7692 & B7692
INTERSTATE 49 OVER FROG BAYOU
NEAR BARLING, ARKANSAS (CRAWFORD COUNTY)

ARKANSAS DEPARTMENT OF TRANSPORTATION

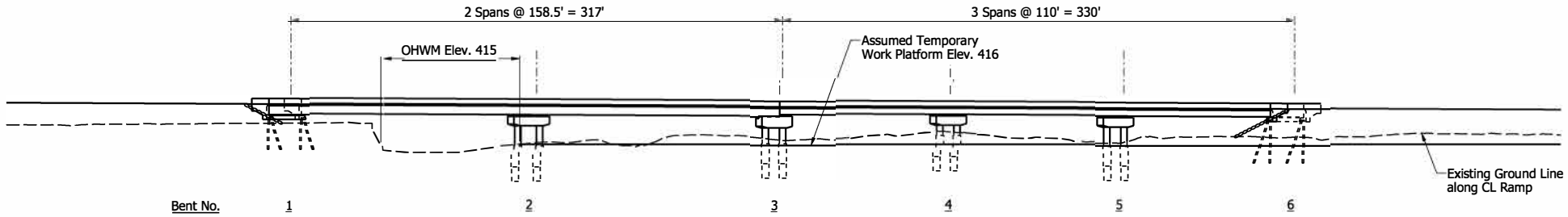
SHEET 1 OF 1 JUNE 2023

PRINT DATE: 8/24/2023

Temporary Construction Impacts



PLAN



ELEVATION

100 50 0 100
SCALE IN FEET

Type of Activity	Location	Amount
Temporary Fill (Work Platform)	Frog Bayou Stations 55+00 – 55+60	0.093 acre 600.2 yd^3 (below OHWM elevation 415 ft msl)

HNTB

PRINT DATE: 8/24/2023

PROPOSED BRIDGE 07694
INTERSTATE 49 OVER FROG BAYOU
NEAR BARLING, ARKANSAS (CRAWFORD COUNTY)

ARKANSAS DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 1 JUNE 2023

ARKANSAS DEPARTMENT OF TRANSPORTATION

JOB NO. 040904

STORM WATER POLLUTION PREVENTION PLAN

National Pollution Discharge Elimination System
General Permit # ARR150000

Prepared for:

ARKANSAS DEPARTMENT OF TRANSPORTATION

Date: July 30, 2026

GENERAL INFORMATION:

A Storm Water Pollution Prevention Plan (SWPPP) has been developed by the ARDOT for this construction project in accordance with good engineering practice. Various items constitute the SWPPP for the project and should be provided for persons requesting to view the SWPPP, including:

a) *The ARDOT Standard Specifications for Highway Construction, 2014 Edition,* (Standard Specifications). The following sections are in reference to water quality or sediment and erosion control: Sections 107, 110, 620, 621, 622, 623, 624, 626, and other sections pertaining to storm water controls.

b) The Construction Plans contain temporary and permanent erosion controls and permanent storm water management measures.

c) Contract documents provide the Contractor and ARDOT with additional specifications. These may include Supplemental Specifications and Special Provisions. Parts of the SWPPP that may be in the Contract include this Special Provision, *Storm Water Pollution Prevention Plan*.

d) Project records including SWPPP inspection reports, the authorized Site Manager daily work report, and various pay quantity documentation, all of which detail the progression of work on the project, when erosion control measures were taken, when the Contractor was given instructions to install or maintain the erosion and sediment control (E&SC) items, and the timing and details of E&SC installation. The Contractor identification form and the Inspector identification form are included as part of the project records.

e) Construction site posting.
   i. For large construction sites (all sites five acres or above) – The first page of the *e-Portal* DEQ Notice of Intent (NOI) submission, if ten business days have passed since the NOI was deemed complete, to be replaced by the completed Arkansas Division of Environmental Quality (DEQ) Authorization Letter to Discharge Storm Water when it is sent by DEQ.
   ii. For small construction sites under five acres (automatic coverage sites) - the completed DEQ Notice of Coverage for small sites from the DEQ website.

PROJECT NAME AND LOCATION:

040904, Clear Creek Rd. – I-40 (Phase 1) (F)

ARKANSAS DEPARTMENT OF TRANSPORTATION

JOB NO. 040904

STORM WATER POLLUTION PREVENTION PLAN

OPERATOR NAME AND ADDRESS:
Arkansas Department of Transportation

Name of District Engineer Jason Hughey

Address of District Headquarters
808 Frontier Road, Barling, AR 72923

P.O. Box 11170, Fort Smith, AR 72917-1170

Name of Resident Engineer (Contact Person) Danny Harris

Contact Number (479) 452-1301

A. Site Description

1) Pre-construction Topographic view: Refer to the plan and profile sheets for topographic and waterbody information.

2) Project Description and Intended Use after Notice of Termination (NOT) is filed:
The Arkansas Department of Transportation (ARDOT) is proposing a project to grade and construct portions of Future Interstate 49 in Crawford County. The project area extends from Clear Creek Rd. to Interstate 40. Construction activities include improvements to Waterfront Rd., providing service road access from Hwy. 162, and select I-40 ramp access portions. Proposed bridges and drainage structures are also to be constructed. The remaining project area will be limited to grading only, with final roadway construction scheduled to occur under project 040903.

3) Sequence of Activities:

The sequence of Major Soil Disturbing Activities is shown below. **Be aware that the sequence below is provided as a general course of action for the progression of construction activities. Actual sequence of construction will be determined by the Contractor's schedule and field conditions.**

a. Clearing and Grubbing
b. Construction and Drainage Structures for Side Roads
c. Excavation and Embankment of Side Roads
d. Construction and Drainage Structures for Main Lanes
e. Construction of Proposed Bridges
f. Excavation and Embankment of Main Lanes
g. Final Grading of Proposed Roadway
h. Seedbed Preparation

4) Total Acres Available: 333.35 Total Disturbed Area: 193.19

(*Note: Any off-site borrow or waste areas are operated by the Contractor, who is responsible for obtaining any required NPDES permits for the sites. The "total acres available" and "total disturbed areas" shown here do not include areas covered under

ARKANSAS DEPARTMENT OF TRANSPORTATION

JOB NO. 040904

STORM WATER POLLUTION PREVENTION PLAN

permits obtained by another operator. The Contractor is also responsible for meeting local regulations regarding these sites, including those of a Qualifying Local Program).

5) Existing Site Information:

a. Runoff Coefficient Based on Attachment C:
Before construction starts, the site has a runoff coefficient of *0.44*
After construction is completed, the site will have a runoff coefficient of *0.44*

b. Soil Information *Soils range from non-plastic to medium plasticity silts, clays, and sands.*

B. Responsible Parties-General Contractors, Inspectors, etc:

Refer to Contractor identification form in Section S and the Inspector identification form in Section T. This information will be completed after the Pre-construction conference.

C. Receiving Waters: (Permit Pg. 3 of Part II)

1) Location of Surface Water on Construction Site:

The following surface waters are located on the construction site. List them by name with Station Numbers.

a. *Unnamed Tributary – C.L. I-49 Sta. 598+64.07 to Sta. 763+12.76*
b. *Frog Bayou – C.L. I-49 Sta. 614+27.30 to Sta. 616+42.09*
c. *Unnamed Tributary – C.L. I-49 Sta. 723+14.34 to Sta. 728+22.71*
d. *Unnamed Tributary – C.L. I-49 Sta. 758+60.41 to Sta. 763+12.76*
e. *Unnamed Tributary – C.L. I-49 Sta. 847+26.67 to Sta. 858+94.51*

2) The following bodies of water receive runoff from the construction site:

Name of Operator of Municipal Storm Sewer and/or Receiving Stream: *Frog Bayou, Unnamed Tributary*
Narrative Description of Nearest Water: *Frog Bayou thence to Arkansas River*
Name of Ultimate Receiving Water: *Arkansas River*

Waterbodies that would require the fifty (50) foot buffer zone are Extraordinary Resource Waters (ERW), Ecologically Sensitive Waterbodies (ESW), Natural and Scenic Waterways (NSW), waterbodies with approved TMDLs, waterbodies on the 303(d) list, and/or other uses at the discretion of the Director of DEQ.

Above categorized waterbodies, if any on project, list both waterbody and qualifier:
N/A

ARKANSAS DEPARTMENT OF TRANSPORTATION

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STORM WATER POLLUTION PREVENTION PLAN

D. TMDL and 303(d) list can be found at:
((https://www.adeq.state.ar.us/water/planning/integrated/tmdl/))

1) 303(d) Listed Waters - Select the following appropriate statement utilizing information received from the Environmental Division.
Statement 1:

__X__ Storm water discharges from this site do not enter a waterbody on the list of waters impaired for turbidity or other pollutant which could be impacted by roadway construction on the 303(d) list.

Statement 2:

_____ Storm water discharges from this construction site enter a waterbody on the list of impaired waterbodies (303d list) for turbidity and/or other pollutant. The SWPPP has been developed with BMPs which are designed to minimize the discharge of these pollutants to the maximum extent practicable. Condition of sediment control BMPs will be monitored during regular inspections to ensure this goal is met.

2) TMDL Waters - Select the following appropriate statement utilizing information received from the Environmental Division.

Statement 1:

__X__ Storm water discharges from this site do not enter a waterbody with an approved TMDL for turbidity or other pollutant which could be impacted by roadway construction.

Statement 2:

_____ Storm water discharges from this construction site enter a waterbody with an established TMDL allocation for turbidity and/or other pollutant. A TMDL has been written for the waterbody that is applicable to the construction project. The following information documents the construction projects compliance with the TMDL:

1.) List TMDL assumptions and allocations: _____

_____

2.) List measures taken to ensure that the discharge of pollutants from the site is consistent with the assumptions and allocations of the TMDL. _____

_____

ARKANSAS DEPARTMENT OF TRANSPORTATION

JOB NO. 040904

STORM WATER POLLUTION PREVENTION PLAN

E. Discharges to ERW, NSW, or ESW:

Statement 1:

__X__ The construction site is not located within a watershed of an ERW, ESW, or NSW.

Statement 2:

_____ The construction site is located within a watershed of an ERW, ESW, or NSW. Additional BMPs have been considered for implementation in these areas.

