

ARKANSAS STATE HIGHWAY COMMISSION

PROPOSAL DOCUMENTS OF

FOR THE CONSTRUCTION OF

STATE JOB NO. 040815

STATE JOB

HWY. 23 FLOOD DAMAGE REPAIRS (FRANKLIN CO.) (S)

STATE HIGHWAY 23 SECTION 7

IN FRANKLIN 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.



CAUTION TO BIDDERS

Please review Section 102 of the Standard Specifications, 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 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

ARKANSAS DEPARTMENT OF TRANSPORTATION

NOTICE OF NONDISCRIMINATION

The Arkansas Department of Transportation (Department) complies with all civil rights provisions of federal statutes and related authorities that prohibit discrimination in programs and activities receiving federal financial assistance. Therefore, the Department does not discriminate on the basis of race, sex, color, age, national origin, religion (not applicable as a protected group under the Federal Motor Carrier Safety Administration Title VI Program), disability, Limited English Proficiency (LEP), or low-income status in the admission, access to and treatment in the Department's programs and activities, as well as the Department's hiring or employment practices. Complaints of alleged discrimination and inquiries regarding the Department's nondiscrimination policies may be directed to Joanna P. McFadden Section Head – EEO/DBE (ADA/504/Title VI Coordinator), P. O. Box 2261, Little Rock, AR 72203, (501)569- 2298, (Voice/TTY 711), or the following email address: joanna.mcfadden@ardot.gov

Free language assistance for Limited English Proficient individuals is available upon request.

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

Arkansas Department of Transportation
Supplemental Specifications and Special Provisions Listing
State Job Number 040815

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
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JOB SP	BIDDING REQUIREMENTS AND CONDITIONS
JOB SP	MANDATORY ELECTRONIC CONTRACT
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JOB SP	MAINTENANCE OF TRAFFIC
JOB SP	SPECIAL SEEDING REQUIREMENTS
JOB SP	PORTABLE TRAFFIC SIGNAL SYSTEM
JOB SP	FOUNDATION PROTECTION RIPRAP
JOB SP	SHORING FOR CULVERTS
JOB SP	WELLHEAD PROTECTION
JOB SP	WATER POLLUTION CONTROL
JOB SP	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB SP	STORM WATER POLLUTION PREVENTION PLAN
JOB SP	DELAY IN RIGHT OF WAY OCCUPANCY
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 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 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 404-3	DESIGN OF ASPHALT MIXTURES

Arkansas Department of Transportation
Supplemental Specifications and Special Provisions Listing
State Job Number 040815

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 410-1	CONSTRUCTION REQUIREMENTS AND ACCEPTANCE OF ASPHALT CONCRETE PLANT MIX COURSES
SS 410-2	DEVICES FOR MEASURING DENSITY FOR ROLLING PATTERNS
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)
SS 620-1	MULCH COVER

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 AWWA, Standards U1, Commodity Specification E, Use Category UC4C.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040815

ESTABLISHING CONTRACT TIME – WORKING DAY CONTRACT

- 1. General.** This method shall be used to establish the contract time (working days).
- 2. Definition of Terms. (a) Specified Site Use Work.** The specified site use work, shall consist of all items of work in the Contract.
 - (b) Working day.** As defined in Subsection 101.01 of the Standard Specifications.
 - (c) Contract Time.** The number of working days established by the bidder to complete the project.
 - (d) Substantially Complete.** The date at which time charges cease due to the completion of all pay items. The Engineer will be the sole authority in determining when the work is substantially complete. Site Use Work will be considered complete on this date.
 - (e) Bid Site Use Time.** The number of working days specified in the bid by the bidder as the time required to substantially complete the Specified Site Use Work.
 - (f) 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 working days to be used to substantially complete the Specified Site Use Work.

4. Assessment of Site Use Time.

Unless an emergency is declared or unless allowed by other job provisions, the Contractor shall not perform work that requires inspection on Sundays, legal holidays designated in Subsection 101.01 of the Standard Specifications, Edition of 2014, and Monday following a holiday on Sunday or Friday preceding a holiday on Saturday. If the Commission declares Friday following Thanksgiving Day as a Departmental holiday, the Contractor shall not perform work that requires inspection on this day.

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)** 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.

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SPECIAL PROVISION

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ESTABLISHING CONTRACT TIME – WORKING DAY CONTRACT

The Engineer will be the sole authority in determining when the Specified Site Use Work is substantially complete.

5. Contract Time and Liquidated Damages. Determination of working days charged, extensions of Contract Time, and assessment of liquidated damages for failure to complete all work within the Contract Time line will be made in accordance with the Section 108 of the Standard Specifications.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040815

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 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.

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040815

BIDDING REQUIREMENTS AND CONDITIONS

If the prospective bidder's prequalification rating is not "unlimited", the bidder shall file a certification with the Department citing all contracts in force and the unfinished value of such work. A prospective bidder will not be allowed to submit a proposal until a certification for the current bidding period is on file and the amount of work the contractor may be allowed to undertake is determined. The contractor's prequalification rating, less the unfinished value of all contracts in force, will determine the amount of additional work that the contractor may be allowed to undertake. A contractor will not be allowed to submit a proposal on an individual project for which the estimated cost is more than the amount that the contractor may be allowed to undertake, but the contractor will be allowed to submit a proposal on more than one project, providing that the estimated cost of each project is not more than the amount that the contractor may be allowed to undertake. In the event a contractor submits a low bid on more than one project and the aggregate amount is greater than the amount the contractor may be allowed to undertake, the Commission will exercise its discretion in the award of a particular project or projects.

A charge will be assessed for authorization to submit a proposal, paper copies of the proposal documents, and plans issued. These services are provided during regular business hours until 4:30 p.m. on the day prior to the scheduled bid opening at the Arkansas Department of Transportation, 10324 Interstate 30, Little Rock, Arkansas 72209, (501) 569-2261. Payment shall be made at the time services are provided or upon receipt of statement therefore. No refund will be allowed for bids not submitted or for plans or proposal documents returned.

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

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

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

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB NO. 040815

BIDDING REQUIREMENTS AND CONDITIONS

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.

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

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BIDDING REQUIREMENTS AND CONDITIONS

- (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.

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.

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SPECIAL PROVISION

JOB NO. 040815

BIDDING REQUIREMENTS AND CONDITIONS

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. 040815

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. 040815

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 this link:

http://ardot.gov/construction_division/Contractor_Guide_DocExpress.pdf.

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

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

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

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

ARKANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION
JOB NO. 040815
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 14 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 June 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 14, 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 NO. 040815
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 NO. 040815
SPECIAL CLEARING REQUIREMENTS

Section 201 Subsection 201.03 of the Standard Specifications for Highway Construction, 2014 Edition, is hereby amended by the addition of the following:

The Federally designated endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*) have the potential to occur within the project area. When not in hibernation, Indiana and northern long-eared bats utilize hardwood forests for foraging, roosting and maternal activities. In an effort to avoid potential impacts to endangered species, the clearing of trees is prohibited from March 15 through November 15. However, grubbing activities will be allowed during the entire calendar year.

The Contractor will be restricted from working in areas that were not cleared during the time period described. Failure to clear work areas will not be considered a cause for extending contract time and working days will continue to be assessed.

ARKANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION
JOB NO. 040815
CAVE DISCOVERY

DESCRIPTION: This Special Provision shall be supplemental to Section 107.10 of the Standard Specifications, 2014 Edition, and concerns the procedure to be followed upon discovery of a cave.

CONSTRUCTION METHODS: In the event the construction operations encounter any indications that a cave has been discovered, the Contractor shall notify the Engineer immediately of the location, and work will be discontinued in the area. If any opening into a cave is discovered, access shall be denied and the area secured to prevent unauthorized entry. The Environmental Division shall be contacted for a determination of the proper procedures to be followed.

ARKANSAS DEPARTMENT OF TRANSPORTATION**SPECIAL PROVISION****JOB NO. 040815****ROCK FILL**

Description. This item shall consist of excavation of existing material and construction of a rock fill to repair slope failures at the locations shown on the plans or designated by the Engineer in accordance with these specifications and to the lines, grades and dimensions shown on the plans or as directed by the Engineer.

Materials. Stone used for construction of the rock fill shall be obtained from an approved source and shall consist of sandstone, limestone, syenite, novaculite, or other hard and durable stone. Shale, slate, or similar materials shall not be used. The stone shall be greater than 1½ inches and less than 36 inches in any dimension. The stone shall be reasonably well graded and angular, with fractured faces on at least 75% of the surface and shall contain a minimum amount of fines less than 1½ inches in maximum cross-section. However, the last 12” of exposed surfaces of the rock fill shall have a maximum stone dimension of 6” within the limits of the designated clear zone. The stone shall weigh not less than 140 pounds per solid cubic foot and shall have a minimum slake durability index (SDI) of 95% as tested in accordance with AHTD Test Method 399. Rock fill placed in the vicinity of guardrail shall be reduced in size to accommodate driving of guardrail posts.

Construction Methods: Construction methods for Rock Fill shall be in accordance with the first two paragraphs of Section 630.03 of the Standard Specifications, and the following:

Before placing the rock fill, a trench shall be excavated and shaped as indicated on the plan drawings or as directed. In addition to excavating the existing material as directed by the Engineer in preparation for placing the rock fill, the Contractor will be required to clean and dress the existing ditches and slope faces as directed by the Engineer. Excess excavated material shall be disposed of as approved by the Engineer. The rock shall be dumped or placed substantially to the shape indicated on the plan drawings. During stone placement operations, larger rock shall be pushed to the lower portion of the rock fill. Objectionable voids between large rocks shall be filled with smaller stones or suitable granular material to provide adequate bearing surfaces for adjacent rocks. Efforts shall be made to set or compact the last 12” of exposed surfaces of the rock fill within the limits of the designated clear zone prior to any roadway construction operations. Care shall be exercised to place rock along the outside face that will present a reasonably pleasing appearance. The last 12” of the rock fill shall be aggregate base course (Class 7) meeting the requirements of Section 303 of the standard specifications. The aggregate base course will be paid as rock fill.

The work area shall be limited to 50 feet, or less of excavation as measured along the bottom of the area of repair as directed by the Engineer. No additional excavation will be allowed until suitable Rock Fill has been installed to prevent additional areas of failure.

Method of Measurement. Rock Fill will be measured by the ton.

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SPECIAL PROVISION

JOB NO. 040815

ROCK FILL

Basis of Payment. Work completed accepted and measured as provided above will be paid for at the contract unit price bid per ton for Rock Fill, which price shall be full compensation for excavating and disposing of the existing material; for furnishing, hauling, and placing and consolidating rock for cleaning and dressing ditches and slopes; and for all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item

Rock Fill

Pay Item

Ton

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SPECIAL PROVISION

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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 submitted electronically by use of the ACHM Microsoft Excel Spreadsheet for Contractors/Suppliers and on paper.

The ACHM Microsoft Excel Spreadsheet for Contractors/Suppliers can be downloaded from the following website: http://www.ardot.gov/contracts/contractor_information/contractor.aspx.

To download this file and the supporting documentation, click on the link labeled Contractor_ACHM.exe which is listed under User Help File and Utilities on the website noted above.

Use of this file requires Microsoft Excel 2000, 2003, or 2007.

The preferred method of transmitting the file is to e-mail the completed ACHM Microsoft Excel Spreadsheet for Contractors/Suppliers to the Department's ACHM Plant Inspector assigned to the project. It is also acceptable to transmit the file by Compact Disk (CD) or other electronic device. Regardless of the method of transmission used, the signed paper acceptance tests must be provided to the Resident Engineer.

Any questions or issues arising from the use of this file should be referred to the Resident Engineer.

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BROADBAND INTERNET SERVICE FOR ASPHALT CONCRETE PLANT

Section 409.03(h) of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following bullet is added under detailed requirements:

- 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.

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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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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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.

Once traffic is disrupted along Hwy 23, the Contractor shall pursue the work vigorously in an effort to restore the safe passage of traffic. Failure to restore safe traffic conditions within 20 calendar days will result in a site use charge of \$1000 per day for each calendar day. The time period of disruption will be measured from the day one lane of traffic is severed to the day both lanes of traffic are restored.

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

The Contractor shall notify the Engineer a minimum of 5 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 business days after the notification was given.

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.

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MAINTENANCE OF TRAFFIC

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.

General equipment storage areas or operations centers will be allowed within the limits of the right of way only where permitted by the Engineer.

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.

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SPECIAL SEEDING REQUIREMENTS

Clean equipment. Prior to moving equipment used in **Section 620** Seeding, **Section 621** Temporary Erosion Control Items and Devices, and **Section 623** Second Seeding Application onto National Forest Land the contractor shall clean equipment of seeds, soil, vegetative matter, and other debris that could contain or hold seeds.

Subsection 620.02(c) and (d) are hereby deleted and the following substituted therefore:

(c) Except as modified herein, the seed shall comply with the current rules and regulations of the Arkansas State Plant Board and the germination test shall be valid on the date the seed is used. A combined total of 50 noxious weed seeds shall be the maximum amount allowed per pound (110 per kg) of seed with the following exceptions: Johnson grass, mustard garlic, mimosa tree, Caucasian bluestem, musk thistle, tall fescue, sericea lespedeza, and kudzu seed will not be allowed in any amount. Seed shall be furnished in sealed, standard containers. Seed that has become wet, moldy, or otherwise damaged in transit or in storage will not be acceptable.

Seed must be from plants grown in Arkansas or adjacent states. Some of the specified varieties may be limited in availability.

Seed shall be composed of the varieties and amounts by Pure Live Seed (PLS) weight as shown below. Seed shall be tested and labeled with the % purity (pure seed) and % germination values. The seeding composition or origin may be altered by the Engineer with no adjustment in contract price. The alteration shall be on an equivalent cost basis.

Seed Variety:	lbs/acre	Kg/Ha
Big bluestem <i>Andropogon gerardii</i>	1.5	1.7
Little bluestem <i>Schizachyrium scoparium</i>	7	8
Indian grass <i>Sorghastrum nutans</i>	1.5	1.7
Cereal rye <i>Secale cereal</i>	100	112
Lanceleaf coreopsis <i>Coreopsis lanceolate</i>	4	5
Black-eye Susan <i>Rudbeckia hirta</i>	0.5	0.5
Gay feather <i>Liatris pycnostachya</i>	3	3
Partridge pea <i>Cassia fasciculata</i>	3	3
Butterfly milkweed <i>Asclepias tuberosa</i>	2	2
Pale Purple coneflower <i>Echinacea pallida</i>	2	2
Wild bergamont <i>Monarda fistulosa</i>	1	1

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If the seed is not purchased by PLS weight, the amount of seed required can be calculated from the % PLS.

$$\begin{array}{l} A = \% \text{ purity (pure seed)} \\ B = \% \text{ germination} \\ C = \% \text{ PLS} \end{array} \qquad \frac{A \times B}{100} = C$$

To determine the minimum weight of seed required per acre use the following equation:

$$\begin{array}{l} D = \text{seeding rate (as found in table above)} \\ E = \text{actual weight of seed} \end{array} \qquad \frac{D \times 100}{C} = E$$

(d) Mulch cover shall consist of straw from threshed rice, oats, wheat, barley, or rye; or of weed-free hay obtained from various legumes or grasses, but not from lespedeza, vetch, fescue, or Johnson grass.

Subsection 620.03(b) is hereby deleted and the following substituted therefore:

(b) Fertilization. Fertilizer shall be applied at the rate of 200 pounds per acre (220 kg/ha) of 6-28-28, or the equivalent amount of plant food. Fertilizer shall be uniformly incorporated into the soil alone or in conjunction with the required lime. If the Contractor so elects, the fertilizer may be drilled into the soil or combined with the seed in the hydro-seeding operation.

Subsection 620.03(c)(2) is hereby deleted.

Subsection 620.03(c) is hereby amended with the addition of the following:

This Special Seeding shall be performed between September 1 and April 30.

Subsection 620.03(e) shall be amended by the deletion of the second bullet, Asphalt Tackifier.

Subsection 620.05 is hereby amended by the addition of the following Pay Item:

Pay Items	Pay Unit
"Special Seeding: Native Grasses"	Acre (Hectare)
"Special Seeding: Native Wildflowers"	Acre (Hectare)

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Subsection 621.02 (a) and (b) is hereby amended as follows: "common rye grass" is deleted from the list of seed that can be used for temporary seeding.

Section 623.01 is hereby deleted and the following substituted therefore:

This item shall consist of furnishing and applying seed on all seeded areas during the planting season following the original seeding, as directed. The Engineer will determine whether a second seeding application is required.

Section 623.02 is hereby deleted and the following substituted therefore:

The seed mixture specified above under 620.02(c) above shall be used or modified by the Engineer. No additional fertilizer will be applied.