F. Watershed of Potential Losing Stream and/or Sensitive Aquatic Species:

Statement 1:

__X__ The construction site is not located within a watershed of a potential losing stream and or sensitive aquatic species.

Statement 2:

_____ The construction site is located within a watershed of a potential losing stream and or sensitive aquatic species. Additional BMPs have been considered for implementation in these areas.

G. Attainment of Water Quality Standards after Authorization: (Permit Pg. 4 of Part II)

BMPs have been selected and will be installed and maintained at the construction site to minimize the discharge of pollutants as necessary to meet applicable water quality standards.

H. Site Map: See Attachment A for items to be included. All of these items should be marked on the job plans maintained for the SWPPP.

I. Storm Water Controls

1. Initial Site Stabilization, Erosion, & Sediment Controls: (Permit Pg. 5 of Part II)

Complete descriptions and specifications for control measures may be found in the ARDOT's Standard Specifications for Highway Construction, Supplemental Specifications, Special Provisions, Construction Contract, and Construction Plans. **All controls are designed and installed with the primary goal of retaining sediment on site to the maximum extent practicable**.

Insert a description below of the construction activities that are a part of the initial site disturbance and stabilization, along with the appropriate controls measures and time of installation for that activity. This information should be provided by the Contractor at the Pre-construction meeting.

ARKANSAS DEPARTMENT OF TRANSPORTATION

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STORM WATER POLLUTION PREVENTION PLAN

Be aware that the list is general. Actual timing of erosion control installations will be determined daily based upon the construction activity occurring and actual field conditions. (Construction Activity/Control/Timing)

1) Clearing and Grubbing, install silt fence prior to soil disturbing activities begin.
2) Construct all culverts
3) Place ditch checks as ditches and slopes are constructed
4) Place temporary seeding and mulch cover as slopes are constructed
5) Construct main lanes and shoulders
6) Continuously stabilize inactive areas within 14 days
7) Place permanent seeding as slopes are constructed

2. Stabilization Practices: (Permit Pg. 6 of Part II)

List of Stabilization Practices to be utilized and scheduling of implementation for that practice:

X Dust control - *wet down dusty areas as needed/ongoing*

_____ Erosion control matting - _____

X Geotextiles - *Underlayment for dumped riprap (see plans for locations)*

X Limiting disturbed area - *will be limited by Engineer as discussed in Subsection 110.05(d) of Standard Specifications/ongoing*

X Mulches - *To be implemented during application of Temporary and permanent seeding.*

_____ Mulch control netting - _____

X Off-site tracking controls (Either stabilized exits and/or wheel washing)*

X Preserving existing vegetation - *as shown on the job plans/ongoing*

X Sod stabilization - *as shown on the job plans/ongoing*

X Temporary and permanent seeding - *will be initiated within 14 days of temporarily ceasing construction activity on a portion of the site or immediately initiated where construction activities have permanently ceased.*

X Natural buffer zone – (Will be established along waterbodies with at least 25 feet for any unnamed streams, creeks, rivers, lakes, or other waterbodies and at least 50 feet for an established TMDL waterbody, streams listed on the 303d list, an ERW, ESW, NSW, and any others at the discretion of the Director of DEQ.

If encroachment is necessary within these required buffer zones, briefly describe the reason why.)
When encroachment occurs, additional measures will be taken to protect the waterbody, and the contractor will be required to stabilize the disturbed area within the buffer zone within 5 business days of completion of work.

X Slope Tracking - *as needed*

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_____ Other - _____

*Stabilized exits will use either suitable sized rock as directed by the Engineer or manufactured devices designed to minimize the amount of soil being tracked off-site.

3. Structural Practices: (Permit Pg. 7 of Part II)

List of Structural Practices to be utilized and scheduling of implementation for that practice:

X Sediment basins* (to be utilized whenever 10 or more acres drain from common drainage locations on the site based upon 3600 cubic feet per acre or sized based on the runoff volume of a 10 year, 24 hours storm, unless not attainable. If not attainable, briefly describe reason(s) that a basin was not used) *See job plans. Not attainable due to relatively flat project area.*

_____ Curb & gutter - _____

X Ditch checks** - *as shown on the job plans*

X Diversion ditches - *as shown on the job plans*

_____ Drainage swales - _____

_____ Drop inlet silt fences - _____

_____ Erosion Control Matting - _____

_____ Gabions - _____

X Inlet & outlet protection - *as shown on the job plans*

X Silt fences - *as shown on the job plans*

X Slope drains - *as shown on the job plans*

_____ Storm sewer - _____

X Retaining walls - *as shown on the job plans*

X Temporary Silt Dikes - *as shown on the job plans*

X Wattles/Sediment Logs - *as shown on the job plans*

X Filter Socks - *as shown on the job plans*

_____ Other - _____

*Sediment will be removed from basins when design capacity is reduced by 50%. In addition, when a sediment basin is utilized per permit requirements, the procedures for the removal of a sediment basin can be found in the Standard Specifications Subsection 621.03.
**Hay/Straw bales will not be used in areas of concentrated flow.

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J. Other Controls: In addition to erosion control and storm water management, our plan will include measures to properly manage solid wastes, hazardous wastes, dust generation, and all other activities that will generate wastes during the construction phase. (Permit Pg. 8 of Part II)

1) Solid material control, debris, and wastes:

   All solid materials discharged to waters of the United States shall be in accordance with Section 110 of the Standard Specifications, the applicable Section 404 Special Provisions in the Job Contract, the plans, and as authorized by a USA Corps of Engineers Section 404 Permit. Litter and construction debris will be prevented from becoming a pollutant source for storm water discharges. Any debris which inadvertently enters a water of the state will be removed daily.

2) Offsite vehicle tracking:

   Each vehicle exit from the construction site must either be stabilized or use wheel washing to prevent the tracking of material onto the public roadway. (If sediment escapes the construction site through tracking, it will be removed by sweeping frequently enough to minimize off-site impacts to waterbodies.)

3) Temporary sanitary facilities:

   Facilities will be provided and properly maintained by the Contractor in accordance with Subsection 107.06 of the Standard Specifications.

4) Concrete waste area:

   Designated concrete washout waste area(s) will be established and utilized to prevent liquid concrete waste from being discharged to a water of the state.

5) Fuel storage, hazardous materials, and truck washing areas:

   The following is a list of materials which could be potential sources of pollution in storm water runoff: asphalt materials, concrete, cement, concrete wash water, paint, solvents, petroleum products, fertilizers, concrete curing compound, lime, linseed oil, asphalt additives, concrete additives, and sewage. Handling of the above materials or other potential pollutants shall be in accordance with Subsection 110.06, Pollutants, of the Standard Specifications.

K. Non-Storm Water Discharges: (Permit Pg. 12 of Part I)

List of Anticipated Allowable Non-Storm Water Discharges*:

1) Water used to wash vehicles (where detergents or other chemicals are not used) or control dust in accordance with Part II.A.4.J.2
2) Uncontaminated landscape Irrigation
3) Uncontaminated pavement wash waters where spills or leaks of toxic or hazardous material have not occurred (unless all spilled material have been removed) and where detergents or other chemicals are not used.

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4) Uncontaminated springs, excavation dewatering, and groundwater (Part I.B.13.C). If dewatering is necessary and turbidity exists, the discharge will be managed with appropriate devices such as a sediment bag or basin prior to discharge.

*Other Allowable Non-Storm Water Discharges are listed in the Permit Part I.B.10, but there is no reasonable anticipation of these discharges at this time.

L. Post-Construction Storm Water Management: (Permit Pg. 8 of Part II)

Permanent Storm Water Management - List of devices to be utilized for storm water infiltration and management:

____	Channel linings	**X**	Concrete ditch paving
X	Culverts	____	Curb and gutter
____	Detention basins	**X**	Drop inlets
X	Dumped riprap	____	Floodgates
____	Gabions	____	Grassed swale
X	Inlet & outlet protection	**X**	Permanent seeding
____	Retention pond	**X**	Riprap
X	Solid sodding	____	Storm sewer
X	Topsoil replacement	**X**	Underdrains
____	Velocity dissipators	____	Wetland creation
____	Other-list _____		

Velocity dissipation devices:

____	Concrete spillways	____	Grouted riprap
X	Permanent seeding & mulch	**X**	Underdrains
X	Solid sodding	**X**	Concrete ditch paving
X	Dumped riprap	____	Detention basins
____	Velocity dissipators	____	Wetland infiltration
____	Other-list _____		

M. State or Local Programs: (Permit Pg. 8 of Part II)

The Arkansas State Highway Commission and the Arkansas Department of Transportation have the exclusive authority over the state highway system (See Ark. Code Ann. § 27-67-101, et al), therefore no local agencies would have authority or jurisdiction over the lands owned, controlled, and maintained by the ARDOT. The ARDOT will make every effort to address any concerns of local entities concerning storm water discharges from the state highway right of way.

This authority does not extend to the Contractor's off-site operations. The Contractor is responsible for complying with all State and Local Programs in accordance with Subsection 107.01 of the Standard Specifications.

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N. Inspections: (Permit Pg. 8-9 of Part II)

Inspections will be conducted by a qualified inspector at the following frequency:

X **Every 7 days or**

_____ **Every 14 Days and within 24 hours after a ¼ inch or greater rainfall event**.

A report of the inspection will summarize the scope of the inspection, the name of the inspector, the date of inspection, and any damages observed and repairs made to any control measure. Completed inspection forms will be kept with the SWPPP.