Section 623.03 is hereby deleted and the following substituted therefore:

The seed and fertilizer may be placed with a hydro-seeder or broadcast with hand seeders or approved power equipment. Warm season grasses shall be planted between April 1 and May 30, and Native forbs shall be planted between June 1 and October 31.

Section 623.05 is hereby amended by the addition of the following Pay Item:

Pay Item	Pay Unit
"Special Second Seeding"	Acre (Hectare)

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PORTABLE TRAFFIC SIGNAL SYSTEM

1. **DESCRIPTION.** This item shall consist of furnishing and installing at locations shown on the plans or as directed, a Portable Traffic Signal System. All requirements of Standard Specifications for Highway Construction, Edition of 2014, shall apply. Portions of the standard specifications may be superseded by these special provisions.

A. General. This specification outlines an operationally independent self contained system for temporary traffic control. Included are the specifications for the portable mast arm trailer, the traffic control unit with cabinet and terminal facility, vehicle actuation, wireless communications, solar system for battery charging, battery system and other ancillary equipment necessary to provide a complete working system.

B. Functional. The system shall include, as a minimum, the following features:

(a) Mast Arm Trailer:

The unit shall be a towable, trailer mounted, hydraulically lifted mast and arm. It shall have two (2) 12 inch, 3 section traffic signal heads with (optional) back-plates. The unit shall include a battery powered hydraulic pump for raising and lowering the arm. Lifting mechanisms using cable, winches, or linear actuators are not acceptable. The chassis of the unit shall provide multiple points at which auxiliary equipment may be mounted. The trailer shall have 15 inch wheels; fenders, and standard DOT required trailer lights. The unit shall have a drop tongue that can be hinged down and locked toward the ground as well as be removable. The tongue shall be provided with a standard 2" inch ball hitch. There shall be 2000 lb capacity extendable leveling jacks at each of the four corners of the trailer. In the folded position, the unit less the hitch shall not exceed the following over-all dimensions: 84" width, 150" length, or 114" height. The removable hitch will typically extend 56 inches in front of the trailer. In the horizontal position, the trailer mast arm shall have a fixed 9' reach from the side of the trailer and give a minimum of 17' feet clearance over the baseline established by the jacks. A lock or fixed mechanism shall keep the arm from lowering once the reach is established. With two ITE approved 12" 3-section signals in place: one at the outer end of the arm, the other mounted on the vertical mast, each equipped with optional back-plates and tunnel visors. The unit shall withstand 80 mph wind gusts. The wind gust rating assumes that the entire weight of the unit is carried by the jack stands, that the unit is level, and that the jack stands are on clean, dry pavement. The chassis and mast shall be labeled to designate pinch points, electrical hazards and overhead power line cautions. There shall be an electrical grounding lug provided to terminate to a user supplied driven electrical ground. The primary pivot point of the mast, when fully extended, shall have a positive mechanical lock to ensure that the mast remains upright. All other joints and extensions of the mast or arm shall have positive mechanical locks or pins to prevent the collapse or unauthorized movement or dismantling of the mast or arm. The unit shall have a receiver type hitch in the rear, enabling a receiver tube to be installed for towing multiple units in tandem. The unit shall include a rear electrical receptacle for

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plugging in lights from a 2nd unit for tandem towing. The hydraulic pump shall power the mast in both up and down directions. The pump flow shall be restricted to limit the maximum speed of travel of the arm to a safe speed. Operator safety shall be enhanced by the use of a nonconductive pendant to operate the pump via a minimum 6' long cable, allowing the operator to step away from the trailer so that he can clearly watch the mast as it rises to observe for power lines, traffic or other obstructions. The hydraulic pump and pump battery terminations shall be housed in a lockable enclosure. The unit shall be powder coated a highway safety orange, and have reflective decals placed appropriately to meet DOT requirements for where used. The unit shall have an axle and suspension rated adequately to handle the overall trailer weight. Trailers that have a gross weight over 3,000 lb, shall be equipped with trailer brakes. The system shall comply with the requirements for Portable Traffic Control Signals as defined in the Federal Manual of Uniform Traffic Control Devices (MUTCD), Part IV, 4D, including specifically the requirements pertaining to signal heads, lamps, spacing of signals, clearance, and number of signal faces. For optimizing signal viewing, signal mountings shall allow a 180 degrees' vertical axis of rotation and adjustments also for up and down alignments. The system shall be delivered with matching key padlocks for all the enclosures.

(b) Emergency Portable Mast Arm Knock-Down Capability:

Each independent portable signal trailer shall have the capability to flash yellow or red or be used as a "knock down" replacement portable mast arm, independent of other trailers. In this case the control system shall enable external AC signal inputs to run the LED signal heads independent of the normal control system.

(c) Traffic Signal Timer Controller:

The controller shall conform to NEMA TS-1 controller functionality and shall be menu driven through a menu driven display and keypad. The display shall be able to show programming parameters, and real time operational parameters not limited to each timing interval being timed including green min, green max, green extensions, yellow, and red as well as which phase is being timed. Standard traffic signal nomenclature shall be used, making the assumption that a movement of traffic is a phase and that individual parts of the phases timing are intervals. The controller shall have a minimum 8 phase controller functionality and shall have a minimum of 6 output circuits at each master or remote location. If the trailer signal outputs are DC for DC LED signal heads, provision shall be provided for running the DC signal heads from an AC signal source. The traffic controller shall have the following additional features:

- **GREEN RECYCLE:** The controller shall be set up to enable a "recycle" in the middle of the "all red clearance" time when the phase just clearing is headed toward a red rest but receives a vehicle call and there is no other phase receiving a call to service. When this controller is being operated in an actuated mode, this

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feature shall time an adjustable time interval, typically 5 seconds, before engaging the recycle. The recycle when activated recycles back to green of the last phase serviced, cutting off the remaining "all red time". (This is sometimes called "green revert".) In no case would the recycle be activated if vehicle calls (or any type of call to service) remain on any other phases. The all red time related to each phase using the "green recycle" is effectively made up of two timing intervals, the first a minimum 0-25.5 second interval and the second an interval of minimum 0-255 seconds.

- **CONTROLLER MEMORY:** The controller shall have the ability to register and retain a vehicle call on any designated phase if the vehicle call was made at the time when the clearance intervals were initiated. This is to insure that the phase is serviced at the next appropriate place in the controller phasing, reducing the likelihood of traffic being trapped in the "detection zone". The controller and power systems shall have adequate over current protection using breakers or fuses. Fuses shall be industry standards if used.
- **CONFLICT MONITOR:** The conflict monitor shall conform to minimum NEMA TS1 monitor functionality. Monitors shall be factory tested before installation. A multiple trailer signal system consisting of master-secondary arrangements shall, by design, remain inoperable unless the conflict monitor is installed. Provision shall be made in the monitoring system to accommodate different phasing and numbers of remote trailers. It shall also be able to monitor 5 section heads. Monitoring shall be done according to standard permanent signal conventional functionality except for having connections being made wireless through the radio system.
- **MODES OF FAILURE:** If the conflict monitor orders a fail mode, the traffic signals shall display a default flashing red (also programmable yellow, steady yellow and steady red) at both ends of the work zone. If there is a loss of power, the traffic signals shall be dark on the trailer affected and the traffic signals on the other trailer shall flash. The monitoring system shall be able to detect the difference between soft and hard fail conditions. If enabled, soft fail conditions such as losing the radio signal shall enable the system to restart if and when the soft fail condition is corrected.
- **I/O MAPPING:** The controller system inputs and outputs shall be map able. This shall as a minimum enable detector and phase assignments to be changed.
- **VEHICLE ACTUATION:** The system shall be able to run in pre-timed, actuated or semi-actuated modes. This shall be programmable through the keyboard. Each unit (Master and Secondary) shall have a non-intrusive vehicle detector mounted on its mast arm, which shall require no pavement cuts or any connection to the pavement. The detector shall be capable of covering one or more lanes and have a detection range of up to 200 feet for cars and trucks, assuming straight, level pavement. Other optional detection systems shall be

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compatible with system inputs.

- **PREEMPTION:** The control system shall be able to accommodate the addition of preempt inputs. The preemption programming shall be as typical for permanent traffic signal equipment.
- **TIME BASE COORDINATION:** The controller shall have an internal time clock and internal time base coordination. It shall have the optional capability to coordinate into existing traffic systems.

(d) Wireless Communication/Interconnection

The following shall be the minimum common requirements for the Wireless Transceiver. It shall:

- Operate in license-free, Spread Spectrum bands (902-928 MHz) utilizing Frequency Hopping.
- Be capable of maintaining wireless communication in all types of terrain without direct line of sight.
- Operate multiple user-selectable non-overlapping hopping patterns.
- Be completely configurable via the provided menu driven display/keypad.
- Provide Bi-directional radio transmission with confirmation.
- Real time' data transfer ensuring multiple transfers of data with error checking for live monitoring.
- Have LED indicators for PWR/RF Link Status.
- Have an operating temperature of -40 to +80 degrees C.
- Operate within the full operating voltage ranges of the DC system.
- Programmable RF output levels of 1 mW, 10 mW, 100 mW or 1 Watt c/o supplied operator interface.
- Operate as Master, Remote, or Repeater.
- Have RSSI signal strength indicator LEDS.
- Allow firmware updates c/o industry standard port.

(e) Radio Remote for Flagger or Pilot Car Control:

A hand held remote pendant shall be provided that can be used to increment the signals. Provision shall be provided to prevent the overriding the clearance times. It shall have a display showing the status of the trailer system signal indications. It shall be powered by a standard 12VDC cigarette lighter plug.

(f) Cabinet Requirements:

The radio, monitoring and control equipment shall be enclosed in a weather tight enclosure of NEMA 3R standards. It shall also contain a battery charger (120VAC input) and charge controller. The bottom of the cabinet shall have a spring loaded trap door access hole for running a power cord into the battery charger.

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(g) Signals:

The system shall be designed to use LED traffic signal heads. In a fail mode the signal system shall be programmable for flash or steady, and yellow or red color.

(h) Batteries:

The batteries shall be a deep cycle lead acid absorbed glass mat (AGM) type. They shall be hermetically sealed and shall be maintenance free. Batteries shall be housed in enclosure(s) secure from vandalism, theft, and weather. The enclosure(s) shall also keep the batteries securely in place during transport. Battery capacity on the Master and Secondary trailer shall be adequate to allow up to 21 consecutive days of operation without any additional charging.

(i) Solar Charging Option:

Each unit (Master and Secondary) shall have adequate solar charging capacity to insure that each can operate independently of line power or auxiliary charging devices for a minimum of the six best solar months in the 48 contiguous states of the United States. The solar array on each unit shall be capable of tilt adjustment on 2 axis in order to maximize the efficiency of the solar panels. The panels shall be fastened in a secure manner. Panel mounting hardware shall use high security bolt heads. The solar arrays shall be capable of being stowed in a manner so that they are entirely within the boundaries of the framework of the trailer, and minimize wind resistance when the trailer is towed.

(j) Battery Charger:

A 120VAC battery charger shall be provided for the instance when batteries need to be charged from an external source. It shall be rated at a minimum wattage of 360 watts.

(k) Charge Controller:

A charge controller shall be provided for interfacing between the solar panels, the control system, and the batteries. Any combination shall be able to be used simultaneously. It shall be maximum power point tracking, multiple stage and configurable to optimize charge parameters, battery temperature and AGM battery superior charge parameters. The charge controller shall be rated to handle the solar system maximum outputs. It shall have current limiting. It shall have a digital display to monitor charge performance.

(l) System Capabilities:

These trailer systems shall be able to be used within larger, compatible, portable traffic equipment and systems. The radio and control system shall be able to work

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within larger systems that have greater phasing capabilities, more complex deployments and larger power consumption needs such as 5 section head left turn movement, or side street signals and system with longer mast arms.

2. **MATERIALS AND CONSTRUCTION.** The Portable Traffic Signal System shall be furnished and installed at the site as indicated on the plan sheet(s). All materials and labor shall be considered included in the price for the Portable Traffic Signal System. Where specified as "actuated" vehicle detection as described elsewhere in this specification shall be furnished, installed and tested.
3. **METHOD OF MEASUREMENT.** Completed and accepted items Portable Traffic Signal System shall be measured by the unit.
4. **BASIS OF PAYMENT.** Work completed and accepted and measured as provided above will be paid for at the contract unit price bid as follows:

Price bid for **Portable Traffic Signal System** including vehicle detection system and associated equipment shall be full compensation for furnishing the equipment; installing and testing the system; maintenance of the equipment for the duration of the project; and for all materials, equipment, tools, labor, and incidentals necessary to complete the work.

Payment shall be made under:

Pay Item	Pay Unit
Portable Traffic Signal System - Actuated	Lump Sum

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FOUNDATION PROTECTION RIPRAP

Subsection 816.02(a)(3) Foundation Protection Riprap, of the Standard Specifications, Edition of 2014, shall be deleted and replaced with the following:

Pieces of stone or steel slag for foundation protection riprap shall be blocky with angular or fractured faces rather than elongated, platy, or round. Foundation protection riprap shall range in size from approximately 300 pounds to 2,000 pounds each, and shall be uniformly graded in such manner as to produce a minimum of voids

Dimensions of the stone or steel slag pieces shall generally have an aspect ratio of 3:1, where the longest dimension is no greater than three (3) times the length of the shortest dimension.

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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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WELLHEAD PROTECTION

Section 106.02 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added to **Section 106.02**:

Public drinking water well(s) are located in the vicinity of this project. Each well has a wellhead protection area delineated. The wellhead protection area identifies the area around the well in which Restraining Conditions as specified in Section 107.10 apply to protect drinking water quality. The Contractor shall, in all operations including materials excavation, make provision to minimize the potential impact to the local public drinking water sources resulting from work performed on this project.

Required actions of the Contractor shall include, but are not limited to, the following:

- 1) Excavations for borrow areas, material pits, or quarry sites shall not extend below ten (10) feet from normal ground surface within all wellhead protection areas shown on page 2.
- 2) No waste materials shall be disposed of in the borrow areas, material pits, or quarry sites within wellhead protection areas.

In the event that damage occurs to local public drinking water sources which is the result of the Contractor's actions or negligence, compensation shall be provided by the Contractor at no cost to the State.

The Contractor may request a variance from this special provision by submittal in accordance with 107.10(c)(2). The Contractor will not be granted additional compensation or contract time due to requested modifications of this special provision.

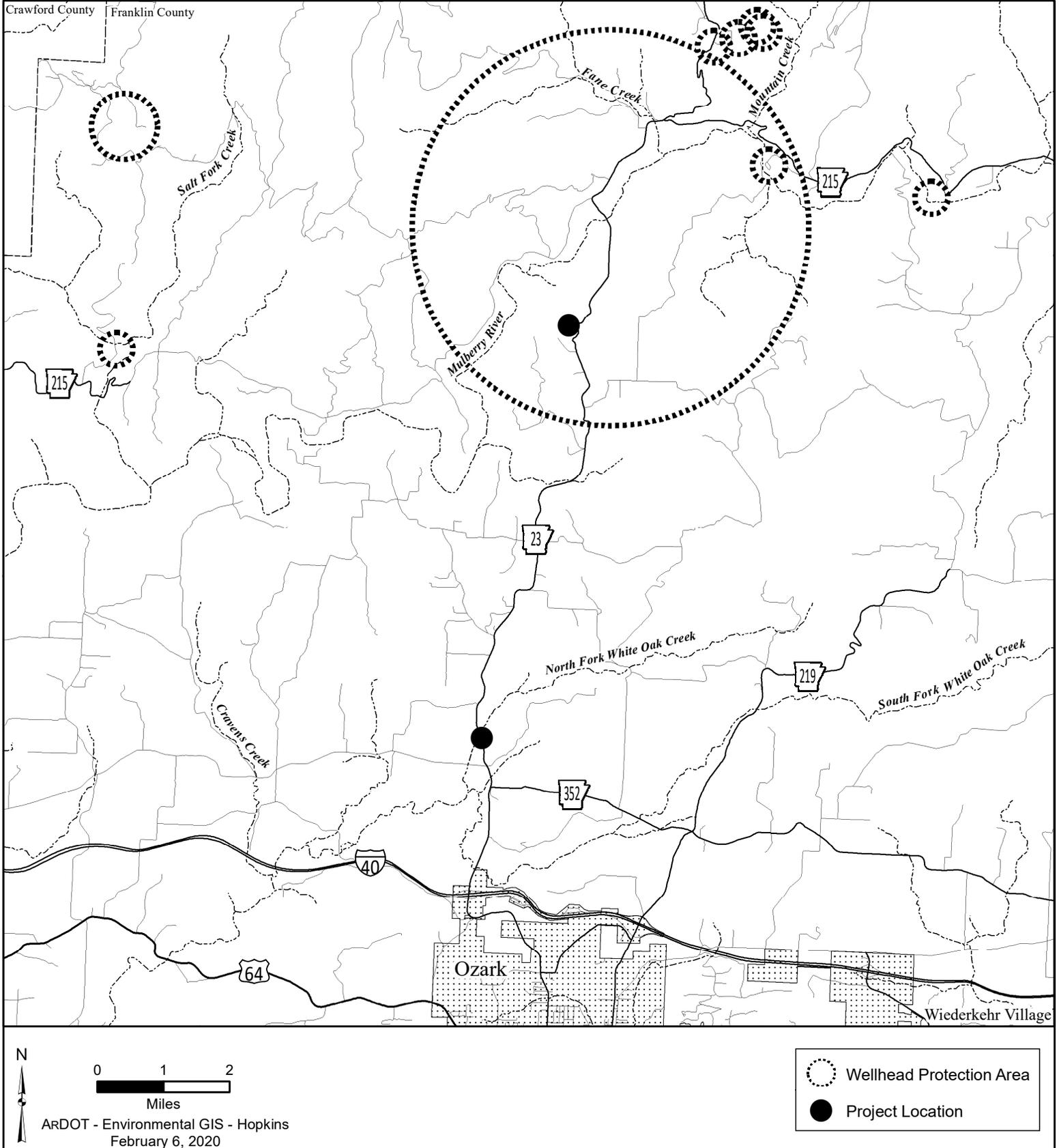
METHOD OF MEASUREMENT AND BASIS OF PAYMENT: The work involved in complying with this Special Provision will not be measured or paid for separately, but will be considered included in the contract unit prices bid for other items of the contract.