The following are the minimum inspection, maintenance, and reporting practices that will be used to maintain erosion and sediment controls at the construction site:

1. Inspection form (Attachment B).
2. All erosion and sediment control measures will be maintained in good working order. If repair is necessary, it will be completed **within three (3) business days of discovery**.
3. All controls will be inspected to ensure that they meet the manufacturer's specifications.
4. Controls will be replaced or modified if periodic inspections reveal the device is not performing as intended.
5. Approximate times of beginning and duration of storm events.
6. Sediment basins and sediment traps will be cleaned out when they reach 50% of the original capacity.
7. A description of any discharges during inspections.
8. Inspections are not required if snow cover exists over the entire site for an extended period of time. If there is any runoff from the site at any time during snow cover, melting conditions would be considered to be existent at the site then inspections would need to be resumed.
9. All site entrances and exits will be checked to ensure no off-site tracking.
10. All components of the SWPPP and inspection reports will be maintained for a minimum of 3 years after permit termination.
11. In addition to inspection, records will be kept of the following:
    a. Dates when major grading activities occur,
    b. Dates when construction activities cease in an area, temporarily or permanently,
    c. Dates when an area is stabilized, temporarily or permanently.

O. Maintenance: All erosion and sediment control measures will be maintained in good working order. If a repair is necessary, it will be completed **within three (3) business days of discovery**. (Permit Pg. 10 of Part II)

However, if conditions do not permit large equipment to be used, a longer time frame is allowed if the condition is thoroughly documented on the inspection form as stated in the Permit Part II.A.4.O.

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STORM WATER POLLUTION PREVENTION PLAN

P. Adverse Weather Conditions: Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, or electrical storms, or situations that otherwise make inspections impractical, such as extended frozen conditions. When adverse weather conditions prevent the inspection of the site, an inspection should be completed as soon as safe and feasible. If adverse weather conditions prevent compliance with the permit, documentation of the beginning and ending date of adverse weather condition should be included. **This information will be documented in the Site Manager Program job records.**

Q. Endangered Species: Endangered species clearance is obtained during the National Environmental Policy Act (NEPA) process for all ARDOT projects and is conducted in accordance with Section 7 of the Endangered Species Act. Further information about this process can be obtained by contacting the ARDOT Environmental Division at (501) 569-2595, or the U.S. Fish and Wildlife Service at (501) 513-4489.

R. Employee Training: ARDOT employees who perform inspections have received formal training in NPDES Storm Water requirements and SWPPP implementation. Training records will be available electronically or will be maintained with the SWPPP after the project commences.

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STORM WATER POLLUTION PREVENTION PLAN

S. Contractors: (Permit Pg. 3 of Part II)

All contractors should be identified in the plan. (a page should be included for each subcontractor).

THE CERTIFICATION BELOW SHALL BE COMPLETED AND INCLUDED IN EACH SUBCONTRACT. Copies of these certifications must be inserted at this location.

The Contractor/Subcontractor indicated below shall have responsibility for implementation of the pay items as listed below.

Item	Item

All Contractors operating on the site shall have the responsibility for compliance with Section 110 of the Standard Specifications for their operations, including, but not limited to: Good housekeeping practices, spill prevention, spill reporting and clean-up, and product specific practices such as limiting the discharge of concrete waste water to areas specified in the SWPPP.

Contractor Printed Name: _____

Signature: _____ Title: _____

Company Name: _____ Date: _____

Company Address: _____

Telephone Number: _____ ARDOT Job: _____

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STORM WATER POLLUTION PREVENTION PLAN

T. Inspectors: (Permit Pg. 3 of Part II)

Site inspectors should be identified in the plan.

ARDOT inspectors performing the erosion and sediment control inspection must complete the information below.

Printed Name of ARDOT Inspector	Signature	Contact Number	Date

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U. Plan Certification: (Permit Pg. 10 of Part II) (To be completed by a duly authorized representative or the cognizant official.)

"I certify under penalty of law that this document and all attachments such as Inspection Form were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Note: For this permit only, "this document" refers to the Storm Water Pollution Prevention Plan, "attachments" refers to the site map and inspection forms, and "system" is referencing the project site.

Printed Name: David W. Baker DWB

Printed Title: Engineer of Roadway Design

Signature: 

Date: 08/11/2026

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DELAY IN RIGHT-OF-WAY OCCUPANCY

Right of occupancy and use of the right of way for the following areas will be delayed until October 30, 2026, to allow for the completion of acquisition activities.

Tract	Approximate Station Locations	Note
81	609+00.00 LT to 12+00.00 LT	Right of Entry Expected 10-30-2026
83	615+00.00 to 685+00.00	Right of Entry Expected 10-30-2026
87	726+00.00 to 782+00.00	Right of Entry Expected 10-30-2026

The Contractor is forewarned that they will in no event be allowed to perform work in the area(s) mentioned above until right of occupancy and use has, in fact, been extended to them.

In case there is a delay in extending the Contractor the right of occupancy and use beyond the anticipated dates 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.

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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, including effects on service life, economy of operations, ease of maintenance, desired appearance, and safety.

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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.

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

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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 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.

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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 – Arkansas Oklahoma Gas
   Contact Allen Sopshire, 479-783-3181, 5030 S. S Street, Fort Smith, AR 72903.

Arkansas Oklahoma Gas has been issued a work order with an estimated completion date of August 31, 2027.

2. Owner – Arkansas Valley Electric
   Contact Chris Howe, 479-667-9977, 208 S. 17th St., Ozark, AR 72949.

It is anticipated that Arkansas Valley Electric will be issued a work order by October 30, 2026, with an estimated completion date of June 30, 2027.

3. Owner – AT&T Arkansas
   Contact Bryan Williams, 479-249-5194, 1133 Harold St., Fayetteville, AR 72703.

It is anticipated that AT&T Arkansas will be issued a work order by October 30, 2026 with an estimated completion date of April 30, 2027.

4. Owner – AT&T Corp.
   Contact Jeff Wyborny, 501-733-7276, 2100 Salem Rd., Conway, AR 72034.

AT&T Corp. has been issued a work order with an estimated completion date of March 31, 2027.

5. Owner – Brightspeed
   Contact Mickel Jones, 980-376-1481, 2616 W. Main St., Jacksonville, AR 72076.

It is anticipated that Brightspeed will be issued a work order by October 30, 2026 with an estimated completion date of April 30, 2027.

6. Owner – City of Kibler
   Contact Mayor Andrew Crow, 479-632-3177, 50 Oak Terrace, Van Buren, AR 72956.

It is anticipated that the City of Kibler will be issued a work order by December 31, 2026 with an estimated completion date of June 30, 2027.

7. Owner – Cox Communications
   Contact Rick Sweeten, 479-831-8925, 4900 S. Zero St., Fort Smith, AR 72903.

It is anticipated that Cox Communications will be issued a work order by November 30, 2026 with an estimated completion date of August 31, 2027.

8. Owner – Energy Transfer
   Contact Erik Van Aller, 713-989-2831, 1300 Main St., Houston, TX 77002.

Energy Transfer has advised that their adjustments are complete.

9. Owner – Lumen
   Contact Aaron Ardis, 318-362-1737, 100 CenturyLink Dr., Monroe, LA 71203.

It is anticipated that Lumen will be issued a work order by August 31, 2026, with an estimated completion date of June 30, 2027.

10. Owner – Merit Energy
    Contact John Newman, 479-651-0478, 1541 Airport Rd., Ozark, AR 72949.

Merit Energy has advised that their adjustments are complete.

11. Owner – Oklahoma Gas & Electric
    Contact Josh Fritsche, 479-649-5323, 7200 Hwy. 45, Fortt Smith, AR 72916.

Oklahoma Gas & Electric has advised that their adjustments are complete.

12. Owner – Ritter Communications
    Contact Rich Busby, 870-336-3471, 2400 Ritter Dr., Jonesboro, AR 72401.

Ritter Communications has advised they have no adjustments.

13. Owner – Riverfront Exploration
    Contact Jennifer Sebo, 479-242-8426, 109 North 6th, Fort Smith, AR 72901.

Riverfront Exploration has been issued a work order with an estimated completion date of November 30, 2026.

14. Owner – Southwestern Power Administration
    Contact Nathan Tackett, 918-595-6726, 6655 S Lewis, Tulsa, OK 74136.

Southwestern Power Administration facilities will be relocated under a separate contract by Arkansas Department of Transportation with an estimated completion date of December 31, 2027.

Each utility status is 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	Station Number	Est. Comp. Date
Arkansas Oklahoma Gas	2-inch Gas Pipeline	Crosses	608+50	8/31/2027
	6-inch Gas Pipeline	Crosses	772+00	
	6-inch Gas Pipeline	Crosses I-40	666+20	
Arkansas Valley Electric	Power Transmission	Crosses I-40	627+00	6/30/2027
	Power Distribution	Crosses	684+50	
	Power Distribution	Crosses	608+10	
AT&T Arkansas	Buried Fiber Optic Cable	Crosses	767+00	4/30/2027
AT&T Corp.	Buried Fiber Optic Cable	Parallels I-40 Left	605+00 - 645+00	3/31/2027
	Buried Fiber Optic Cable	Parallels I-49 Left	815+00 - 870+00	
Brightspeed	Aerial Telephone	Crosses	792+00	4/30/2027
	Buried Telephone	Crosses	684+50	
	Buried Telephone	Crosses		
City of Kibler	8-inch Water	Crosses	684+50	6/30/2027
	6-inch Water	Crosses	608+10	
Cox Communications	Aerial CATV	Crosses	794+00	8/31/2027
	Aerial CATV	Crosses Hwy. 162		
Energy Transfer	3-inch Gas Pipeline	Parallels Right	649+00 - 656+00	Adjustments Complete
Lumen	Buried Fiber Optic Cable			6/30/2027
Merit Energy	4-inch Gas Pipeline	Crosses	596+00	Adjustments Complete
	4-inch Gas Pipeline	Crosses CC Ramp 3	23+00	
	Gas Well	Left	594+00	
Oklahoma Gas & Electric	Power Transmission	Crosses		Adjustments Complete
	Power Transmission	Crosses	792+00	
	Power Distribution	Crosses	794+00	

Approximate Utility Locations

Utility Owner	Facility Type	Location	Station Number	Est. Comp. Date
Ritter Communications	Buried Fiber Optic	Crosses	822+50	No Adjustments
	Buried Fiber Optic	Parallels I-40 Left	Throughout	
Riverfront Exploration	2-inch gas pipeline	Crosses	656+50	11/30/2026
	2-inch gas pipeline	Crosses	725+00	
	2-inch gas pipeline	Crosses	736+00	
Southwestern Power Administration	Power Transmission	Crosses	833+10	12/31/2027

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
WORK ALLOWED PRIOR TO ISSUANCE OF WORK ORDER

Section 108 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

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

(2) 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;
- Preparation of shop drawings and other required submissions;
- Ordering, fabrication, assembly, and/or stockpiling of materials;
- Driving Test Piling; and
- Contract surveying, when Roadway and/or Bridge Construction Control is included in the Contract.
- Erection of advance warning signs.
- Installation of netting on structures to prevent nesting of migratory birds in accordance with applicable Special Provisions (if included in the Contract).
- Set up, installation, and testing of Automated Work Zone Information Systems (if included in the Contract).
- Off-site area approval process per Section 107.10(c).