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WELLHEAD PROTECTION



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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 due to the proximity of tributaries to the Mulberry River. The Mulberry River is designated as an Extraordinary Resource Water (ERW) and Natural and Scenic Waterbody (NSW). 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.

ARKANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION
JOB NO. 040815
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), culvert(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 the FEMA. The regulatory floodway, regulatory floodplain, or SFHA limits are shown on the 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 United States 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.
- Temporary operations shall be designed and constructed so as not to result in a significant increase in flood elevations within the community during passage of a major flood.
- Temporary operations shall not obstruct a significant portion of an existing or proposed waterway opening.
- 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 box culvert(s) must be removed in their entirety, and the affected areas returned to their preconstruction or designed elevation and condition.
- 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.

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION
JOB NO. 040815
STORM WATER POLLUTION PREVENTION PLAN

National Pollution Discharge Elimination System
General Permit # ARR150000

Prepared for:

ARKANSAS DEPARTMENT OF TRANSPORTATION

Date: September 15, 2020

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* ADEQ Notice of Intent (NOI) submission, if ten business days have passed since the NOI was deemed complete, to be replaced by the completed Arkansas Department of Environmental Quality (ADEQ) Authorization Letter to Discharge Storm Water when it is sent by ADEQ.
 - ii. For small construction sites under five acres (automatic coverage sites) - the completed ADEQ Notice of Coverage for small sites from the ADEQ website.

PROJECT NAME AND LOCATION:

Job 040815, Hwy. 23 Flood Damage Repairs (Franklin Co.) (S)

ARKANSAS DEPARTMENT OF TRANSPORTATION
JOB NO. 040815
STORM WATER POLLUTION PREVENTION PLAN

OPERATOR NAME AND ADDRESS:

Arkansas Department of Transportation

Name of District Engineer Chad Adams

Address of District Headquarters

808 Frontier Road, Barling, AR 72923

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 purpose of this project is to restore the original stream bank limits that have migrated due to flooding. This project also includes the removal of unsuitable material from existing landslides and replace with rock buttresses.
- 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. Temporary Erosion Control Measures
- c. Channel Change of Existing Stream
- d. Construction of RC Pipe Culverts
- e. Final grading and reconstruction of the roadway
- f. Permanent seeding
- g. Removal of temporary erosion control items

4) Total Acres Available: 1.50 Total Disturbed Area: 1.10

(*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 permits obtained by another operator. The Contractor is also responsible for meeting local regulations regarding these sites, including those of a Qualifying Local Program).

ARKANSAS DEPARTMENT OF TRANSPORTATION
JOB NO. 040815
STORM WATER POLLUTION PREVENTION PLAN

5) Existing Site Information:

a. Runoff Coefficient Based on attachment C:

Before construction starts, the site has a runoff coefficient of 0.55

After construction is completed, the site will have a runoff coefficient of 0.55

b. Soil Information NA

B. Responsible Parties-General Contractors, Inspectors, etc:

Refer to Contractor identification form in Section Q and the Inspector identification form in Section R. 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. North Fork White Oak Creek
- b. _____
- c. _____

2) The following bodies of water receive runoff from the construction site:

Name of Operator of Municipal Storm Sewer and/or Receiving Stream: North Fork White Oak Creek

Narrative Description of Nearest Water: At the bridge structure of Hwy 23, the North Fork White Oak Creek flows approximately 9.8 miles then enters the 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 ADEQ.

Above categorized waterbodies, if any on project, list both waterbody and qualifier:
NA

D. TMDL and 303(d) list can be found at:
[\(http://www.adeq.state.ar.us/water/planning/integrated/\)](http://www.adeq.state.ar.us/water/planning/integrated/)

1) 303(d) Listed Waters - Select the following appropriate statement utilizing information received from the Environmental Division.

ARKANSAS DEPARTMENT OF TRANSPORTATION
JOB NO. 040815
STORM WATER POLLUTION PREVENTION PLAN

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: NA
- _____
- 2.) List measures taken to ensure that the discharge of pollutants from the site is consistent with the assumptions and allocations of the TMDL. NA
- _____

E. 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 that will minimize the discharge of pollutants as necessary to meet applicable water quality standards.

F. 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.

ARKANSAS DEPARTMENT OF TRANSPORTATION
JOB NO. 040815
STORM WATER POLLUTION PREVENTION PLAN

G. 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.

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 & Grubbing/Placement of perimeter control
- 2) Channel change & drainage structures/ditch checks, sedimentation basins, and silt fence/ongoing
- 3) Rough and final grading of embankments/silt fence, temporary seeding/ongoing
- 4) Paving & Final Striping/permanent seeding & permanent erosion control measures

2. Stabilization Practices: (Permit Pg. 5 of Part II)

List of Stabilization Practices to be utilized and scheduling of implementation for that practice:

- Dust control - wet down dusty areas as needed/ongoing
- Erosion control matting - _____
- Geotextiles - _____
- Limiting disturbed area - will be limited by Engineer as discussed in Subsection 110.05(d) of Standard Specifications/ongoing
- Mulches - on top of seeding
- Mulch control netting - _____
- Off-site tracking controls (Either stabilized exits and/or wheel washing)*
- Preserving existing vegetation - as shown on the job plans/ongoing
- Sod stabilization - will be placed around flared end sections of new pipe culverts
- 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.

ARKANSAS DEPARTMENT OF TRANSPORTATION
JOB NO. 040815
STORM WATER POLLUTION PREVENTION PLAN

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 ADEQ.

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.

Slope Tracking - _____

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. 6 of Part II)

List of Structural Practices to be utilized and scheduling of implementation for that practice:

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) _____

Curb & gutter - _____

Ditch checks** - _____

Diversion ditches - _____

Drainage swales - _____

Drop inlet silt fences - _____

Erosion Control Matting - _____

Gabions - _____

Inlet & outlet protection - _____

Silt fences - _____

Slope drains - _____

Storm sewer - _____

Retaining walls - _____

ARKANSAS DEPARTMENT OF TRANSPORTATION
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STORM WATER POLLUTION PREVENTION PLAN

_____ Temporary Silt Dikes - _____
_____ Wattles/Sediment Logs - _____
_____ Filter Socks - _____
_____ 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.

H. 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. 7 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.

**ARKANSAS DEPARTMENT OF TRANSPORTATION
 JOB NO. 040815
 STORM WATER POLLUTION PREVENTION PLAN**

I. Non-Storm Water Discharges: (Permit Pg. 11-12 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.H.2
- 2) Landscape Irrigation
- 3) 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.
- 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.

J. Post-Construction Storm Water Management: (Permit Pg. 7 of Part II)

Permanent Storm Water Management - List of devices to be utilized for storm water infiltration and management:

<input type="checkbox"/>	Channel linings	<input type="checkbox"/>	Concrete ditch paving
<input checked="" type="checkbox"/>	Culverts	<input type="checkbox"/>	Curb and gutter
<input type="checkbox"/>	Detention basins	<input type="checkbox"/>	Drop inlets
<input checked="" type="checkbox"/>	Dumped riprap	<input type="checkbox"/>	Floodgates
<input type="checkbox"/>	Gabions	<input type="checkbox"/>	Grassed swale
<input type="checkbox"/>	Inlet & outlet protection	<input checked="" type="checkbox"/>	Permanent seeding
<input type="checkbox"/>	Retention pond	<input checked="" type="checkbox"/>	Riprap
<input checked="" type="checkbox"/>	Solid sodding	<input type="checkbox"/>	Storm sewer
<input type="checkbox"/>	Topsoil replacement	<input type="checkbox"/>	Underdrains
<input type="checkbox"/>	Velocity dissipators	<input type="checkbox"/>	Wetland creation
<input type="checkbox"/>	Other-list _____		

Velocity dissipation devices:

<input type="checkbox"/>	Concrete spillways	<input type="checkbox"/>	Grouted riprap
<input checked="" type="checkbox"/>	Permanent seeding & mulch	<input type="checkbox"/>	Underdrains
<input checked="" type="checkbox"/>	Solid sodding	<input type="checkbox"/>	Concrete ditch paving
<input checked="" type="checkbox"/>	Dumped riprap	<input type="checkbox"/>	Detention basins
<input type="checkbox"/>	Velocity dissipators	<input type="checkbox"/>	Wetland infiltration
<input type="checkbox"/>	Other-list _____		

ARKANSAS DEPARTMENT OF TRANSPORTATION
JOB NO. 040815
STORM WATER POLLUTION PREVENTION PLAN

K. 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.

L. Inspections: (Permit Pg. 8 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.

ARKANSAS DEPARTMENT OF TRANSPORTATION
JOB NO. 040815
STORM WATER POLLUTION PREVENTION PLAN

M. 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. 9 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.4.M.

N. 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.**

O. 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) 569-2522, or the U.S. Fish and Wildlife Service at (501) 513-4489.

P. 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.

ARKANSAS DEPARTMENT OF TRANSPORTATION
JOB NO. 040815
STORM WATER POLLUTION PREVENTION PLAN

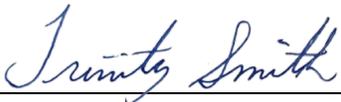
S. Plan Certification: (Permit Pg. 9 of Part II) (To be completed by a duly authorized representative or the cognizant official.)

"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: Trinity D. Smith

Printed Title: Engineer of Roadway Design

Signature:  *CLM*

Date: 9-16-2020

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB 040815

DELAY IN RIGHT OF WAY OCCUPANCY

Right of occupancy and use of the right of way for the following areas will be delayed until December 11, 2020, to allow for the completion of acquisition activities.

<u>Tract</u>	<u>Approximate Station Locations</u>
1	300+25 to 303+57 Rt.
2	400+00 to 403+00 Rt.

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.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

JOB 040815

UTILITY ADJUSTMENTS

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.

There are no known utility conflicts or adjustments needed for this project.

The Contractor should make every effort to locate buried utilities including, but not limited to, calling Arkansas One Call Center (800) 482-8998.

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 tables:

WORKING DAY PROJECTS

ORIGINAL CONTRACT AMOUNT		RATE
FROM MORE THAN	TO AND INCLUDING	-----
\$ 0	\$ 50,000	\$ 400
50,000	100,000	700
100,000	500,000	800
500,000	1,000,000	1,100
1,000,000	2,000,000	1,300
2,000,000	5,000,000	1,500
5,000,000	10,000,000	1,900
10,000,000	15,000,000	2,000
15,000,000	20,000,000	2,100
20,000,000	-----	2,500

FIXED DATE PROJECTS

ORIGINAL CONTRACT AMOUNT		RATE
FROM MORE THAN	TO AND INCLUDING	-----
\$ 0	\$ 50,000	\$ 90
50,000	100,000	100
100,000	500,000	200
500,000	1,000,000	250
1,000,000	2,000,000	320
2,000,000	5,000,000	400
5,000,000	10,000,000	600
10,000,000	-----	750

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 license 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 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.

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
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 0.10 gallon per square yard (0.1 L/sq m to 0.5 L/sq m) 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 third paragraph **Subsection 404.04** is hereby deleted and the following substituted therefore:

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. The asphalt mixture shall be verified by testing mix that has been produced through the plant using the aggregate proportions shown on the accepted mix design. Production of Department approved mix designs for placement on non-ARDOT projects may be used for mix verification. 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.

Section 410, Construction Requirements and Acceptance of Asphalt Concrete Plant Mix Courses is hereby modified as follows:

The first and second sentence of **Subsection 410.09, Acceptance of the Payment and Adjustments in Payment**, is hereby deleted and the following is substituted therefore:

- (a) General. 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.

Section 411, Asphalt Concrete Plant Mix is hereby modified as follows:

The third sentence of Subsection 411.05 (B), Acceptance is hereby amended and the following is substituted therefore:

- (b) Acceptance. 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 Paragraph 1 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 4% Air Voids (AV).

The first bullet of Paragraph 1 is hereby deleted and the following substituted therefor:

- PG 64-22 and PG 70-22 mixes will be designed using 4% air voids;

The second sentence of Paragraph 2 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 re-design of the mixture shall be based on production of the mixture at a target value of 4.0% Air Voids (AV) in specimens and an asphalt binder content not less than that specified in the accepted mix design.

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 Mix Base Course		
(1-1/2" [37.5 mm])		
Control Points		
Sieve (mm)	Percent Passing (%)	
2" (50.0)	100	
1½" (37.5)	90 - 100	
1" (25.0)	90 max.	
No. 4 (4.75)	-	
No. 8 (2.36)	15 - 41	
No. 16 (1.18)	-	
No. 30 (0.60)	-	
No. 50 (0.30)	-	
No. 200 (0.075)	0 - 6	
Asphalt Binder Content	Design Value	
% Air Voids	4.0	
% VMA	11.5 – 13.0	
Minimum Water Sensitivity Ratio	80.0	
% Anti-strip	As Required	
Fines to Asphalt Ratio*	0.6 – 1.6	
Wheel Tracking Test	<u>Design Gyration</u>	<u>Maximum Rut</u>
(8000 cycles, 100 psi, 64°C)	75 & 115	0.315 in. (8.000 mm)
	160	0.197 in. (5.000 mm)
	205	0.197 in. (5.000 mm)

*Fines to asphalt ratio shall be defined as the percent materials passing the No. 200 (0.075 mm) 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 Mix Binder Course (1" [25 mm])		
Control Points		
Sieve (mm)	Percent Passing (%)	
1½" (37.5)	100	
1" (25.0)	90 - 100	
¾" (19.0)	90 max.	
No. 4 (4.75)	-	
No. 8 (2.36)	19 - 45	
No. 16 (1.18)	-	
No. 30 (0.60)	-	
No. 50 (0.30)	-	
No. 200 (0.075)	1 - 7	
Asphalt Binder Content	Design Value	
% Air Voids	4.0	
% VMA	12.5 – 14.0	
Minimum Water Sensitivity Ratio	80	
% Anti-strip	As Required	
Fines to Asphalt Ratio*	0.6 – 1.6	
Wheel Tracking Test (8000 cycles, 100 psi, 64°C)	<u>Design Gyration</u>	<u>Maximum Rut</u>
	75 & 115	0.315 in. (8.000 mm)
	160	0.197 in. (5.000 mm)
	205	0.197 in. (5.000 mm)

*Fines to asphalt ratio shall be defined as the percent materials passing the No. 200 (0.075 mm) 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 Mix Surface Course (1/2" [12.5 mm])		
Control Points		
Sieve (mm)	Percent Passing (%)	
3/4" (19.0)	100	
1/2" (12.5)	90 - 100	
3/8" (9.5)	90 max.	
No. 8 (2.36)	28 - 58	
No. 16 (1.18)	-	
No. 30 (0.60)	-	
No. 50 (0.30)	-	
No. 200 (0.075)	2 - 10	
Asphalt Binder Content	Design Value	
% Air Voids	4.0	
% VMA	14.0 – 16.0	
Minimum Water Sensitivity Ratio	80.0	
% Anti-strip	As Required	
Fines to Asphalt Ratio*	0.6 – 1.6	
Wheel Tracking Test (8000 cycles, 100 psi, 64°C)	<u>Design Gyration</u>	<u>Maximum Rut</u>
	75 & 115	0.315 in. (8.000 mm)
	160	0.197 in. (5.000 mm)
	205	0.197 in. (5.000 mm)

*Fines to asphalt ratio shall be defined as the percent materials passing the No. 200 (0.075 mm) 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" [9.5 mm])

	Control Points	
Sieve (mm)	Percent Passing (%)	
½" (12.5)	100	
3/8" (9.5)	90 - 100	
No. 4 (4.75)	90 max.	
No. 8 (2.36)	32 - 67	
No. 16 (1.18)	-	
No. 30 (0.60)	-	
No. 50 (0.30)	-	
No. 200 (0.075)	2 - 10	
Asphalt Binder Content	Design Value	
% Air Voids	4.0	
% VMA	15.0 – 17.0	
Minimum Water Sensitivity Ratio	80.0	
% Anti-strip	As Required	
Fines to Asphalt Ratio*	0.6 – 1.6	
Wheel Tracking Test	<u>Design Gyration</u>	<u>Maximum Rut</u>
(8000 cycles, 100 psi, 64°C)	75 & 115	0.315 in. (8.000 mm.)
	160	0.197 in. (5.000 mm)
	205	0.197 in. (5.000 mm)

*Fines to asphalt ratio shall be defined as the percent materials passing the No. 200 (0.075 mm) sieve (expressed as a percent of total aggregate weight) divided by the effective asphalt binder content.

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

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

**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

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/cm²) at 5% deflection and shall be capable of 60 percent vertical deflection in parallel plate loading without splitting or cracking when tested in accordance with ASTM D 2412.

The second sentence of **Subsection 617.02(a)(2), Materials for Steel Posts**, is hereby deleted and the following is substituted therefor:

- (2) **Steel Posts.** The steel shall comply with ASTM A709, Grade 36 (250).

Subsection 617.02(b)(3), Materials for Terminal Anchor Posts, is hereby deleted and the following is substituted therefor:

- (3) The steel anchor posts shall consist of structural shapes of the section shown on the plans, or as otherwise specified, and shall comply with ASTM A709, Grade 36 (250). The upper 15" (380 mm) of the anchor assembly shall be galvanized according to AASHTO M 111.

The third sentence of the third paragraph **Subsection 618.02(a), Posts for Guard Cable**, is hereby deleted and the following is substituted therefor:

- The steel shall comply with ASTM A709, Grade 36 (250).

Subsection 618.02(d), Materials for Bolts, Nuts, and Washers, is hereby deleted and the following is substituted therefor:

ARKANSAS DEPARTMENT OF TRANSPORTATION**SUPPLEMENTAL SPECIFICATION****INCIDENTAL CONSTRUCTION**

- (d) Bolts, Nuts, and Washers.** Bolts, nuts, and washers shall conform to the plans and shall be steel complying with ASTM A 307, ASTM F3125, Grade A325, Heavy Hex, Type 1, or ASTM A449 (Heavy Hex), galvanized according to AASHTO M 232. Threads on bolts and nuts shall conform to Unified Coarse Thread Series Class 2A, ANSI B 1.1 (Metric Coarse Thread Series, ANSI B 1.13M, 6g tolerance).

ARKANSAS DEPARTMENT OF TRANSPORTATION**SUPPLEMENTAL SPECIFICATION****LANE CLOSURE NOTIFICATION**

Division 600 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Section 603, Maintenance of Traffic and Temporary Structures, is hereby modified as follows:

The first sentence of the third paragraph **Subsection 603.02 (d)** is hereby deleted and the following substituted therefor:

The Contractor shall provide the Engineer with a minimum of five full business days advance, written notification of any nonemergency lane closure or lane width restriction. The first full business day shall commence at midnight on the first business day following written notification to the Engineer. This advanced notification is required to allow adequate notice for the issuance of over width load permits by the Department.

ARKANSAS DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION
RETROREFLECTIVE SHEETING FOR
TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES

Section 604 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is inserted after the first paragraph of Subsection 604.02(b):

Retroreflective sheeting used on traffic drums shall meet the requirements of ASTM D4956 for Type III or IV with the additional requirements for Reboundable Sheeting. Retroreflective sheeting for delineators shall comply with section 728.

Retroreflective sheeting shall be applied to a properly treated substrate with mechanical equipment and in a manner specified by the sheeting manufacturer. Sign material (substrate) shall be of sufficient thickness and stability to maintain a substantial, effective sign for the duration of the project. One splice will be allowed in retroreflective sheeting on sign blanks. "Left", "Right", "Distances", and "Ahead" will be allowed on signs as inserts. All letters and numerals on inserts shall be of the same size and series as those on the sign face.

ARKANSAS DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION

TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES (MASH)

Section 604 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The first paragraph of **Subsection 604.02 Materials (a) General** is hereby deleted and the following substituted therefor:

All work zone traffic control devices used on the project, including sign supports, barricades, traffic drums equipped with flashing lights, crash cushions, and impact attenuators, manufactured after December 31, 2019, shall comply with the requirements of the Manual for Assessing Safety Hardware (MASH). Such devices manufactured on or before December 31, 2019, and successfully tested to the requirements of National Cooperative Highway Research Program (NCHRP) Report 350 or the 2009 edition of MASH, may continue to be used throughout their normal service lives. The Contractor shall furnish a certification of such compliance from the manufacturer or supplier of all work zone traffic control devices prior to using the devices on the project. The certification shall state the device meets the requirements of MASH, or in the case that the device was manufactured on or before December 31, 2019, the certification shall state the device meets the requirements of NCHRP 350 or MASH. The certification shall include a copy of the Federal Highway Administration's (FHWA) approval letter with all attachments for each device. Devices shall be fabricated and installed in accordance with the plans and with the crash testing documentation provided in the FHWA approval letter which is available at:

http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/.

ARKANSAS DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION
Mulch Cover

Section 620 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

Subsection **620.02 Materials (d)** is hereby deleted and the following substituted therefore:

(d) Mulch cover. Shall be a mulch cover system as listed on the Department's Qualified Products List (QPL) or shall consist of straw from threshed rice, oats, wheat, barley, or rye; of wood excelsior; or of hay obtained from various legumes or grasses, such as lespedeza, clover, vetch, soybeans, bermuda, carpet sedge, bahia, fescue, or other legumes or grasses; or a combination thereof. Mulch shall be dry and reasonably free from Johnson grass or other noxious weeds, and shall not be excessively brittle or in an advanced state of decomposition. All material will be inspected and approved prior to use.

The following is inserted after Subsection **620.03 Construction Requirements (c) Seeding (3) Hydro-seeding:**

(4) Mulch Cover. If a mulch cover system listed on the Department's Qualified Products List (QPL) is used then the mulch cover and the seed may be incorporated into one operation.

Subsection **620.03 Construction Requirements (d)** is hereby deleted and the following substituted therefore:

(d) Mulch Cover. If a Mulch Cover system listed on the Department's Qualified Products List (QPL) is used then refer to the application rate listed in the QPL otherwise the mulch cover shall be applied at the rate of 4000 pounds per acre (4500 kg/ha). If the mulch cover and seed are not incorporated into one operation then apply the mulch cover immediately after seeding and spread the mulch cover uniformly over the entire area by approved power mulching equipment. When approved by the Engineer, the Contractor may use hand methods to apply mulch cover to small or inaccessible areas. If the Contractor so elects, an approved mulching machine may be used, whereby the application of mulch cover and tackifier may be combined into one operation. If this method is used, no change in application rates will be allowed. In its final position, the anchored mulch shall be loose enough to allow air to circulate, but compact enough to partially shade the ground and reduce the impact of rainfall on the surface of the soil. Care shall be taken to prevent tackifier materials from discoloring or marking structures, pavements, utilities, or other plant growth. Removal of any objectionable discoloration shall be at no cost to the Department.

**ARKANSAS DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION**

Mulch Cover

The first paragraph of subsection **620.03 Construction Requirements (e)** is hereby deleted and the following substituted therefore:

(e) Mulch Anchoring. If a mulch cover system is selected from the Department's Qualified Products List (QPL) then no additional anchoring is needed. If a mulch cover system is not used then immediately following or during the application of mulch cover on seeded areas, the mulch shall be anchored by one of the following methods.

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GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY
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JOB 040815	SPECIAL CLEARING REQUIREMENTS
JOB 040815	SPECIAL SEEDING REQUIREMENTS
JOB 040815	STORM WATER POLLUTION PREVENTION PLAN
JOB 040815	SUBMISSION OF ASPHALT CONCRETE HOT MIX ACCEPTANCE TEST RESULTS
JOB 040815	UTILITY ADJUSTMENTS
JOB 040815	WARM MIX ASPHALT
JOB 040815	WATER POLLUTION CONTROL
JOB 040815	WELLHEAD PROTECTION

GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE 2-WAY RADIO COMMUNICATIONS FOR FLAG PERSONS.
2. THE CONTRACTOR SHALL FURNISH AND MAINTAIN STD. W8-1 "BUMP" SIGNS (30" X 30") WITH BLACK LEGEND ON ORANGE BACKGROUND AT ALL TRANSVERSE JOINTS EXPOSED TO TRAFFIC.
3. PREPARATORY WORK, SUCH AS CLIPPING THE GRASS AND DEBRIS FROM THE EDGE OF THE EXISTING ROADWAY, WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED A PART OF THE OTHER ITEMS OF WORK. AFTER THE ROADWAY IS COMPLETED, THIS MATERIAL SHALL BE PULLED UP TO THE EDGE OF THE NEW PAVEMENT. HOWEVER, THIS MATERIAL SHALL BE PULLED UP TO THE EDGE OF THE NEW PAVEMENT IMMEDIATELY AT LOCATIONS WHERE DROP-OFFS GREATER THAN 4" RESULT FROM THE OVERLAY. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK.
5. WHERE EXISTING SHOULDERS ARE TO BE OVERLAID OR NEWLY CONSTRUCTED SHOULDERS ARE TO BE SURFACED, THE CROSS SLOPE SHALL BE AS DIRECTED BY THE ENGINEER (NORMALLY BETWEEN 2% AND 6%).
6. WHEN LEVELING OF THE DRIVING LANES IS REQUIRED, IT MAY, IF APPROVED BY THE ENGINEER, BE PLACED AT THE SAME TIME AS THE SUCCEEDING COURSE IF THEY ARE OF THE SAME TYPE MATERIAL.
7. WHEN COLD MILLING IS INCLUDED IN THE CONTRACT, THE CONTRACTOR SHALL PROVIDE A TEMPORARY TRANSITION IN AREAS OF PAVEMENT DIFFERENTIAL RESULTING FROM THE COLD MILLING. MEASUREMENT FOR THE MATERIAL USED WILL BE BASED ON THE ACCEPTED MIX DESIGN FOR THE TYPE OF ASPHALT HOT MIX SPECIFIED IN THE PLANS FOR THE MAT TO BE PLACED AFTER COLD MILLING; AND PAYMENT WILL BE AT THE CONTRACT UNIT PRICES BID FOR THE VARIOUS COMPONENTS OF THE MIX.
8. THE EDGE LINES SHALL NOT BE PLACED ON THE FINISHED ASPHALT SURFACE UNTIL AFTER ALL WORK ADJACENT TO THE PAVEMENT EDGE, INCLUDING SPREADING, COMPACTING AND ETC. IS COMPLETED IN ORDER TO AVOID DAMAGING THE EDGE LINES.
9. THE CONTRACTOR SHALL SCHEDULE HIS WORK SO THAT NO LANE CLOSURES EXIST FOR THE TIME PERIOD OF THE DAY BEFORE THE HOLIDAY THROUGH THE DAY AFTER THE HOLIDAY FOR THE FOLLOWING LEGAL HOLIDAYS: NEW YEARS DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING AND THE DAY AFTER, AND CHRISTMAS. IF THE LEGAL HOLIDAY IS IMMEDIATELY FOLLOWING A WEEKEND, THE WEEKEND WILL BE CONSIDERED A PART OF THE HOLIDAY.
10. ASPHALT DEBRIS RESULTING FROM THE PREPARATORY WORK SHALL BE REMOVED FROM THE PROJECT. THIS MATERIAL SHALL NOT BE BURIED WITHIN THE RIGHT OF WAY.
11. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO MODIFY THEIR SCHEDULE, DURING WORK, WHEN SPECIAL EVENTS OR OCCURRENCES MAY CAUSE TRAFFIC TO BECOME CONGESTED.
12. THIS PROJECT IS PERMITTED UNDER A SECTION 404 NATIONWIDE 13 & 14 PERMIT. THE CONTRACTOR SHALL FOLLOW ALL COMPLIANCE MEASURES REQUIRED FOR THE SECTION 404 NATIONWIDE PERMITS NOTED IN THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 2014

C.L.
CONST.

24'-0" ACHM
SURFACE COURSE (1/2")
220 LBS./SO. YD.

VAR. ACHM
SURFACE COURSE (1/2")
220 LBS./SO. YD.

VAR. 2'-0"
TO 13'-0" SHLD.

2'-0" SHLD.
11'-0" LANE
11'-0" LANE

0.040'/' (TYP.) 0.020'/' (TYP.) 0.020'/' (TYP.) 0.040'/' (TYP.)

EXIST. SLOPE

TIE IN WITH
AGGREGATE BASE
COURSE (CLASS 7)

EXIST. SLOPE

ROCK BUTTRESS

BENCH BASE OF BUTTRESS
INTO COMPETENT BEDROCK

26'-0" EXISTING PAVEMENT
OVERLAY 11' & CONSTRUCT VAR. SHOULDER
2 LANE OPEN SHOULDER SECTION

STA 400+50 TO 402+00

NOTES:

REFER TO CROSS SECTIONS FOR DEVIATION FROM THE NORMAL SLOPES. NO CHANGES SHALL BE MADE FROM THE PLANNED SLOPES WITHOUT THE APPROVAL OF THE ENGINEER.

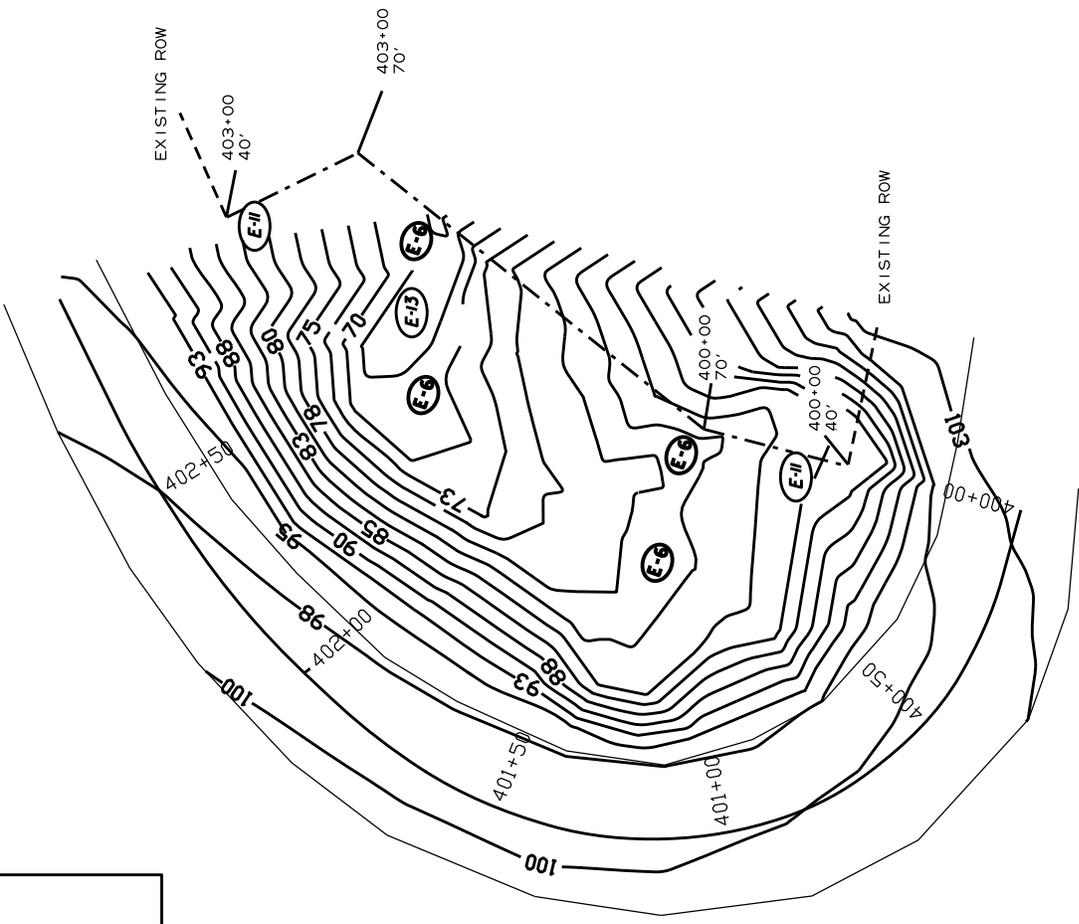
THE EXISTING ASPHALT PAVEMENT TO BE REMOVED FROM THE REMAINING PAVEMENT SHALL BE SEPARATED BY SAWING ALONG A NEAT LINE. AFTER SAWING, THE PAVEMENT TO BE REMOVED SHALL BE CAREFULLY REMOVED IN A MANNER THAT WILL NOT DAMAGE THE PAVEMENT THAT IS TO REMAIN. ANY DAMAGE OF THE ASPHALT PAVEMENT THAT IS TO REMAIN IN PLACE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE