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, no time will be assessed for work performed prior to the effective date of a Work Order.

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.

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

PROTECTION OF WATER QUALITY AND WETLANDS

Section 110 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is hereby added as the last paragraph of **Subsection 110.04(b):**

> On all projects let to contract after October 1, 2018, the project superintendent or supervisor (as defined in Subsection 105.06) must be certified in National Pollutant Discharge Elimination System (NPDES) through the University of Arkansas' Center for Training Transportation Professionals (CTTP). The project superintendent or supervisor must provide proof of NPDES certification before any earth disturbing activities, including clearing and grubbing, or any installation of erosion control activities are allowed to begin.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

UNCLASSIFIED EXCAVATION

Section 200 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is hereby added after the first paragraph of **Subsection 210.08, Excavation Operations:**

When performing excavation to construct cut slopes, the Contractor shall not excavate material below the finished slope grade. If excavation is performed more than 8 inches below the finished cut slope grade, overcut material shall be removed at no cost to the Department and replaced with clean durable stone. The stone source and gradation shall be approved by the engineer before placement. There shall be no payment for this work.

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

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

ARKANSAS DEPARTMENT OF TRANSPORTATION

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION
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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

PERCENT AIR VOIDS FOR ACHM MIX DESIGNS

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

PERCENT AIR VOIDS FOR ACHM MIX DESIGNS

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

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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SUPPLEMENTAL SPECIFICATION

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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SUPPLEMENTAL SPECIFICATION

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.

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SUPPLEMENTAL SPECIFICATION

PORTLAND CEMENT CONCRETE PAVEMENT

Division 500 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

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 total alkalis in the Portland cement or blended cement (Na_2O + 0.658 K_2O) 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 fourth and fifth paragraphs of **Subsection 501.02(b), Fine Aggregate,** are hereby deleted.

The third paragraph of **Subsection 501.02(c), Coarse Aggregate,** is hereby deleted and the following substituted therefor:

Gravel shall consist of clean, crushed, hard, durable, uncoated aggregate, having a percentage of wear by the Los Angeles Test (AASHTO T 96) not greater than 40. Crushed gravel shall consist of a minimum of 70%, by weight, of the material retained on the No. 4 sieve, having at least two fractured faces in accordance with AASHTO T 335.

The sixth and seventh paragraphs of **Subsection 501.02(c), Coarse Aggregate,** are hereby deleted and the following substituted therefor:

The nominal maximum aggregate size shall not exceed 1½ inches when tested in accordance with AASHTO T 27.

Subsection 501.02(f), Cement Replacements, is deleted in its entirety and the following substituted therefor:

(f) Supplementary Cementitious Materials (SCMs). Fly ash and slag cement shall be from sources listed on the QPL. Fly ash or slag cement may be used as partial replacements for cement. Substitution shall be made on a one-to-one weight basis.

The water-to-cementitious materials ratio shall be calculated based on the combined weight of cement and any SCMs.

(1) Fly Ash. Fly ash may be used provided the replacement does not exceed 25% by weight of total cementitious materials content. Mixing of different sources or types of fly ash within a single mixture shall not be permitted. Concrete containing fly ash shall meet all applicable performance requirements.

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PORTLAND CEMENT CONCRETE PAVEMENT

(2) Slag Cement. Slag cement may be used as a partial replacement for portland and blended cement in all classes except Seal concrete, provided the replacement does not exceed 35% by weight of total cementitious materials content.

Subsection 501.03, Mix Designs, is deleted in its entirety and the following substituted therefor:

501.03 Mix Design. (a) General. Concrete pavement mixture shall be designed and prepared by the Contractor and proportioned to provide adequate 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 all production and Acceptance requirements.

A JMF shall be developed using combined aggregate gradations evaluated against the Department's Tarantula Curve workability zones. The Tarantula Curve workability zones are provided on the Department's Concrete Mix Design Submittal Form. The combined gradation shall be checked at the following sieve sizes: 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. The nominal maximum aggregate size shall be determined in accordance with Table 501-4 and shall not exceed 1½ inches.

Mixtures outside the Tarantula Curve workability zones may be approved by the Department when supporting data demonstrates equivalent or superior workability and segregation resistance. Supporting data may include:

1. Documented field performance using substantially similar materials and gradation.
2. Satisfactory results from an approved workability or segregation test.
3. Other data submitted with the mix design.

The combined aggregate retained on the No. 4 sieve shall not contain more than 20% flat or elongated particles, determined in accordance with Table 1. Aggregates shall be proportioned to provide satisfactory plasticity, workability, and consistency.

The minimum cementitious material content shall be 517 lb/yd³. When supplementary cementitious materials are used, they shall comply with Subsection 501.02(f) and shall be included in the mix design submittal, including type, source, and replacement percentage.

The water-to-cementitious materials ratio shall be calculated using the total weight of cementitious materials (cement plus SCMs) and shall not exceed 0.45 by weight, including free surface moisture but excluding absorbed moisture. The air content of fresh concrete at the point of placement shall be 4.0% to 8.0%, when tested in accordance with Table 1. Concrete shall attain a minimum compressive strength of 4,000 psi as determined in accordance with Table 1 at or before 56 days.

(b) Trial Batch. Each proposed mix design shall be verified by a trial batch prior to approval. Trial batches may be produced in a laboratory or at the plant, at the Contractor's option, and shall be witnessed. Trial batches shall use the same materials and proportions intended for production and shall be produced using equipment representative of that to be used for the Work. The trial

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PORTLAND CEMENT CONCRETE PAVEMENT

batch shall demonstrate compliance with requirements for air content, water-to-cementitious materials ratio, unit weight, yield, and compressive strength. When maturity meters are proposed, the trial batch shall be used to develop the mixture-specific maturity-strength relationship.

A maturity-strength relationship shall be developed for the proposed production mixture in accordance with the applicable method in Table 1. The specimens used to develop the relationship shall be made with the materials and mixture proportions proposed for the Work. Temperature-measuring equipment shall be calibrated in accordance with the applicable test method.

The Contractor shall perform the Box Test in accordance with AASHTO TP 137 to evaluate workability and stability over time. Test results, including photographic documentation, shall be included with the mix design submittal.

Trial batch results shall be no more than 6 months old at the time of approval. Documentation shall include all material sources, batch proportions, certified test results, and any adjustments made. A new trial batch shall be required if material sources, aggregate gradations, or mix proportions change after final approval of the mix design, or if production concrete fails to meet the requirements.

(c) 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 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, admixture types, sources, or aggregate or cementitious proportions shall require a revised submittal and written approval by the Department prior to use. Adjustments to admixture dosage rates made for field conditions, when within the manufacturer's recommended range and not affecting performance requirements, shall not require a revised submittal.

Approved mix designs shall remain on file with the Department and may be referenced for use on other projects, subject to continued compliance.

(d) Provisional Mix Design Approval. At the request of the Contractor, provisional approval of a concrete mix design may be granted by the Department for limited use prior to completion of the full review process. Provisional approval shall not exceed 14 calendar days from the date of issuance and does not constitute acceptance of concrete produced.

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PORTLAND CEMENT CONCRETE PAVEMENT

(1) Conditions. Provisional approval may be granted based on preliminary data indicating probable compliance with the requirements of this Section. During this period, the Contractor may adjust aggregate proportions, cementitious materials content, water-to-cementitious materials ratio, and admixture dosages within the limits of this Section, subject to Engineer oversight.

(2) Documentation. All outstanding certifications, test results, and supporting documentation shall be submitted within the provisional approval period. Failure to submit required documentation shall void provisional approval.

(3) Revocation. Provisional approval may be revoked at any time when noncompliance with the requirements of this Section is indicated. Concrete produced after revocation shall not be incorporated into the Work. Concrete produced prior to revocation that is determined to be noncompliant shall be subject to removal or corrective action at no cost to the Department.

(4) Final Approval. Full approval shall be issued by the Department upon review of complete documentation demonstrating compliance with this Section. Concrete production shall not continue beyond the provisional approval period without written approval of the mix design.

Subsection 501.04(a), Quality Control by the Contractor, is deleted in its entirety and the following substituted therefor:

(a) Quality Control. The Contractor shall perform all applicable QC sampling and testing of the concrete pavements used on the project. QC shall include monitoring and controlling materials during handling, blending, mixing, transporting, and placement operations, and making necessary adjustments to material proportions to produce concrete conforming to the approved mix design and this Section.