PAYMENT OF UNCLASSIFIED EXCAVATION IN THE LIMITS OF ROCK FILL WILL NOT BE PAID DIRECTLY BUT PAYMENT IS CONSIDERED SUBSIDIARY TO THE ITEM ROCK FILL

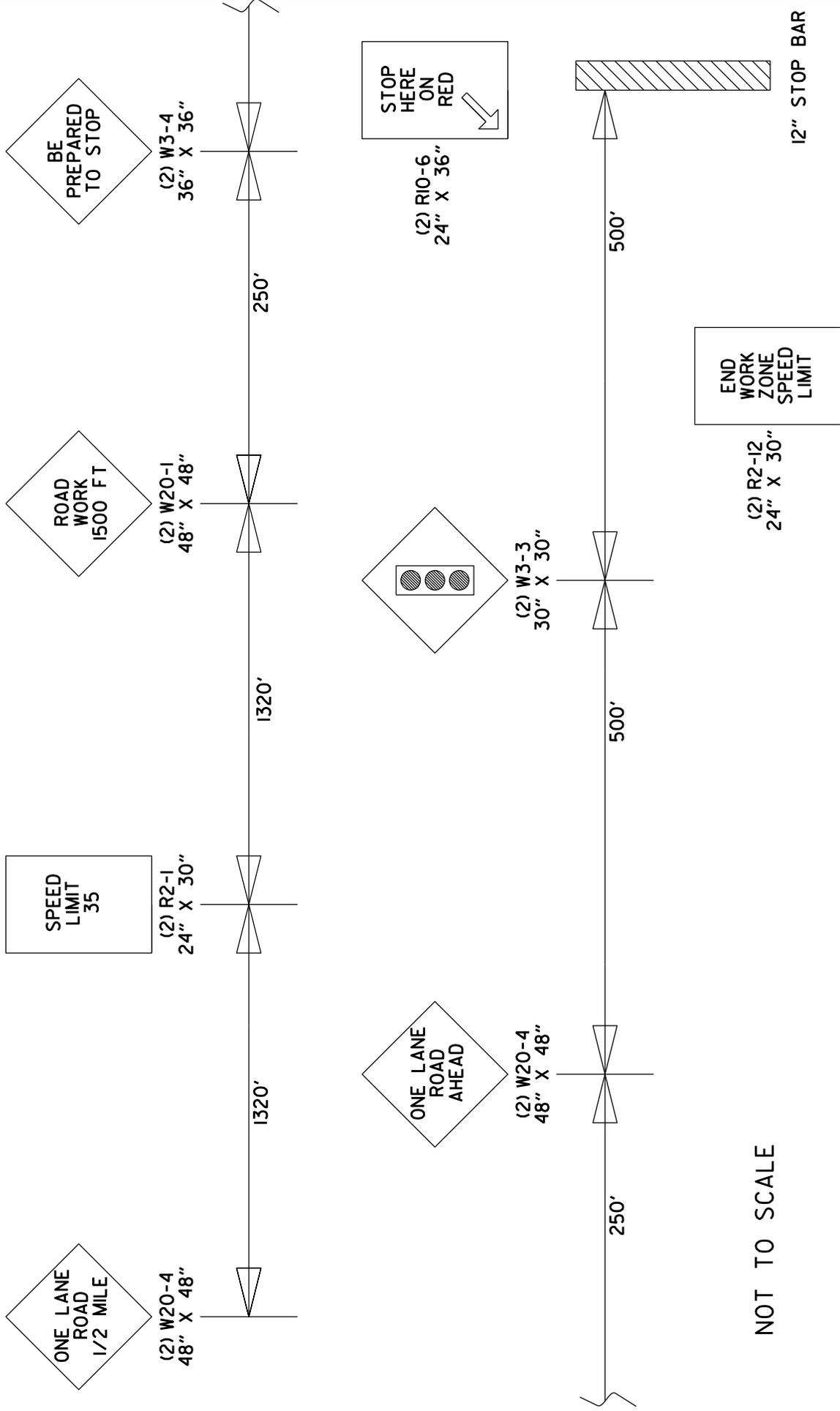
ROCK BUTTRESS TO BE CAPPED WITH 12" AGGREGATE BASE COURSE (CLASS 7), AGGREGATE BASE COURSE (CLASS 7) USED IN THIS CONSTRUCTION SHALL BE PAID AS ROCK FILL

LEGEND

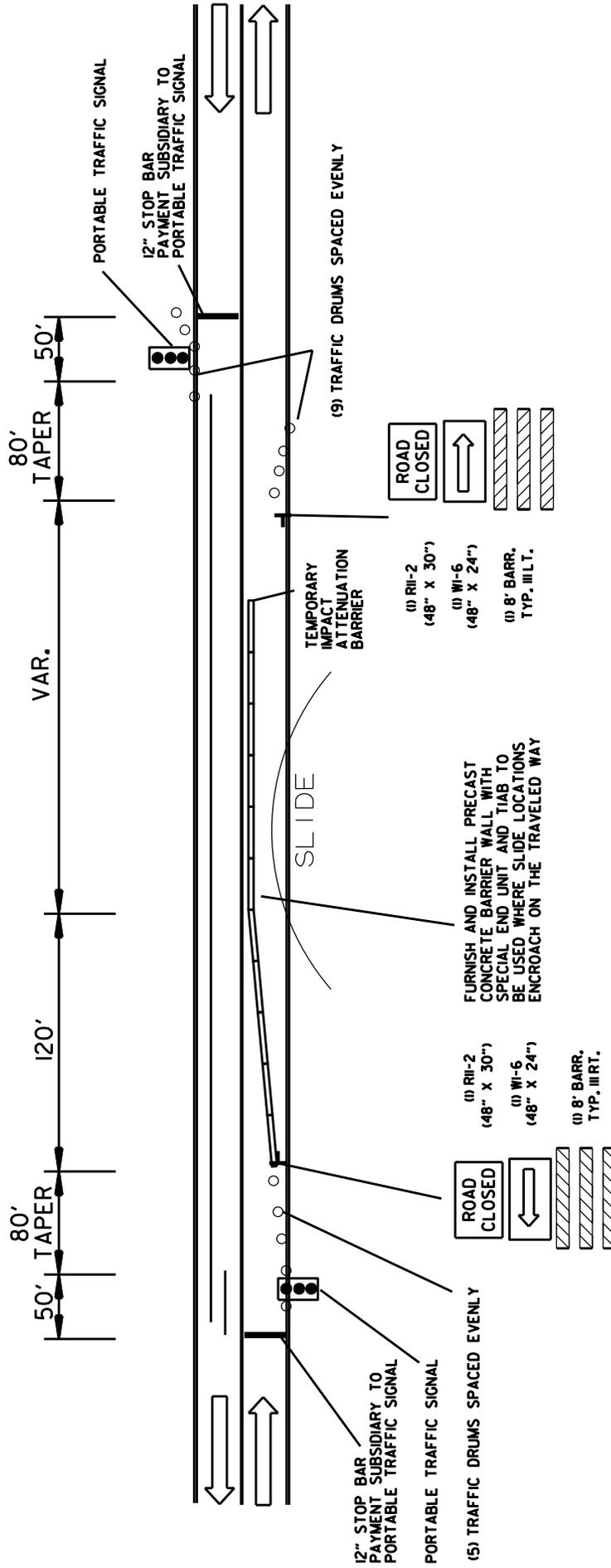
-  ROCK DITCH CHECKS
-  SEDIMENT BASIN
-  SILT FENCE



MAINTENANCE OF TRAFFIC FOR FLOOD REPAIRS



MAINTENANCE OF TRAFFIC FOR FLOOD DAMAGE REPAIRS



EROSION CONTROL

STATION	STATION	LOCATION	PERMANENT EROSION CONTROL				TEMPORARY EROSION CONTROL							OBLITERATION OF SEDIMENT BASIN	
			SPECIAL SEEDING (NATIVE GRASSES) ACRE	SPECIAL SEEDING (NATIVE WILD FLOWERS) ACRE	LIME TON	MULCH COVER ACRE	WATER M.GAL.	SECOND SEEDING APPLICATION ACRE	TEMPORARY SEEDING ACRE	MULCH COVER ACRE	WATER M.GAL.	ROCK DITCH CHECKS CU.YD.	SILT FENCE LIN. FT.		SEDIMENT BASIN CU.YD.
SECTION NO. 1 - HWY 23 Log Mile 5.58 - 5.60															
ENTIRE SITE		CLEARING AND GRUBBING	1.00	1.00	2.00	1.00	102.0	1.00							
*ENTIRE SITE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.															
TOTALS SECTION NO. 1:			1.00	1.00	2.00	1.00	102.0	1.00							
SECTION NO. 2 - HWY 23 Log Mile 12.95 - 13.05															
ENTIRE SITE		MAIN LANES	1.00	1.00	2.00	1.00	102.0	1.00							
*ENTIRE SITE TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER.															
TOTALS SECTION NO. 2:			1.00	1.00	2.00	1.00	102.0	1.00							
TOTALS:			2.00	2.00	4.00	2.00	204.0	2.00							

BASIS OF ESTIMATE:
 LIME 2 TONS / ACRE OF SEEDING
 WATER 102.0 M.G. / ACRE OF SEEDING
 WATER 20.4 M.G. / ACRE OF TEMPORARY SEEDING

*QUANTITIES ESTIMATED.
 SEE SECTION 104.03 OF THE STD. SPECS.

CLEARING AND GRUBBING

STATION	STATION	LOCATION	CLEARING	GRUBBING
400+00	403+00	Hwy 23	3	3
TOTALS:			3	3

REMOVAL AND DISPOSAL OF CULVERTS

STATION	DESCRIPTION	PIPE CULVERTS
400+37	Hwy 23 Main Lanes	EACH
401+50	Hwy 23 Main Lanes	1
TOTALS:		2

NOTE: QUANTITIES SHOWN ABOVE SHALL INCLUDE REMOVAL & DISPOSAL OF ALL HEADWALLS AND FLARED END SECTIONS IF APPLICABLE.

ROCK FILL

STATION	STATION	LOCATION	ROCK FILL
			TONS
400+50	402+00	HWY 23 Right	5256
TOTALS:			5256

*NOTE: EXACT LIMITS AND DEPTH OF ROCK BUTTRESS TO BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION

*NOTE: QUANTITY ESTIMATED.

SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER

*NOTE: UNCLASSIFIED EXCAVATION IS CONSIDERED SUBSIDIARY TO THE ITEM ROCK FILL

COLD MILLING ASPHALT PAVEMENT

STA	STA	LOCATION	AVG. WIDTH		COLD MILLING ASPHALT PAVEMENT
			FEET	SQ. YD.	
399+50	400+00	Hwy 23	26.00	144.44	
402+50	403+00	Hwy 23	26.00	144.44	
TOTAL:					288.88

NOTE: AVERAGE MILLING DEPTH 1"

BASE AND SURFACING

STATION	STATION	LOCATION	LENGTH	TACK COAT			ACHM SURFACE COURSE (1/2")				
				AVG. WID. FEET	SQ. YD.	GALLONS / SQ. YD.	AVG. WID. FEET	SQ. YD.	POUND / SQ. YD.	PG 64-22 TON	
399+50	403+00	Main Lanes - 2" Overlay	350.00	26.00	1011.11	0.17	171.89	26.00	1011.11	220.00	111.22
400+50	402+00	Constructed Shoulder						VAR	253.00	440.00	55.66
TOTALS:					1444.44		171.89		1664.11		166.88

BASIS OF ESTIMATE:

ACHM SURFACE COURSE (1/2").....94.4% MIN. AGGR.....5.6% ASPHALT BINDER
 MAXIMUM NUMBER OF GYRATIONS = 115 FOR PG 64-22

ADVANCE WARNING SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	TOTAL SIGNS REQUIRED		TRAFFIC DRUMS	BARRICADES (TYPE III)		FURNISHING & INSTALLING PRECAST CONC. BARRIER	TEMPORARY IMPACT ATTENUATION BARRIER	TEMP. IMPACT ATTEN.BARR SIGNAL SYSTEM (REPAIR)	PORTABLE TRAFFIC SIGNAL SYSTEM -ACTUATED
			NO.	SQ. FT.		RIGHT	LEFT				
W20-1	ROAD WORK 1500 FT.	48"x48"	4	64.0	EACH						WEEK
W20-1	ROAD WORK 1000 FT.	48"x48"	4	64.0							
W20-1	ROAD WORK 500 FT.	48"x48"	4	64.0							
W20-1	ROAD WORK AHEAD	48"x48"	4	64.0							
W20-4	ONE LANE ROAD AHEAD	48"x48"	2	32.0							
G20-2	END ROAD WORK	48"x24"	4	32.0							
R2-1	SPEED LIMIT 35	24"x30"	2	10.0							
W1-6	LARGE ARROW	48"x24"	2	32.0							
W3-3	SIGNAL PICTORIAL	48"x48"	2	8.0							
W3-4	BE PREPARED TO STOP	36"x36"	2	18.0							
R10-6	STOP HERE ON RED	24"x30"	2	20.0							
	TRAFFIC DRUMS			14							
	TYPE III BARRICADE-RT. (8')					16					
	TYPE III BARRICADE-LT. (8')						16				
	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER							416			
	TEMPORARY IMPACT ATTENUATION BARRIER								1		
	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)									1	
	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED										15.00
TOTALS:				408.0	14	16	16	416	1	1	15.00

NOTE: THIS IS A LOW TRAFFIC VOLUME ROAD AS DEFINED IN SECTION 604.03, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

SELECTED PIPE BEDDING

LOCATION	SELECTED PIPE BEDDING	
	PIPE BEDDING	CU. YD.
ENTIRE PROJECT TO BE USED IF AND WHERE DIRECTED BY THE ENGINEER	100	
TOTAL:		100

PERMANENT PAVEMENT MARKINGS

STATION	STATION	LOCATION	REFLECTORIZED PAINT PAVEMENT MARKING	
			6" WHITE	6" YELLOW
399+50	403+00	Hwy 23	900	900
TOTALS:			900	900

STRUCTURES

STA	DESCRIPTION	REINFORCED CONCRETE PIPE (CLASS IV)		FLARED END SECTIONS FOR R.C. PIPE		FLARED END SECTIONS FOR R.C. PIPE		SOLID SODDING	WATER	STD. DWG. NOS.
		18" LIN. FT.	36" LIN. FT.	18" R.C. PIPE	36" R.C. PIPE	18" R.C. PIPE	36" R.C. PIPE			
400+50	Hwy 23	108	108	2	2	2	2	34	0.43	FES-1, FES-2, PCC-1
401+50	Hwy 23	108	108	2	2	2	2	10	0.13	FES-1, FES-2, PCC-1
TOTALS:		108	108	2	2	2	2	44	1	

BASIS OF ESTIMATE:
 WATER.....12.6 GAL. / SQ. YD. OF SOLID SODDING

NOTE: FOR R.C. PIPE CULVERT INSTALLATIONS USE TYPE 3 BEDDING UNLESS OTHERWISE SPECIFIED.

PAVEMENT REPAIR OVER CULVERT (CONCRETE)

STATION	LOCATION	WIDTH	LENGTH		CU. YD.
			FEET		
400+50	HWY 23	8	28	28	6
401+50	HWY 23	8	28	28	6
TOTALS:					12

DUMPED RIPRAP AND FILTER BLANKET

STATION	LOCATION	DUMPED RIPRAP		FILTER BLANKET	
		CU. YD.	SQ. YD.	SQ. YD.	SQ. YD.
301+05	Hwy 23 South Stream Bank	555	1110		
TOTALS:		555	1110		

*NOTE: QUANTITY ESTIMATED.
 SEE SECTION 104.03 OF THE STANDARD SPECIFICATIONS

NOTE: FILTER BLANKET SHALL BE GEOTEXTILE FABRIC (TYPE 5).

SCHEDULE OF BRIDGE QUANTITIES FOR JOB NO. 040815

ITEM NO.	210	210	SP & 816
ITEM	COMPACTED EMBANKMENT	UNCLASSIFIED EXCAVATION	FOUNDATION PROTECTION
UNIT	CU. YDS.	CU. YDS.	TONS
TOTALS FOR BRIDGE NO. 02739:	839	839	217

NOTE: MATERIAL FOR COMPACTED EMBANKMENT IS TO BE USED FROM EXCAVATION
 NOTE: COMPACTED EMBANKMENT AND UNCLASSIFIED EXCAVATION TO BE PAID AS PLAN QUANTITY

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
SP & 201	CLEARING	3	STATION
201	GRUBBING	3	STATION
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS	2	EACH
SS & 210	UNCLASSIFIED EXCAVATION	839	CU. YD.
SP & 210	COMPACTED EMBANKMENT	839	CU. YD.
SP & 210	ROCK FILL	5256	TON
SS & 401	TACK COAT	172	GAL.
SP, SS, & 407	MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	158	TON
SP, SS, & 407	ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2")	9	TON
412	COLD MILLING ASPHALT PAVEMENT	289	SQ. YD.
601	MOBILIZATION	1.00	LUMP SUM
SP, SS, & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	408	SQ. FT.
SS & 604	BARRICADES	32	LN. FT.
SS & 604	TRAFFIC DRUMS	14	EACH
SS & 604	FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	416	LN. FT.
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	108	LN. FT.
606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	108	LN. FT.
606	18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2	EACH
606	SELECTED PIPE BEDDING	100	CU. YD.
615	PAVEMENT REPAIR OVER CULVERTS (CONCRETE)	12	CU. YD.
620	LIME	4	TON
SP & 620	SPECIAL SEEDING: NATIVE GRASSES	2.00	ACRE
SP & 620	SPECIAL SEEDING: NATIVE WILDFLOWERS	2.00	ACRE
SS & 620	MULCH COVER	4.00	ACRE
620	WATER	245.8	M. GAL.
621	TEMPORARY SEEDING	2.00	ACRE
621	SILT FENCE	600	LN. FT.
621	SEDIMENT BASIN	50	CU. YD.
621	OBLITERATION OF SEDIMENT BASIN	50	CU. YD.
621	ROCK DITCH CHECKS	50	CU. YD.
623	SECOND SEEDING APPLICATION	2.00	ACRE
624	SOLID SODDING	44	SQ. YD.
SP	PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED	15	WEEK
718	REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	900	LN. FT.
718	REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	900	LN. FT.
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER	1	EACH
SS & 731	TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	1	EACH
816	FILTER BLANKET	1110	SQ. YD.
816	DUMPED RIPRAP	555	CU. YD.
SP & 816	FOUNDATION PROTECTION RIPRAP	217	TON

REVISIONS

DATE	REVISION	SHEET NUMBER

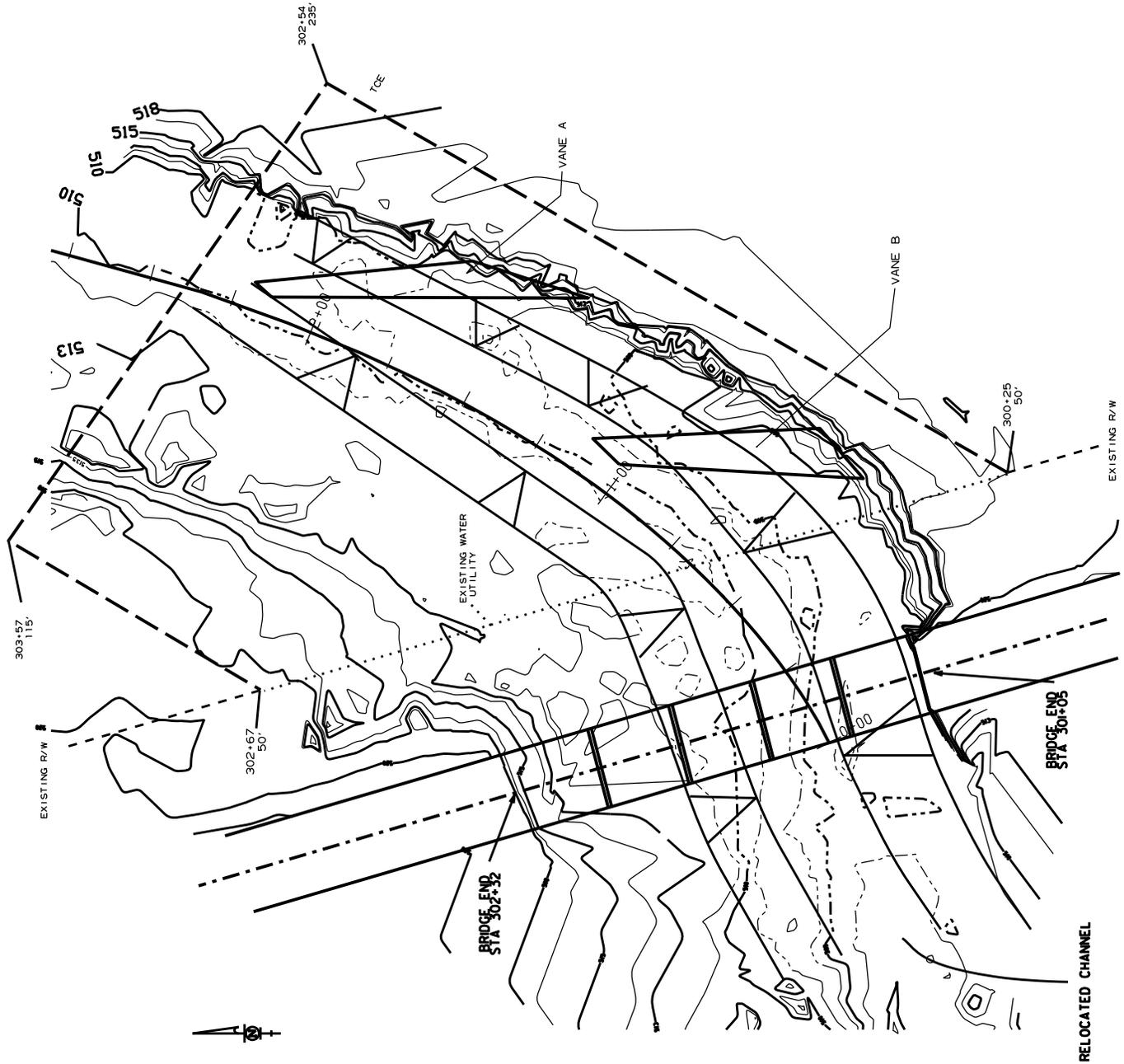
GENERAL NOTES:

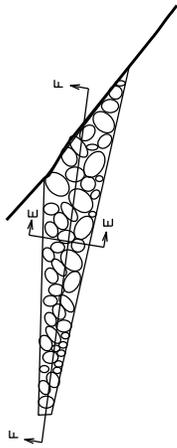
THE PROPOSED WORK CONSISTS OF RE-ESTABLISHING AN ERODED CHANNEL BANK LINE UPSTREAM FROM THE SOUTHEAST CORNER OF THE EXISTING BRIDGE BY FILLING THE AREA PROVIDING STONE AND NATURAL PROTECTION TO THE TOE OF THE FILLED AREA AND THE ESTABLISHMENT OF VEGETATION ON THE FILLED AREA. TWO ROCK VANES ARE TO BE CONSTRUCTED TO REDIRECT THE STREAM FLOW AWAY FROM THE DAMAGED BANK AND TOWARD THE SECOND SPAN OF THE BRIDGE. FILL MATERIAL IS ALSO TO BE PLACED UNDER THE SOUTHERN MOST SPAN OF THE BRIDGE UP TO AN ELEVATION 12" BELOW THE ROADWAY. CONTOURS SHOWN ARE BASED ON SURVEY INFORMATION GATHERED IN SEPTEMBER OF 2019. CARE SHOULD BE TAKEN TO VERIFY ALL DIMENSIONS, BRIDGE ORIGIN POINTS, WHILE PERFORMING ANY CONSTRUCTION ACTIVITIES. RIPRAP MAY BE PLACED UNDERWATER IN A MANNER THAT MAINTAINS THE REQUIRED GRADATION.

VANE DETAILS:

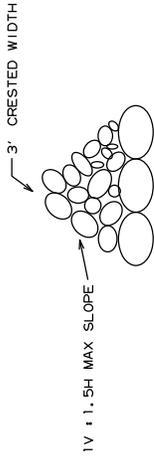
VANE A:
 LOCATION OF UPSTREAM TIP:
 STA. 302+62 / 175' RIGHT OF CL
 ELEVATION AT BASE OF FOOTER
 STONES: 504.3' OR SOLID ROCK
 VANE LENGTH FROM TIP TO BANK KEY: 88'
 VANE TOP (LONGITUDINAL) SLOPE: 8%
 MINIMUM FOOTER STONE WEIGHT: 400 LBS
 VANE ANGLE: 20 DEGREES MEASURED FROM SOUTH BANK TO THE CREST OF THE VANE

VANE B:
 LOCATION OF UPSTREAM TIP:
 STA. 301+80 / 95' RIGHT OF CL
 ELEVATION AT BASE OF FOOTER
 STONES: 503.8' OR SOLID ROCK
 VANE LENGTH FROM TIP TO BANK KEY: 94'
 VANE TOP (LONGITUDINAL) SLOPE: 8%
 MINIMUM FOOTER STONE WEIGHT: 400 LBS
 VANE ANGLE: 20 DEGREES MEASURED FROM SOUTH BANK TO THE CREST OF THE VANE

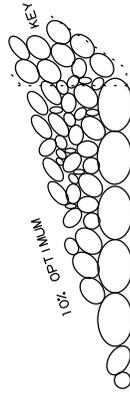




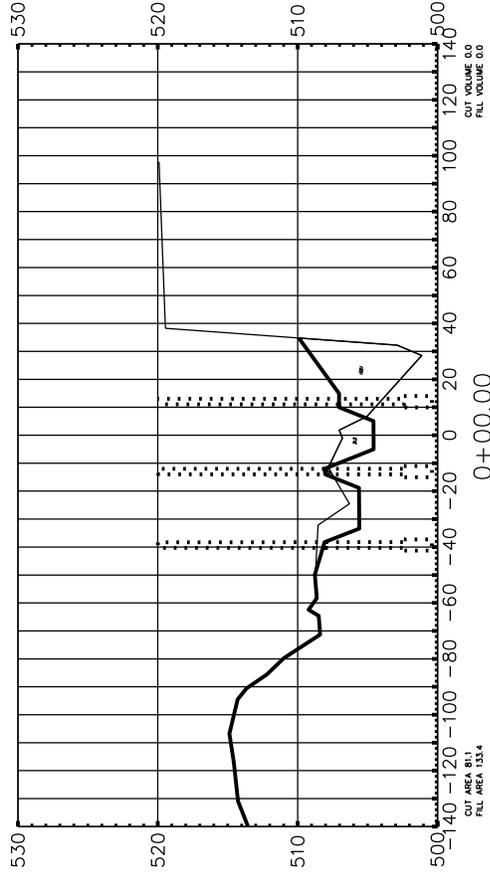
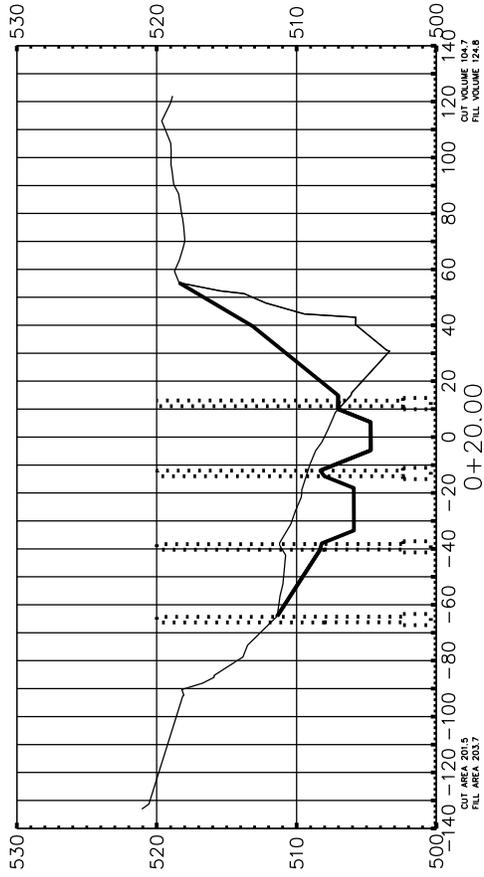
PLAN VIEW

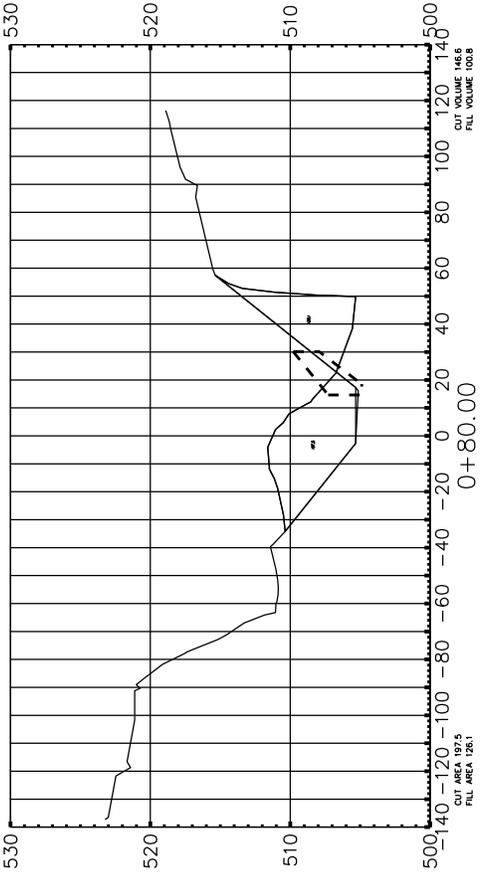
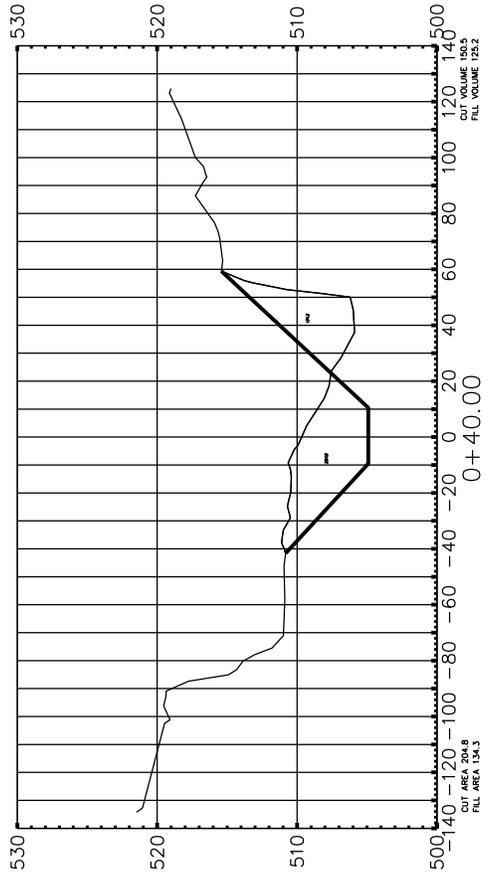
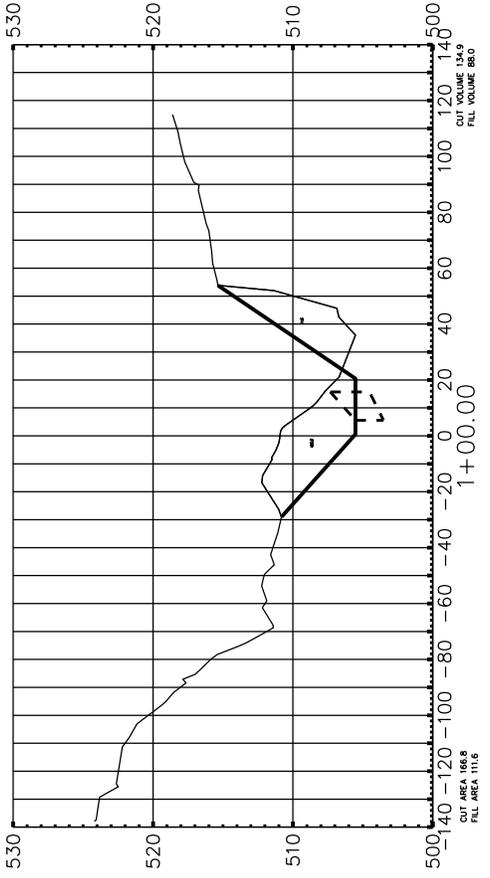
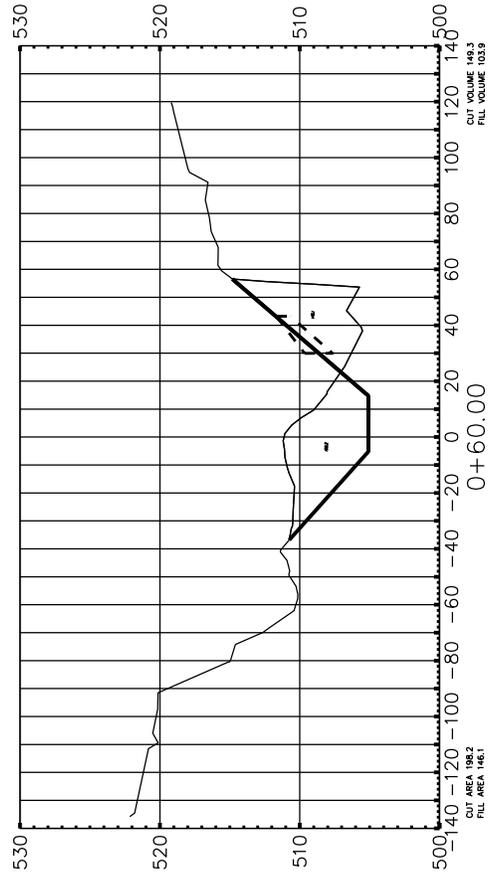