The Contractor shall provide all personnel, equipment, and facilities necessary to perform required QC sampling and testing. QC sampling and testing shall be performed promptly and at a frequency sufficient to detect trends, variability, or nonconformance early enough to allow corrective action before material is incorporated into the Work.

Unless otherwise specified, sampling, preparation and curing of field specimens, and testing for the properties listed in Table 1 shall be performed in accordance with the methods shown in the table for QC, Acceptance, Verification, and Dispute Resolution.

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PORTLAND CEMENT CONCRETE PAVEMENT

Table 1
Test Methods for Concrete Pavement and Aggregates

Property	Test Method
Aggregates	
Flat or Elongated Particles	ASTM D4791
Gradation	AASHTO T 27
Moisture Content	AASHTO T 255
Concrete	
Air Content	AASHTO T 152
Casting and Curing Concrete Test Specimens in the Field	AASHTO R 100
Compressive Strength	AASHTO T 22
Estimating Concrete Strength by Maturity Tests	AASHTO T 413
Measuring Length of Drilled Cores	AASHTO T 148
Obtaining and Testing Drilled Cores	AASHTO T 24
Slump of Hydraulic Cement Concrete	AASHTO T 119
Unit Weight(1)	AASHTO T 121

(1) Minimum of one test per day per mix design; maintain a continuous plot of daily unit weight results to monitor changes and trends throughout the project. The plot shall be maintained current and made available to the Engineer upon request. Routine submittal of the plot is not required.

(1) Equipment Calibration and Certification. Concrete cylinder compression testing machines shall be calibrated and verified in accordance with AASHTO T 22 and ASTM E4. Certification of calibration and verification shall be provided to the Engineer.

(2) Aggregate Quality Control. Individual and combined aggregate gradations shall be submitted to verify compliance with approved JMF tolerances. The initial QC gradation test shall be completed and submitted to the Engineer prior to the start of concrete production.

During production, aggregate gradation tests shall be performed at a minimum frequency of one test per stockpile per 1,000 cubic yards of concrete produced. Split samples shall be provided to the Engineer for Verification testing.

Combined aggregate gradations shall conform to the approved JMF and shall not vary from the JMF by more than the limits shown in Table 2. In addition, combined aggregate gradations

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shall remain within the applicable Tarantula Curve workability zone shown in the Contract. Compliance with JMF tolerances does not relieve the Contractor of the requirement to meet Tarantula Curve limits.

If two consecutive QC combined aggregate gradation test results, or three of the most recent five results, exceed the JMF tolerances shown in Table 2, concrete production shall be suspended until corrective actions are implemented and compliance is demonstrated. Passing test results shall be submitted to the Engineer prior to resuming production.

Table 2
Percent Variation from Job Mix Formula (JMF)

Sieve Size	% Percent Passing
No. 4 or greater	±5%
No. 8 to No. 30	±4%
No. 50	±3%
No. 100	±2%
No. 200 combined aggregate	3.0% maximum

(3) Air Content Monitoring for Class C Fly Ash. When Class C fly ash is used as a partial replacement for cement and the fly ash source utilizes powdered activated carbon to comply with EPA mercury emission requirements, increased frequency of Contractor QC air content testing shall be required.

At a minimum, air content testing shall be performed at the start of concrete placement and at intervals not exceeding 250 cubic yards of concrete placed. Additional testing shall be performed when successive air content test results differ by more than 1.5 percentage points or otherwise indicate unstable air-void performance.

Subsection 501.04(b) is amended to include **Subsection 501.04(b)(1), Pavement Thickness Measurement; Subsection 501.04(b)(2), Compressive Strength;** and **Subsection 501.04(b)(3), Limitations and Corrective Action,** as follows:

(1) Pavement Thickness Measurement. Pavement thickness shall be determined by one of the following methods, as selected by the Contractor and approved by the Engineer. Only one method may be selected for each project, and once selected, it shall be used for all acceptance testing on that project unless otherwise directed in writing by the Engineer.

For the purposes of this Specification, NDT refers to *non-destructive testing* methods for pavement thickness determination that do not require removal of cores and utilize electromagnetic or pulse induction technology to measure slab depth without damaging the pavement.

- **Option A – Cores:** Pavement cores shall be obtained, prepared, and measured in accordance with AASHTO T 148. The Contractor shall drill and fill all core holes with a

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material approved by the Engineer, at no cost to the Department. Core hole repairs shall be performed in a manner that restores the structural integrity and durability of the pavement surface.

- **Option B – Non-Destructive Thickness Measurement (NDT):** The Contractor may, with prior approval of the Engineer, utilize an NDT pavement thickness measurement device (e.g., MIT-Scan T3) based on electromagnetic pulse-induction technology, in accordance with the manufacturer's instructions and Department procedures. When this option is selected:
    - Testing shall be performed in accordance with AASHTO T 359.
    - Measurements shall be obtained as soon as the pavement can support foot traffic.
    - Thickness measurements shall be taken at a frequency and random locations equivalent to that required for core sampling.
    - All non-destructive thickness measurements shall be performed in the presence of and under the observation of the Engineer or an authorized Department representative.
    - If any measurement indicates a deficiency exceeding the tolerances specified in Subsection 501.10, the Contractor shall take corrective action as directed by the Engineer, which may include additional measurements, coring, or pavement replacement.

(2) Compressive Strength. Compressive strength acceptance shall be performed by one of the following methods, corresponding to the pavement thickness measurement method selected under Subsection 501.04(b)(1) for the project.

- **Option A – Cores:** When pavement thickness is verified by cores, compressive strength shall also be determined by testing cores sampled and prepared in accordance with AASHTO T 24 and tested in accordance with AASHTO T 22. When cores are required, one compressive strength test shall be obtained for each pavement thickness verification location unless otherwise specified.
- **Option B – Cylinders (When Using NDT Thickness Measurement):** When pavement thickness is verified using a Department-approved non-destructive thickness measurement device, compressive strength shall be determined by molded cylinders cast and cured from the same concrete placement, sampled and prepared in accordance with AASHTO T 23 and tested in accordance with AASHTO T 22. The number of strength tests shall be at least equivalent to the number of core strength tests otherwise required and shall be based on the same sampling locations and frequency that would have been used for core sampling.

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(3) Limitations and Corrective Action.

- Use of compressive strength cylinders in lieu of cores is permitted only when a Department-approved non-destructive thickness device has been used and thickness data are available for the represented pavement.
- If any compressive strength result (cylinder or core) falls below the specified minimum, the Engineer may require additional testing or corrective action, including removal and replacement.
- Regardless of method, if thickness or strength acceptance results are not within the tolerances or minimum requirements of Table 501-1 or Subsection 501.10, the pavement shall be subject to corrective measures or pay adjustments as directed by the Engineer.

The last sentence of the third paragraph of **Subsection 501.05(c)(1) General,** is hereby deleted and the following substituted therefor:

Before unloading, furnish the delivery ticket for the batch of concrete containing the information required outlined herein. The Engineer will verify all required information is provided on the delivery tickets. The Engineer may suspend concrete operations until the corrective actions are implemented if delivery tickets do not provide the required information. The Engineer will verify the design water-to-cementitious materials ratio is not exceeded.

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. Types and dosages of admixtures added at batching or on site.
6. Total volume of mix.
7. Total quantity of water added after batching.
8. Time of discharge.
9. 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.

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PORTLAND CEMENT CONCRETE DRIVEWAY

Division 500, RIGID PAVEMENT, of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Section 505, PORTLAND CEMENT CONCRETE DRIVEWAY, is hereby modified as follows:

The first paragraph of **Subsection 505.02(b) Joint Filler** is hereby deleted and the following substituted therefore:

> Material for joint filler shall comply with AASHTO M 213 or a Semi-Rigid Closed-Cell Polypropylene Foam, Preformed Expansion joint filler that meets ASTM D8139. Materials meeting ASTM D8139 shall be accepted on the basis of the manufacturer's certificates in accordance with these specifications and acceptable performance on the project.

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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:

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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).

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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.

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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.

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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/.

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CONCRETE DITCH PAVING

Division 600, INCIDENTAL CONSTRUCTION, of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Section 605, CONCRETE DITCH PAVING, is hereby modified as follows:

The last sentence of **Subsection 605.03(e) Expansion Joints** is hereby deleted and the following substituted therefor:

> The space shall be filled with approved joint filler complying with AASHTO M 213 or a Semi-Rigid Closed-Cell Polypropylene Foam, Preformed Expansion joint filler that meets ASTM D8139. Materials meeting ASTM D8139 shall be accepted on the basis of the manufacturer's certification in accordance with these specifications and acceptable performance on the project.

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SUPPLEMENTAL SPECIFICATION
PIPE CULVERTS FOR SIDE DRAINS

Section 606 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The second paragraph of **Subsection 606.01** is hereby deleted and the following substituted therefore:

> For side drains, when the type is not specified on the plans, the Contractor may furnish any of the types listed in Subsection 606.02 provided that only one type and material shall be used for all side drains of like cross-sectional shape on the project. In addition, when circular pipe is specified for a side drain the Contractor may, at no additional cost to the Department, substitute an arch pipe providing the equivalent waterway.

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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.

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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 ___).

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FENCES

Section 619 of the Standard Specification for Highway Construction, Edition 2014, is hereby amended as follows:

Subsection 619.02(a)(3) is hereby deleted and the following substituted therefor:

> Wood posts and braces shall be pressure treated, seasoned, sound, and reasonably straight southern yellow pine. The posts shall be round and free from excessive end splits. Before pressure treatment, the posts and braces shall have the bark removed, the knots trimmed flush, and the ends cut square. Posts that are to be driven shall have the small end tapered.