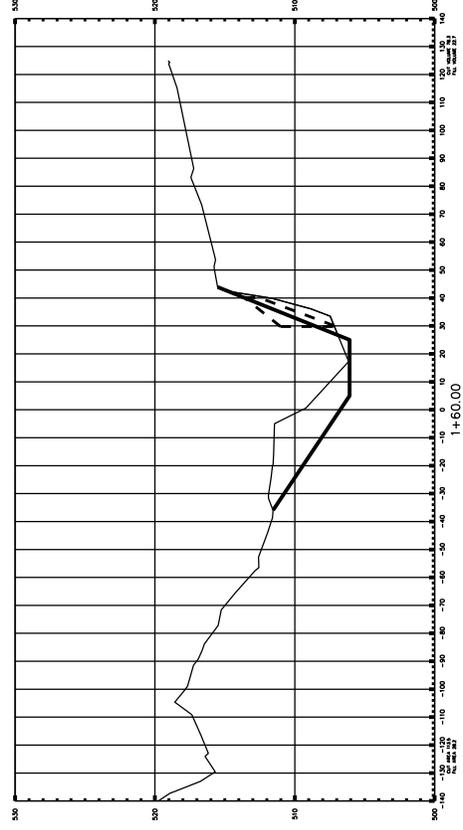
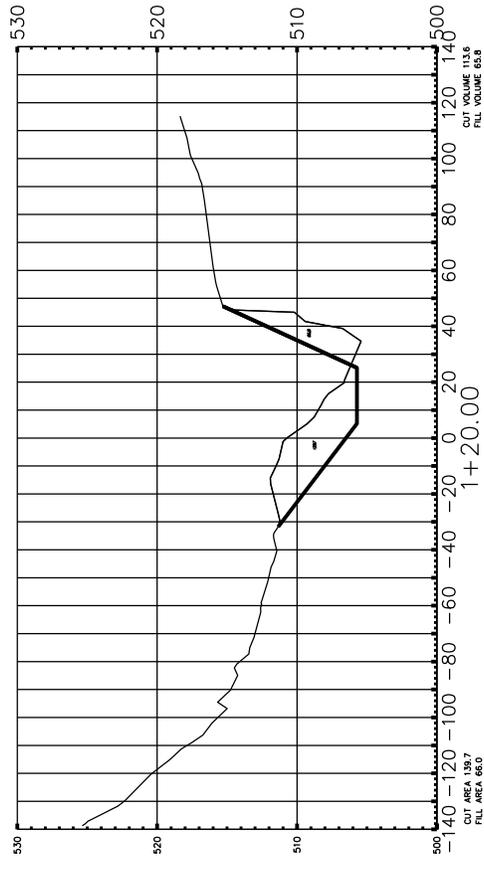
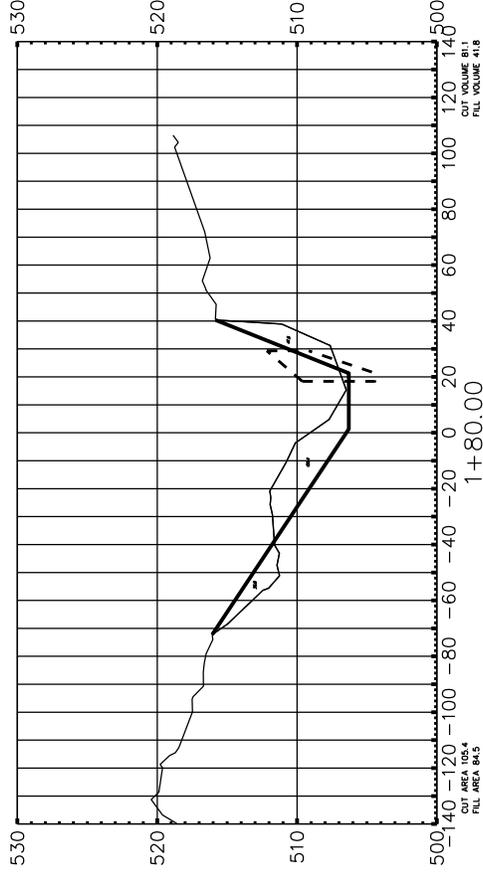
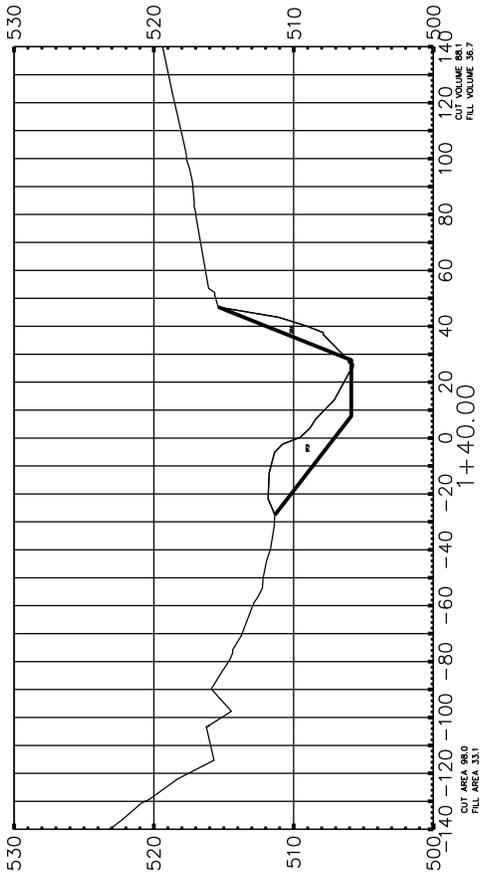
SECTION E-E

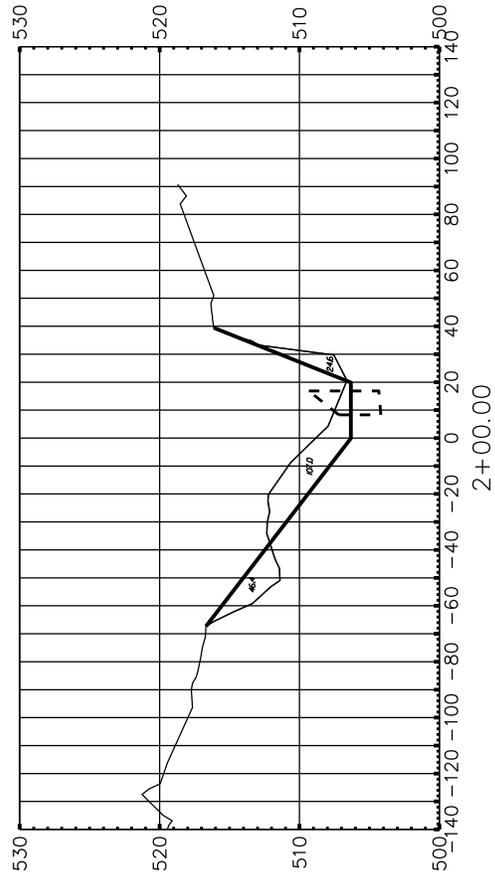
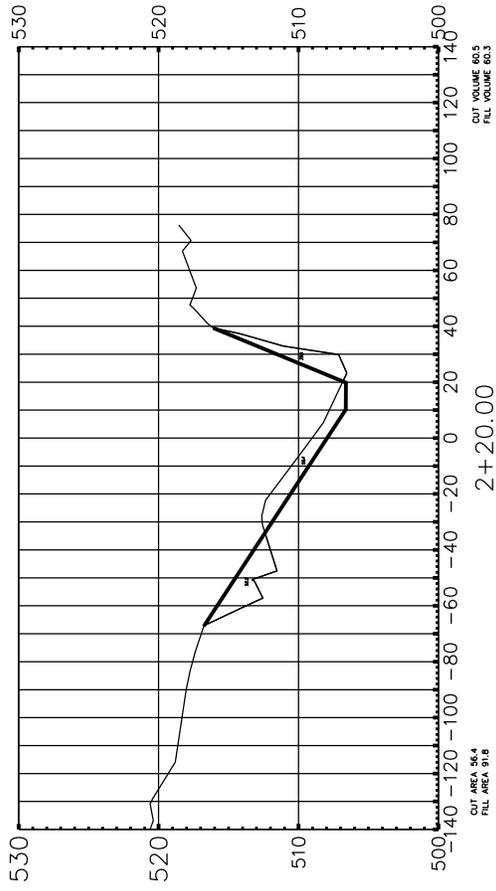


SECTION F-F







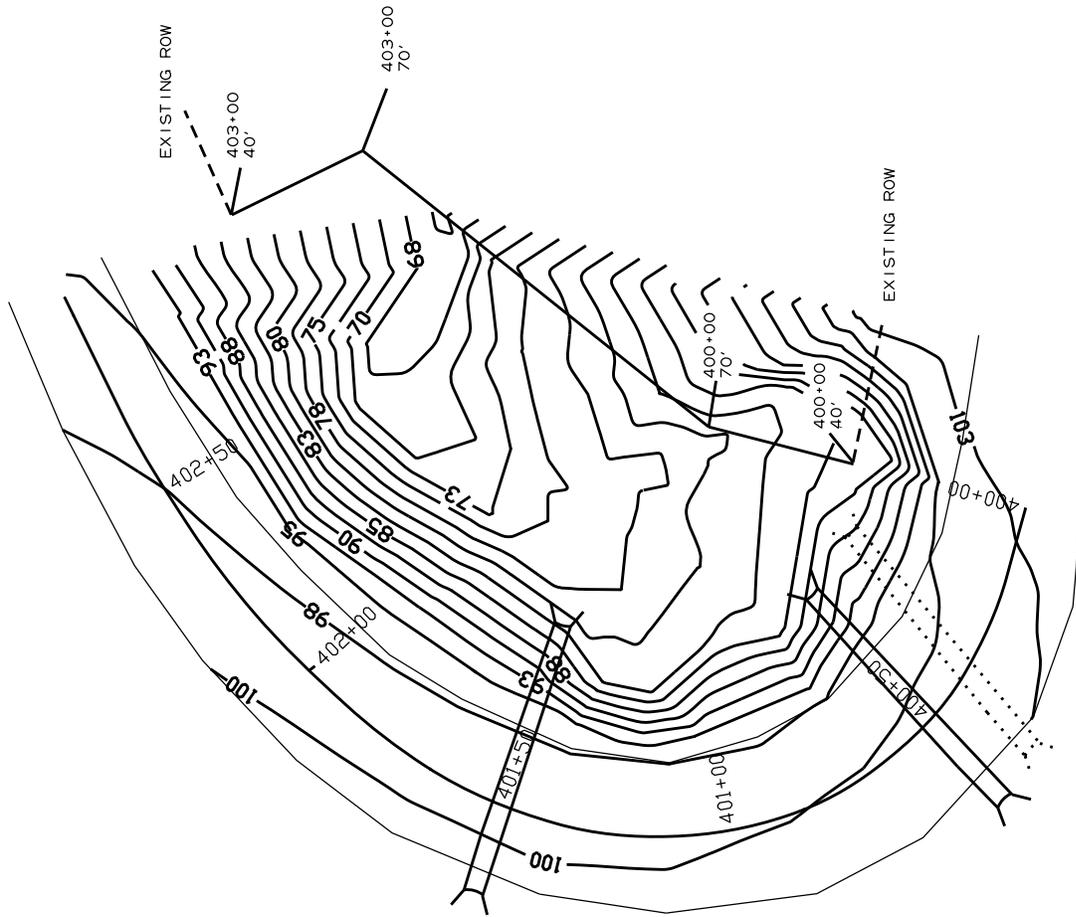


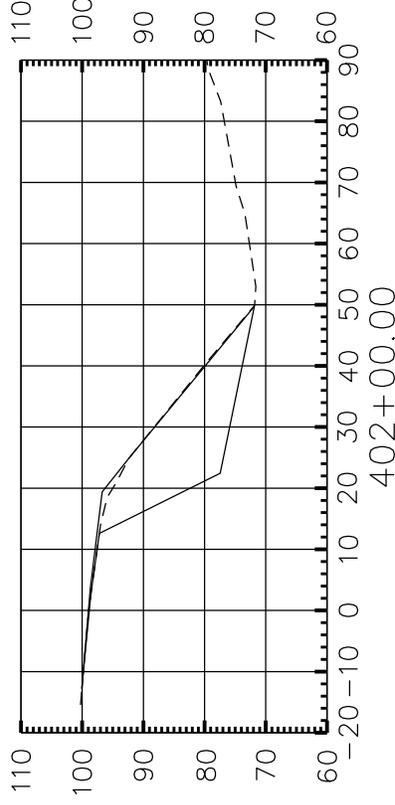
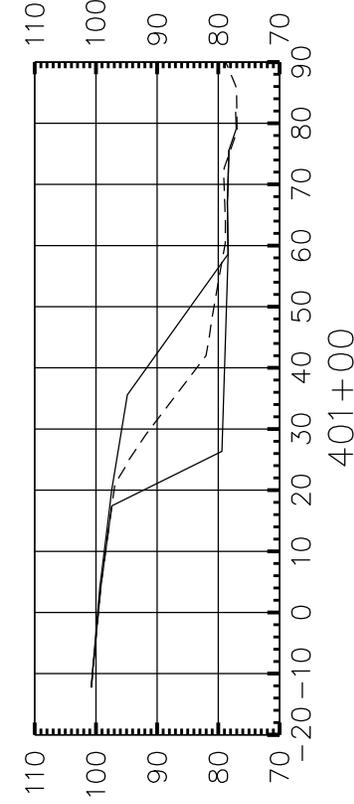
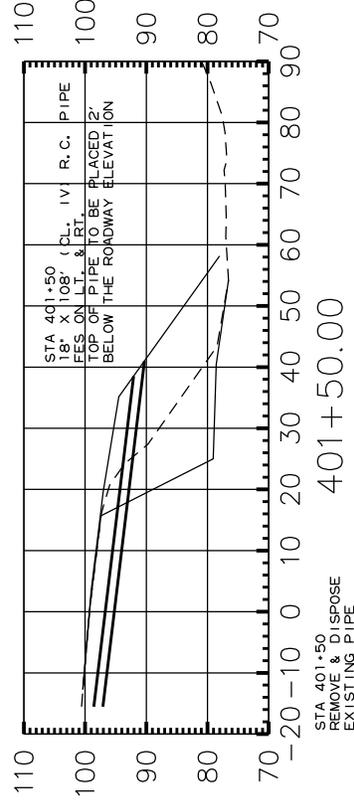
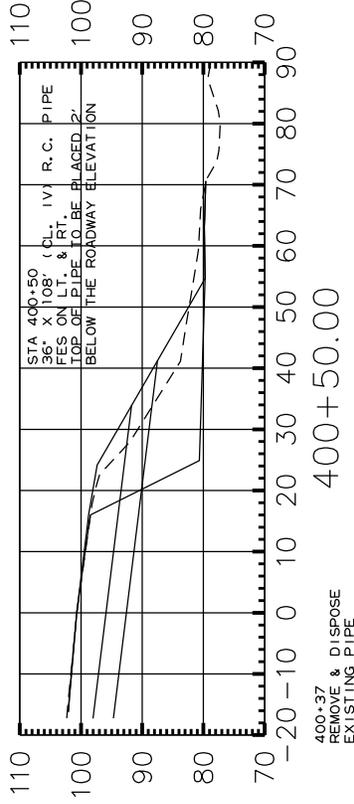
STA 400+50
 36" X 108" (CL. IV) R. C. PIPE
 REALIGN DRAINAGE CHANNEL ON
 THE WEST SIDE OF THE ROAD TO
 FLOW THROUGH THE CONSTRUCTED
 R. C. PIPE. PAYMENT FOR REALIGNING
 THE DITCH WILL NOT BE PAID
 DIRECTLY BUT PAYMENT WILL BE
 CONSIDERED SUBSIDIARY TO THE
 OTHER CONTRACT ITEMS