Subsection 619.02(b)(1) is hereby deleted and the following substituted therefor:

> Wood posts and braces of the size and length shown on the plans shall be treated using only preservatives that are registered with the US EPA under FIFRA. Preservatives and treatments shall meet the requirements of AASHTO M-133 or American Wood Protection Association (AWPA) Standard U1, Commodity Specification A for Posts (sawn 4 sides), Commodity Specification B for Posts (round, ½ and ¼ round); UC4A for Ground Contact General Use or UC4B Ground Contact Heavy Duty.

Subsection 619.02(c)(1) is hereby deleted and the following substituted therefor:

> Wood posts and braces of the size and length shown on the plans shall be pressure treated in accordance with Section 619.03(b)(1) above.

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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.

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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.

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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.

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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.

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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)

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MAILBOXES

Section 637 of the Standard Specification for Highway Construction, Edition 2014, is hereby amended as follows:

The first paragraph of **Subsection 637.02** is hereby deleted and the following substituted therefor:

> The mailbox post shall be either metal or southern yellow pine and shall be the size shown on the plans. Wood posts shall be pressure treated using only preservatives that are registered with the US EPA under FIFRA. Preservatives and treatments shall meet the requirements of AASHTO M-133 or American Wood Protection Association (AWPA) Standard UI, Commodity Specification A for Posts (sawn 4 sides), Commodity Specification B for Posts (round, ½ and ¼ round); UC4A for Ground Contact General Use or UC4B Ground Contact Heavy Duty. Metal posts shall be either galvanized or painted.

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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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TRAFFIC CONTROL FACILITIES

(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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CRASH CUSHION

Section 732 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection 732.01 Description is hereby deleted and the following substituted therefor:

The item "Crash Cushion" shall consist of constructing a foundation pad including excavation and/or embankment, transitions from bridge ends, and a backup wall, when specified, and furnishing and installing a crash cushion according to these specifications and to the dimensions and at the locations shown on the plans or as directed. The crash cushion shall satisfy the Manual for Assessing Safety Hardware (MASH) requirements for a test level 3 (TL-3) crash cushion.

The first paragraph of subsection **732.02 Materials (b) Crash Cushion** is hereby deleted and the following substituted therefor:

The Contractor shall furnish a certification from the manufacturer or supplier that the crash cushion meets the requirements of MASH for a TL-3 crash cushion. The crash cushion shall comply with the most current specifications and details for a guardrail energy absorbing terminal crash cushion as recommended by the manufacturer and as approved by the Engineer.

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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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

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CONCRETE FOR STRUCTURES

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:

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

CONCRETE FOR STRUCTURES

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 CONSTRUCT GRADING AND STRUCTURES OF A FOUR - LANE INTERSTATE FACILITY, INCLUDING IMPROVEMENTS TO THE INTERSTATE 40 AND 49 INTERCHANGE IN CRAWFORD COUNTY. THIS PROJECT CONSISTS OF CLEARING AND GRUBBING, REMOVAL AND DISPOSAL ITEMS, STONE BACKFILL, EARTHWORK, SELECT GRANULAR BACKFILL, ROCK FILL, TRENCHING AND SHOULDER PREPARATION, AGGREGATE BASE COURSE, CEMENT IN CEMENT STABILIZED CRUSHED STONE BASE COURSE, PROCESSING CEMENT STABILIZED CRUSHED STONE BASE COURSE, ACHM BASE, BINDER, AND SURFACE COURSES, COLD MILLING ASPHALT PAVEMENT, ACHM PATCHING OF EXISTING ROADWAY, APPROACH SLABS AND GUTTERS, MAINTENANCE OF TRAFFIC, CONCRETE DITCH PAVING, MINOR DRAINAGE, EROSION CONTROL, PAVEMENT MARKING, ITS ITEMS, ILLUMINATION ITEMS, SIGN ITEMS, CONSTRUCT TWO CONTINUOUS PLATE GIRDER BRIDGES (TOTAL LENGTH 1031.95'), CONSTRUCT FIVE RC BOX CULVERTS (TOTAL LENGTH 296.14'), AND MISC. ITEMS.

State Highway 549, Section 6, in **CRAWFORD** 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 **040904** **FEDERAL AID PROJECT CPFCDS-NHPP-40-1(268)**

Job Name: **CLEAR CREEK RD. – I-40 (PHASE 1) (F)**

said project being approximately **5.028 miles in length.**

Proposal received until 10:00 a.m. on November 4, 2026

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 nine hundred twenty-five (925) calendar days and the Specified Site Use Work within the number of calendar days bid by the bidder in accordance with the Job Special Provision "Site Use (A+B 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.: 040904 Date Estimated: 7/15/2026

Job Name: CLEAR CREEK RD. – I-40 (PHASE 1) (F) Date Revised: 10/12/2026

Federal Aid Project: CPFCDS-NHPP-40-1(268)

Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
Section 01 - PROPOSAL ITEMS					
0001	201 - CLEARING	282.000	STA		
0002	201 - GRUBBING	282.000	STA		
0003	202 - REMOVAL AND DISPOSAL OF FENCE	27,005.000	LF		
0004	202 - REMOVAL AND DISPOSAL OF GATES	11.000	EACH		
0005	202 - REMOVAL AND DISPOSAL OF CONCRETE DRIVEWAYS	1,834.000	SQYD		
0006	202 - REMOVAL AND DISPOSAL OF FOUNDATIONS	3.000	SQYD		
0007	202 - REMOVAL AND DISPOSAL OF PIPE CULVERTS	26.000	EACH		
0008	202 - REMOVAL AND DISPOSAL OF BOX CULVERTS	4.000	EACH		
0009	202 - REMOVAL AND DISPOSAL OF GUARDRAIL	510.000	LF		
0010	202 - REMOVAL AND DISPOSAL OF WIRE ROPE SAFETY FENCE	2,114.000	LF		
0011	202 - REMOVAL AND DISPOSAL OF OVERHEAD SIGN STRUCTURE	1.000	EACH		
0012	202 - REMOVAL AND DISPOSAL OF CONCRETE SLABS	2,412.000	SQYD		
0013	202 - REMOVAL AND DISPOSAL OF SIGNS	43.000	EACH		
0014	SP&207 - STONE BACKFILL	16,315.000	TON		
0015	SPSS210 - UNCLASSIFIED EXCAVATION	452,452.000	CUYD		
0016	SP - SELECT GRANULAR BACKFILL	7,827.000	CUYD		
0017	SP&210 - COMPACTED EMBANKMENT	1,851,230.000	CUYD		
0018	SP&210 - ROCK FILL	209,405.000	CUYD		
0019	SP - REMOVING AND REPLACING TOPSOIL	26,932.000	CUYD		
0020	SP&210 - SOIL STABILIZATION	2,500.000	TON		
0021	SP&215 - TRENCHING AND SHOULDER PREPARATION	167.000	STA		
0022	SPSS303 - AGGREGATE BASE COURSE (CLASS 7)	53,393.000	TON		
0023	SPSS308 - AGGREGATE IN CEMENT STABILIZED CRUSHED STONE BASE COURSE	13,366.000	TON		
0024	SPSS308 - CEMENT IN CEMENT STABILIZED CRUSHED STONE BASE COURSE	557.000	TON		

State Job No.: 040904 Date Estimated: 7/15/2026
Job Name: CLEAR CREEK RD. – I-40 (PHASE 1) (F) Date Revised: 10/12/2026
Federal Aid Project: CPFCDS-NHPP-40-1(268)

Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
0025	SPSS308 - PROCESSING CEMENT STABILIZED CRUSHED STONE BASE COURSE	39,779.000	SQYD		
0026	SS&401 - TACK COAT	6,744.000	GAL		
0027	SPSS405 - MINERAL AGGREGATE IN ACHM BASE COURSE (1 1/2")	8,689.000	TON		
0029	SPSS405 - ASPHALT BINDER (PG 70-22) IN ACHM BASE COURSE (1 1/2") (MINIMUM BID $120.00)	308.000	TON		
0030	SPSS405 - ASPHALT BINDER (PG 76-22) IN ACHM BASE COURSE (1 1/2") (MINIMUM BID $120.00)	45.000	TON		
0031	SPSS406 - MINERAL AGGREGATE IN ACHM BINDER COURSE (1")	12,673.000	TON		
0033	SPSS406 - ASPHALT BINDER (PG 70-22) IN ACHM BINDER COURSE (1") (MINIMUM BID $120.00)	514.000	TON		
0034	SPSS406 - ASPHALT BINDER (PG 76-22) IN ACHM BINDER COURSE (1") (MINIMUM BID $120.00)	42.000	TON		
0035	SPSS407 - MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	13,246.000	TON		
0037	SPSS407 - ASPHALT BINDER (PG 70-22) IN ACHM SURFACE COURSE (1/2") (MINIMUM BID $120.00)	552.000	TON		
0038	SPSS407 - ASPHALT BINDER (PG 76-22) IN ACHM SURFACE COURSE (1/2") (MINIMUM BID $120.00)	190.000	TON		
0039	SP&412 - COLD MILLING ASPHALT PAVEMENT	817.000	SQYD		
0040	SPSS415 - ACHM PATCHING OF EXISTING ROADWAY	50.000	TON		
0041	SPSS501 - PORTLAND CEMENT CONCRETE PAVEMENT (9" UNIFORM THICKNESS)	35,156.000	SQYD		
0042	SPSS504 - APPROACH SLABS	775.700	CUYD		
0043	SPSS504 - APPROACH GUTTERS	88.600	CUYD		
0044	SPSS505 - PORTLAND CEMENT CONCRETE DRIVEWAY	303.000	SQYD		
0045	506 - PORTLAND CEMENT CONCRETE CORRUGATIONS	163.000	SQYD		
0046	602 - FURNISHING FIELD LABORATORY	1.000	EACH		

State Job No.: 040904 Date Estimated: 7/15/2026
Job Name: CLEAR CREEK RD. – I-40 (PHASE 1) (F) Date Revised: 10/12/2026
Federal Aid Project: CPFCDS-NHPP-40-1(268)

Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
0047	SP&602 - FURNISHING FIELD OFFICE	1.000	EACH		
0048	SPSS603 - MAINTENANCE OF TRAFFIC	1.000	L.S.		
0049	603 - 24" TEMPORARY CULVERT	861.000	LF		
0050	603 - 48" TEMPORARY CULVERT	296.000	LF		
0051	SS&604 - SIGNS	1,593.000	SQFT		
0052	SPSS604 - SIGNS LEFT IN PLACE	20.000	SQFT		
0053	SPSS604 - CONSTRUCTION PROJECT INFORMATION SIGN UPDATE	3.000	EACH		
0054	SS&604 - BARRICADES	64.000	LF		
0055	SPSS604 - BARRICADES LEFT IN PLACE	48.000	LF		
0056	SS&604 - TRAFFIC DRUMS	217.000	EACH		
0057	SS&604 - FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	14,257.000	LF		
0058	SPSS604 - FURNISHING, INSTALLING AND LEAVING IN PLACE PRECAST CONCRETE BARRIER	640.000	LF		
0059	SS&604 - RELOCATING PRECAST CONCRETE BARRIER (MAX. BID 25% OF ITEM NUMBER 0057)	22,587.000	LF		
0060	604 - CONSTRUCTION PAVEMENT MARKINGS	56,147.000	LF		
0061	604 - REMOVABLE CONSTRUCTION PAVEMENT MARKINGS	121,392.000	LF		
0062	604 - REMOVAL OF PERMANENT PAVEMENT MARKINGS	3,222.000	LF		
0063	SPSS604 - PORTABLE CHANGEABLE MESSAGE SIGN	156.000	WEEK		
0064	SP - PORTABLE CONSTRUCTION LIGHTING	90.000	DAY		
0065	SP - AWIS MOBILIZATION	1.000	L.S.		
0066	SP - AWIS OPERATION	36.000	MNTH		
0067	SP - DEVICE RELOCATION	60.000	EACH		
0068	SP - FURNISH AND INSTALL CLOSED CIRCUIT TELEVISION SYSTEM	3.000	EACH		
0069	SP - FURNISH AND INSTALL VARIABLE MESSAGE SIGN	3.000	EACH		
0070	SP - FURNISH AND INSTALL VEHICLE DETECTION SYSTEM	12.000	EACH		
0071	SP - MOBILE SPEED NOTIFICATION SYSTEM (SPECIAL)	1.000	EACH		

State Job No.: 040904 Date Estimated: 7/15/2026
Job Name: CLEAR CREEK RD. – I-40 (PHASE 1) (F) Date Revised: 10/12/2026
Federal Aid Project: CPFCDS-NHPP-40-1(268)

Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
0072	SPSS605 - CONCRETE DITCH PAVING (TYPE B)	5,777.000	SQYD		
0073	SS&606 - 18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	134.000	LF		
0074	SS&606 - 24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	1,686.000	LF		
0075	SS&606 - 30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	928.000	LF		
0076	SS&606 - 36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	198.000	LF		
0077	SS&606 - 24" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	24.000	EACH		
0078	SS&606 - 30" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	12.000	EACH		
0079	SS&606 - 36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2.000	EACH		
0080	SP - CULVERT CLEAN OUT	7.000	EACH		
0081	SS&606 - 12" SIDE DRAIN	524.000	LF		
0082	SPSS606 - 18" SIDE DRAIN	284.000	LF		
0083	SPSS606 - 24" SIDE DRAIN	512.000	LF		
0084	SS&606 - SELECTED PIPE BEDDING	5,209.000	CUYD		
0085	SS&609 - DROP INLETS (TYPE N2)	5.000	EACH		
0086	SS&609 - DROP INLETS (TYPE N3)	8.000	EACH		
0087	SS&609 - DROP INLETS (TYPE RM)	14.000	EACH		
0088	SS&609 - DROP INLETS (TYPE ST)	2.000	EACH		
0089	SS&609 - DROP INLETS (TYPE TM)	15.000	EACH		
0090	SS&611 - 4" PIPE UNDERDRAINS	24,386.000	LF		
0091	SS&611 - UNDERDRAIN OUTLET PROTECTORS	112.000	EACH		
0092	SPSS611 - UNDERDRAIN VIDEO INSPECTION	4,942.000	LF		
0093	SP - FLUSHING UNDERDRAIN	4,942.000	LF		
0094	614 - CONCRETE SPILLWAY (TYPE A)	13.000	EACH		
0095	SS&617 - GUARDRAIL (TYPE A)	11,042.000	LF		
0096	SS&617 - TERMINAL ANCHOR POSTS (TYPE 1)	7.000	EACH		
0097	SS&617 - GUARDRAIL TERMINAL (TYPE 2)	17.000	EACH		
0098	SS&617 - THRIE BEAM GUARDRAIL TERMINAL	14.000	EACH		

State Job No.: 040904 Date Estimated: 7/15/2026
Job Name: CLEAR CREEK RD. – I-40 (PHASE 1) (F) Date Revised: 10/12/2026
Federal Aid Project: CPFCDS-NHPP-40-1(268)

Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
0099	SP - WIRE ROPE SAFETY FENCE	1,512.000	LF		
0100	SP - WIRE ROPE SAFETY FENCE MAINTENANCE MATERIALS	1.000	L.S.		
0101	SP - WIRE ROPE SAFETY FENCE (POST REPAIR)	50.000	EACH		
0102	SS&619 - WIRE FENCE (TYPE A)	49,590.000	LF		
0103	620 - LIME	598.000	TON		
0104	620 - SEEDING	298.830	ACRE		
0105	SS&620 - MULCH COVER	1,223.290	ACRE		
0106	620 - WATER	49,382.900	MGAL		
0107	621 - TEMPORARY SEEDING	924.460	ACRE		
0108	621 - SILT FENCE	56,990.000	LF		
0109	621 - SAND BAG DITCH CHECKS	6,886.000	BAG		
0110	621 - DIVERSION DITCH	7,232.000	LF		
0111	621 - SEDIMENT BASIN	5,533.000	CUYD		
0112	621 - OBLITERATION OF SEDIMENT BASIN	5,533.000	CUYD		
0113	621 - SEDIMENT REMOVAL AND DISPOSAL	8,224.000	CUYD		
0114	621 - PIPE FOR SLOPE DRAINS	1,615.000	LF		
0115	621 - ROCK DITCH CHECKS	801.000	CUYD		
0116	SS&621 - FILTER SOCK (12")	1,450.000	LF		
0117	621 - WATTLE (20")	25,977.000	LF		
0118	621 - TRIANGULAR SILT DIKE	3,230.000	LF		
0119	623 - SECOND SEEDING APPLICATION	298.830	ACRE		
0120	624 - SOLID SODDING	3,417.000	SQYD		
0121	625 - GEOTEXTILE FABRIC (TYPE 8)	75,948.000	SQYD		
0122	625 - GEOTEXTILE FABRIC (TYPE 10)	101,554.000	SQYD		
0123	SP&625 - GEOTEXTILE FABRIC (TYPE SPECIAL)	39,779.000	SQYD		
0124	SS&631 - CONCRETE BARRIER WALL (MEDIAN TYPE SPECIAL)	101.000	LF		
0125	SPSS631 - CONCRETE BARRIER WALL (SIDE TYPE A)	3,007.000	LF		
0126	SPSS631 - CONCRETE BARRIER WALL (SIDE TYPE E)	51.000	LF		
0127	SP&635 - ROADWAY CONSTRUCTION CONTROL	1.000	L.S.		
0128	636 - BRIDGE CONSTRUCTION CONTROL	1.000	L.S.		

State Job No.: 040904 Date Estimated: 7/15/2026
Job Name: CLEAR CREEK RD. – I-40 (PHASE 1) (F) Date Revised: 10/12/2026
Federal Aid Project: CPFCDS-NHPP-40-1(268)

Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
0129	637 - MAILBOXES	10.000	EACH		
0130	SS&637 - MAILBOX SUPPORTS (SINGLE)	10.000	EACH		
0131	642 - RUMBLE STRIPS IN ASPHALT SHOULDERS	8,003.000	LF		
0132	642 - RUMBLE STRIPS IN PORTLAND CEMENT CONCRETE SHOULDERS	484.000	LF		
0133	SP - ELECTRICAL CONDUCTORS-IN-CONDUIT (ROADWAY LIGHTING) (2C/3 A.W.G., E.G.C.)	3,621.000	LF		
0134	SP - ELECTRICAL CONDUCTORS-IN-CONDUIT (ROADWAY LIGHTING) (2C/4 A.W.G., E.G.C.)	3,022.000	LF		
0135	SP - ELECTRICAL CONDUCTORS-IN-CONDUIT (ROADWAY LIGHTING) (2C/8 A.W.G., E.G.C.)	4,370.000	LF		
0136	SP - ELECTRICAL CONDUCTORS FOR LUMINAIRES (ROADWAY LIGHTING)	504.000	LF		
0137	SP&709 - GALVANIZED STEEL CONDUIT (4")	2,706.000	LF		
0138	710 - NON-METALLIC CONDUIT (1.5")	4,935.000	LF		
0139	710 - NON-METALLIC CONDUIT (2")	6,862.000	LF		
0140	SP&710 - NON-METALLIC CONDUIT (4")	224.000	LF		
0141	SPSS711 - CONCRETE PULL BOX (TYPE 2 HD)	63.000	EACH		
0142	SPSS711 - FIBER OPTIC CONCRETE PULL BOX (TYPE 5 HD)	4.000	EACH		
0143	SP - ITS FIBER OPTIC JUNCTION BOX, METALLIC (32"X18"X18")	10.000	EACH		
0144	SP - HIGH MAST ILLUMINATION ASSEMBLY (150'-6 LUMINAIRE)	1.000	EACH		
0145	SP - HIGH MAST ILLUMINATION ASSEMBLY (120'-6 LUMINAIRE)	3.000	EACH		
0146	SP - HIGH MAST ILLUMINATION ASSEMBLY (120'-6 LUMINAIRE-PAD)	1.000	EACH		
0147	SP - HIGH MAST ILLUMINATION ASSEMBLY (120'-6 LUMINAIRE-PED)	4.000	EACH		
0148	SP - HIGH MAST ILLUMINATION ASSEMBLY (100'-6 LUMINAIRE)	1.000	EACH		
0149	SP - HIGH MAST LUMINAIRE ELEVATED SERVICE PLATFORM	4.000	EACH		
0150	SP - METAL GRATING FOR PLATFORM	886.200	SQFT		

State Job No.: 040904 Date Estimated: 7/15/2026
Job Name: CLEAR CREEK RD. – I-40 (PHASE 1) (F) Date Revised: 10/12/2026
Federal Aid Project: CPFCDS-NHPP-40-1(268)

Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
0151	SP - LED ROADWAY ILLUMINATION POLE (15,400 LUMEN, COBRA HEAD, BREAKAWAY BASE, 30')	6.000	EACH		
0152	SP - PEDESTAL TYPE SERVICE POINT ASSEMBLY (100 AMP)	5.000	EACH		
0153	718 - REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	4,278.000	LF		
0154	SP - ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (6")	18,996.000	LF		
0155	SP - ENHANCED THERMOPLASTIC PAVEMENT MARKING WHITE (12")	3,066.000	LF		
0156	SP - ENHANCED THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	16,547.000	LF		
0157	721 - RAISED PAVEMENT MARKERS (TYPE II)	619.000	EACH		
0158	SP - STEEL OVERHEAD SIGN STRUCTURE (OH-049-RAMP-100)	1.000	EACH		
0159	SP - STEEL OVERHEAD SIGN STRUCTURE (OH-049-101)	1.000	EACH		
0160	SP - STEEL OVERHEAD SIGN STRUCTURE (OH-049-103)	1.000	EACH		
0161	SP - STEEL OVERHEAD SIGN STRUCTURE (OH-049-RAMP-106)	1.000	EACH		
0162	SP - STEEL CANTILEVER SIGN STRUCTURE (OC-049-104)	1.000	EACH		
0163	SP - STEEL CANTILEVER SIGN STRUCTURE (OC-049-102)	1.000	EACH		
0164	SS&725 - GUIDE SIGN-ROADSIDE MOUNTED (DEMOUNTABLE LEGEND)	142.000	SQFT		
0165	SS&726 - STANDARD SIGN	583.000	SQFT		
0166	SS&727 - EXIT NUMBER PANEL (TYPE A)	20.000	SQFT		
0167	SS&729 - CHANNEL POST SIGN SUPPORT (TYPE U-1)	6.000	EACH		
0168	SS&730 - BREAKAWAY SIGN SUPPORT (TYPE G-2)	3,149.000	LB		
0169	SP - OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-1)	15.000	EACH		
0170	SP - OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G-2)	6.000	EACH		

State Job No.: 040904 Date Estimated: 7/15/2026
Job Name: CLEAR CREEK RD. – I-40 (PHASE 1) (F) Date Revised: 10/12/2026
Federal Aid Project: CPFCDS-NHPP-40-1(268)

Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
0171	SP - OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-1)	9.000	EACH		
0172	SP - OMNI-DIRECTIONAL BREAKAWAY SIGN SUPPORTS (TYPE G2-2)	2.000	EACH		
0173	SS&731 - TEMPORARY IMPACT ATTENUATION BARRIER	22.000	EACH		
0174	SS&731 - TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	22.000	EACH		
0175	SS&732 - CRASH CUSHION	2.000	EACH		
0176	801 - UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	790.000	CUYD		
0177	801 - UNCLASSIFIED EXCAVATION FOR STRUCTURES-ROADWAY	5,581.000	CUYD		
0178	SPSS802 - CLASS S CONCRETE-ROADWAY	11,222.140	CUYD		
0179	SPSS802 - CLASS S CONCRETE-BRIDGE	2,228.500	CUYD		
0180	SPSS802 - CLASS S(AE) CONCRETE-BRIDGE	4,167.100	CUYD		
0181	SP - TEMPORARY RETAINING WALL	9,194.000	SQFT		
0182	SP - ARCHITECTURAL FINISH	4,302.000	SQFT		
0183	SP - TEXTURED COATING FINISH	4,065.000	SQYD		
0184	SP&803 - CLASS 2 PROTECTIVE SURFACE TREATMENT	15,879.800	SQYD		
0185	SS&804 - REINFORCING STEEL-ROADWAY (GRADE 60)	1,704,043.000	LB		
0186	SS&804 - REINFORCING STEEL-BRIDGE (GRADE 60)	440,990.000	LB		
0187	SS&804 - EPOXY COATED REINFORCING STEEL (GRADE 60)	981,390.000	LB		
0188	SS&805 - STEEL PILING (HP 14X73)	5,545.000	LF		
0189	SP - CORING DRILLED SHAFT	353.000	LF		
0190	SP - DRILLED SHAFT (54" DIAMETER)	1,405.000	LF		
0191	SP - PERMANENT STEEL CASING (60" DIAMETER)	833.000	LF		
0192	SS&805 - PREBORING	4,500.000	LF		
0193	SP - CROSSHOLE SONIC LOGGING (54" DIAMETER)	48.000	EACH		
0194	SPSS807 - STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR50)	1,560,590.000	LB		

State Job No.: 040904 Date Estimated: 7/15/2026
Job Name: CLEAR CREEK RD. – I-40 (PHASE 1) (F) Date Revised: 10/12/2026
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Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
0195	SPSS807 - STRUCTURAL STEEL IN PLATE GIRDER SPANS (M270-GR50W)	3,582,580.000	LB		
0196	SS&807 - PAINTING STRUCTURAL STEEL	1,111.800	TON		
0197	SS&808 - ELASTOMERIC BEARINGS	144,893.000	CUIN		
0198	SS&809 - ARMORED JOINT WITH NEOPRENE STRIP SEAL	252.000	LF		
0199	SS&809 - SILICONE JOINT SEALANT	171.000	LF		
0200	812 - BRIDGE NAME PLATE (TYPE D)	6.000	EACH		
0201	SS&816 - FILTER BLANKET	14,858.000	SQYD		
0202	SS&816 - DUMPED RIPRAP	7,476.000	CUYD		
0203	SS&816 - CONCRETE RIPRAP	791.000	CUYD		
0333	SP - RETAINING WALL	4,693.000	SQFT		
				Section 01 Total:	
Section 02 - 24" PIPE CULVERTS ALTERNATE - BID ONE ITEM ONLY					
0204 A0 - 1	SS&606 - 24" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	124.000	LF		
0205 A0 - 2	SS&606 - 24" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	130.000	LF		
0206 A0 - 3	SS&606 - 24" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	130.000	LF		
0207 A0 - 4	SS&606 - 24" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	130.000	LF		
0208 A0 - 5	SPSS606 - 24" HIGH DENSITY POLYETHYLENE PIPE	130.000	LF		
0209 A0 - 6	SPSS606 - 24" PVC PIPE	130.000	LF		
				Section 02 Total:	

Arkansas Department of Transportation
Schedule of Items

State Job No.: 040904 Date Estimated: 7/15/2026
Job Name: CLEAR CREEK RD. – I-40 (PHASE 1) (F) Date Revised: 10/12/2026
Federal Aid Project: CPFCDS-NHPP-40-1(268)

Line Number	Item Code and Description	Estimated Quantity		Unit Bid Price	Price Extension
Section 03 - 36" PIPE CULVERTS ALTERNATE - BID ONE ITEM ONLY					
0210 B0 - 1	SS&606 - 30" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	166.000	LF	_____	_____
0211 B0 - 2	SS&606 - 30" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	172.000	LF	_____	_____
0212 B0 - 3	SS&606 - 30" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (16 GAUGE)	172.000	LF	_____	_____
0213 B0 - 4	SS&606 - 30" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERT (16 GAUGE)	172.000	LF	_____	_____
0214 B0 - 5	SPSS606 - 30" HIGH DENSITY POLYETHYLENE PIPE	172.000	LF	_____	_____
0215 B0 - 6	SPSS606 - 30" PVC PIPE	172.000	LF	_____	_____
				Section 03 Total:	_____
Section 04 - 16' GATES ALTERNATE - BID ONE ITEM ONLY					
0216 C0 - 1	SS&619 - 16' STEEL GATES	24.000	EACH	_____	_____
0217 C0 - 2	SS&619 - 16' ALUMINUM GATES	24.000	EACH	_____	_____
				Section 04 Total:	_____
				Subtotal:	_____
0218	601 - MOBILIZATION (UNIT BID AMOUNT MAY NOT EXCEED 5% OF SUBTOTAL)	1.000	L.S.	_____	_____
				Bid Total:	_____

This job requires A+B method bidding. Bidder must show total number of Calendar Days to substantially complete the specified site use work (B).

_____ Days X $35,000/Day = $_____ (B)

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 040904 LETTING DATE November 4, 2026

JOB NAME CLEAR CREEK RD. – I-40 (PHASE 1) (F)

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		

ARKANSAS DEPARTMENT OF TRANSPORTATION

CERTIFICATION STATEMENT

JOB 040904

Contractor's Certification Statement for National Pollutant Discharge Elimination System (NPDES) Construction Storm Water Permit Number ARR150000.

All Contractors operating on the site shall have the responsibility for compliance with Section 110 of the Standard Specifications for their operations, including, but not limited to: Good housekeeping practices, spill prevention, spill reporting and clean-up, and product specific practices such as limiting the discharge of concrete waste water to areas specified in the SWPPP.

Contractor Printed Name: _____

Signature: _____ **Title:** _____

Company Name: _____ **Date:** _____

Company Address: _____

Telephone No.: _____ **ARDOT Job Number:** _____