STA 401+50
 REMOVE AND REPLACE FAILED
 PIPE CULVERT
 18" X 102" (CL. IV) R. C. PIPE
 EXACT PLACEMENT AND ANGLE OF
 PIPES TO BE DETERMINED BY THE
 ENGINEER IN THE FIELD

GENERAL NOTES:

NO DIRECT PAYMENT WILL BE MADE FOR THE
 ITEM "UNCLASSIFIED EXCAVATION" WITHIN
 THE LIMITS OF THE ROCKFILL BUT FULL
 COMPENSATION WILL BE CONSIDERED
 SUBSIDIARY TO THE ITEM "ROCK FILL"



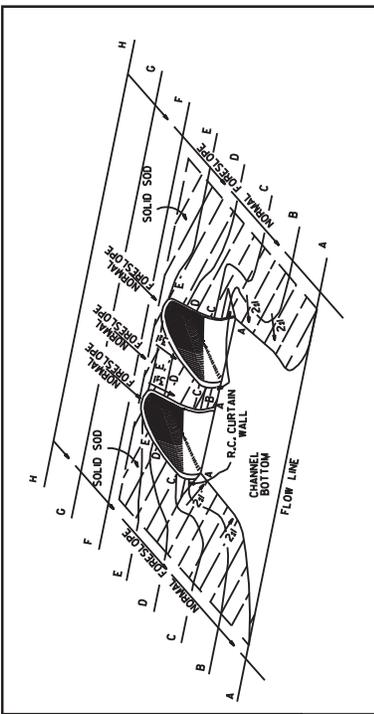


LOG MILE 12.95 TO 13.05

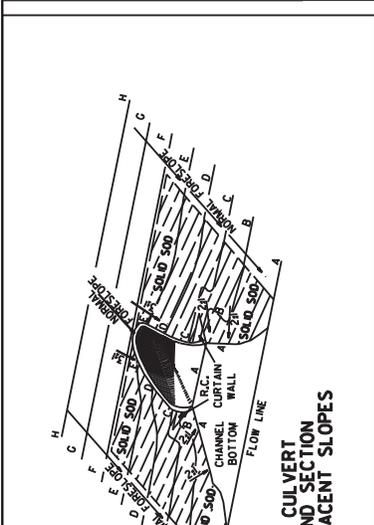
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JOB NO. 040815

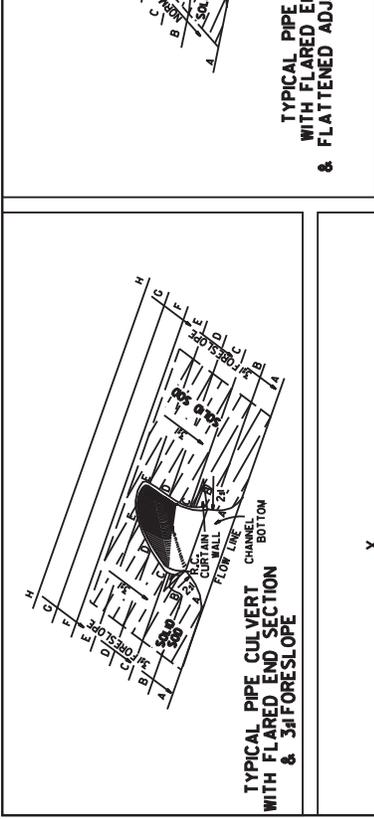
SHEET 20 OF 20
CROSS SECTIONS OF SLIDE REPAIR



TYPICAL PIPE CULVERT WITH FLARED END SECTIONS & FLATTENED ADJACENT SLOPES



TYPICAL PIPE CULVERT WITH FLARED END SECTIONS & FLATTENED ADJACENT SLOPES



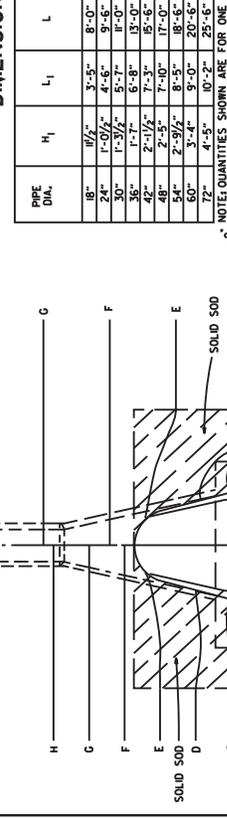
TYPICAL PIPE CULVERT WITH FLARED END SECTIONS & FLATTENED ADJACENT SLOPES

REINFORCING STEEL SCHEDULE

PIPE DIA.	SINGLE R.C. PIPE CULVERT			DOUBLE R.C. PIPE CULVERT		
	L	NO.	SIZE	L	NO.	SIZE
18"	7'-8"	2	1-1/2"	8	8	12'-2"
24"	9'-2"	2	2-2"	4	1-7/8"	8
30"	10'-8"	2	2-4/8"	4	1-1/2"	8
36"	12'-8"	2	2-10"	6	2-3/8"	12
42"	15'-2"	2	3-9/16"	8	2-3/8"	12
48"	18'-8"	2	4-3/8"	10	3-1/2"	16
54"	18'-2"	2	4-3/8"	12	3-9/16"	12
60"	25'-2"	2	7-4"	18	5-1/2"	20

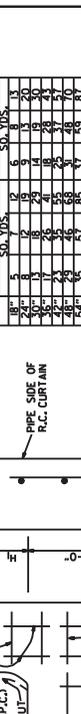
R.C. CURTAIN WALL DIMENSIONS & QUANTITIES

PIPE DIA.	H ₁	L ₁	SINGLE R.C.P.C.		DOUBLE R.C.P.C.	
			CONC.	REIN. STEEL	CONC.	REIN. STEEL
18"	11/2"	3'-5"	0.3	27.7	0.45	39.5
24"	1-3/16"	4'-6"	0.37	33.4	0.53	48.0
30"	1-3/8"	5'-7"	0.45	39.0	0.67	59.0
36"	1-7/8"	6'-8"	0.58	52.6	0.83	73.9
42"	2-1/4"	7'-0"	0.82	64.9	1.27	100.4
48"	2-9/16"	8'-5"	1.05	85.8	1.61	143.7
54"	3'-0"	10'-2"	1.47	149.7	2.18	180.3
60"	4'-5"	12'-2"	2.33	232.6	3.73	271.0



SOLID SODDING

PIPE DIA.	SINGLE R.C.P.C.			DOUBLE R.C.P.C.		
	3#	4#	6#	3#	4#	6#
18"	8	12	15	5	5	5
24"	12	18	25	8	14	19
30"	16	25	35	11	18	25
36"	20	30	45	14	22	31
42"	25	35	55	18	28	39
48"	30	40	65	22	34	48
54"	35	45	75	26	40	56
60"	40	50	85	30	46	64



GENERAL NOTES:

1. A CAST-IN-PLACE OR PRECAST CURTAIN WALL MAY BE USED. PAYMENT FOR THE CURTAIN WALL SHALL BE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID EACH FOR FLARED END SECTIONS OF THE SEVERAL SIZES, WHICH PRICE SHALL INCLUDE REINFORCING STEEL AND CONCRETE FOR FORMS, MAKING AND PLACING FOR EXCAVATION AND BACKFILL, AND TO COMPLETE THE WORK. EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SHALL BE CHARGED TO THE CONTRACTOR.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
3. CONCRETE FOR CURTAIN WALL SHALL MEET THE REQUIREMENTS FOR CLASS 4000 SPECIFICATIONS AND PROVIDE SECTION 502 OF THE STANDARD SPECIFICATIONS FOR CONCRETE AS PROVIDED IN SECTION 501 OF THE STANDARD SPECIFICATIONS.
4. WELDED WIRE MESH 3 x 3 1/2" x 3 1/2" x W/O MAY BE USED IN LIEU OF REINFORCING BARS.

PRECAST:

NOTE: THE PRECAST CURTAIN WALL WILL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. THE FLARED END SECTION SHALL BE SET AND BACKFILLED WITH COMPACTED MATERIAL. WHERE THE CURTAIN WALL EXCEEDS THE STANDARD SECTION, THE METHOD OF JOINING THE SECTIONS FOR INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

CAST-IN-PLACE:

NOTE: THE PORTION OF THE R.C. CURTAIN WALL BENEATH THE FLARED END SECTION LOWER 1'-0" SHALL BE PLACED IN PLACE. ALL THE REMAINING PORTIONS OF THE R.C. CURTAIN WALL PLACED.

SECTIONAL VIEW "X-X"

ARIZONA STATE HIGHWAY COMMISSION

FLARED END SECTION

STANDARD DRAWING FES-1

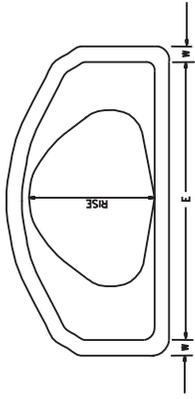
DATE: _____

REVISION: _____

ARCH PIPE

EQUIV. DIA. IN 206 NOMINAL	SPAN		RISE		A	B	C	D	E	P	R2	G-T	S
	IN	FT	IN	FT									
15	18	18	11	11	4"	2'-0"	4'-0"	6'-0"	3'-0"	29"	12"	1/2"	2 1/4"
18	22	22	13 1/2	14	5"	2'-0"	4'-1"	6'-1"	3'-6"	37 1/4"	15"	2 1/2"	2 1/4"
21	26 1/2	26 1/2	16	16	6"	2'-3"	5'-0"	8'-0"	5'-0"	38 1/4"	15"	2 1/2"	2 1/4"
24	30 1/2	30 1/2	18 1/2	19	7"	2'-6"	6'-0"	9'-0"	6'-0"	40 1/4"	15"	2 1/2"	2 1/4"
30	36 1/2	36 1/2	23	23	10"	3'-1"	7'-0"	11'-0"	7'-0"	47 1/4"	20"	3 1/2"	2 1/4"
36	43 1/2	43 1/2	26 1/2	27	14"	4'-0"	8'-1"	12'-0"	8'-1"	54 1/4"	22"	3 1/2"	2 1/4"
42	51 1/2	51 1/2	31	31	17"	4'-7"	10'-1"	15'-1"	9'-1"	61 1/4"	23"	3 1/2"	2 1/4"
48	58 1/2	58 1/2	36	36	21"	5'-3"	11'-1"	16'-1"	10'-1"	68 1/4"	24"	4 1/4"	2 1/4"
54	65	65	40	40	24"	6'-0"	12'-0"	17'-0"	11'-0"	75 1/4"	24"	4 1/4"	2 1/4"
60	72	72	45	45	28"	7'-0"	13'-0"	18'-0"	12'-0"	82 1/4"	24"	5"	2 1/4"
66	78 1/2	78 1/2	50	50	32"	8'-0"	14'-0"	19'-0"	13'-0"	89 1/4"	24"	5"	2 1/4"
72	84 1/2	84 1/2	55	55	36"	9'-0"	15'-0"	20'-0"	14'-0"	96 1/4"	24"	5"	2 1/4"

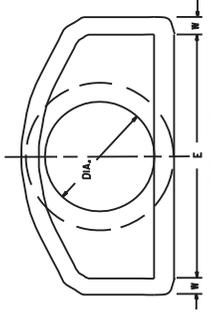
* THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY AASHTO # 206.



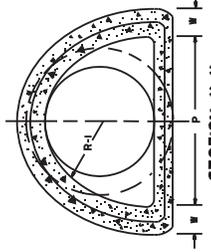
END VIEW
CONCRETE ARCH PIPE

TABLE OF DIMENSIONS

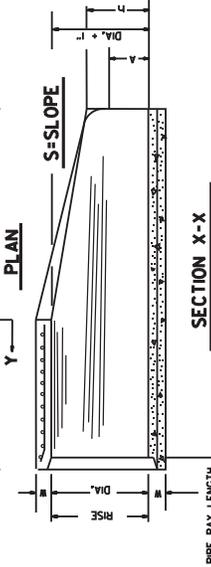
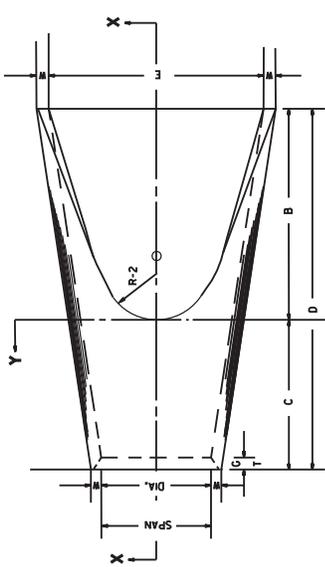
DIA.	WALL	A	B	C	D	E	S	DIA. ± 1/8"	P	R-1	R-2	G-T	WT.	h
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3 1/4	19"	23"	15 1/2"	12"	2"	1000	1'-0 1/2"
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	3 1/4	25"	33 1/4"	15 1/4"	14"	2 1/2"	1600	1'-1 1/2"
30"	3 1/2"	1'-0"	4'-6"	1'-1 1/2"	6'-1 1/2"	5'-0"	3 1/4	31"	37"	18 1/2"	15"	3 1/4"	1940	1'-4 3/4"
36"	4"	1'-3"	5'-3"	2'-1 1/2"	6'-2"	6'-6"	3 1/4	33 1/2"	41"	21"	17"	4"	2300	1'-7 1/2"
42"	4 1/2"	1'-8"	6'-0"	2'-2"	6'-2"	7'-0"	3 1/4	36"	45 1/2"	24"	17"	4"	2700	2'-0"
48"	5"	2'-4"	6'-0"	2'-2"	6'-2"	8'-4"	3 1/4	39"	50"	26 1/2"	22"	5 1/2"	3100	2'-6"
54"	5 1/2"	2'-4"	6'-6"	1'-0"	8'-4"	7'-6"	3 1/4	42"	55 1/2"	28 1/2"	22"	5 1/2"	3500	2'-6"
60"	6"	2'-10"	6'-6"	1'-10"	8'-4"	8'-0"	3 1/4	45"	61 1/2"	30 1/2"	24"	4"	3900	3'-5"
66"	6 1/2"	3'-0"	6'-6"	1'-10"	8'-4"	9'-0"	3 1/4	48"	67 1/2"	32 1/2"	24"	5"	4300	4'-6"
72"	7"	3'-10"	6'-6"	1'-10"	8'-4"	9'-0"	3 1/4	51"	73 1/2"	35 1/2"	24"	5"	4700	4'-6"



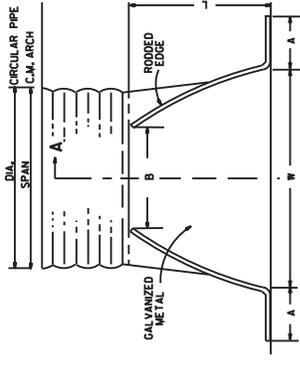
END VIEW
CIRCULAR PIPE



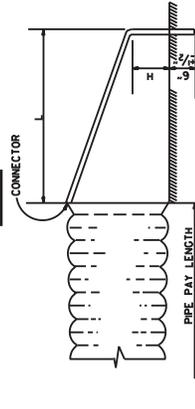
SECTION Y-Y
C.M. ARCH PIPE



SECTION X-X
END SECTION FOR REINFORCED CONCRETE PIPE CULVERTS



CIRCULAR PIPE



C.M. ARCH PIPE

DIA.	GAUGE	A	B	H	L	W	S
12	16	6	6	6	21	24	2 1/4"
15	18	7	7	7	24	27	2 1/4"
18	21	8	8	8	27	30	2 1/4"
21	24	9	9	9	30	33	2 1/4"
24	27	10	10	10	33	36	2 1/4"
30	33	12	12	12	39	42	2 1/4"
36	39	14	14	14	45	50	2 1/4"
42	45	16	16	16	51	60	2 1/4"
48	51	18	18	18	57	66	2 1/4"
54	57	20	20	20	63	72	2 1/4"
60	63	22	22	22	69	80	2 1/4"
66	69	24	24	24	75	87	2 1/4"
72	75	26	26	26	81	94	2 1/4"

CIRCULAR PIPE

EQUIV. DIA.	SPAN	RISE	A	B	H	L	W	S	GAUGE
18"	17	13	7	7	7	19	20	2 1/4"	16
21"	21	15	8	8	8	23	24	2 1/4"	18
24"	24	18	9	9	9	27	28	2 1/4"	20
30"	30	21	11	11	11	33	34	2 1/4"	24
36"	36	24	13	13	13	39	40	2 1/4"	28
42"	42	27	15	15	15	45	46	2 1/4"	32
48"	48	30	17	17	17	51	52	2 1/4"	36
54"	54	33	19	19	19	57	58	2 1/4"	40
60"	60	36	21	21	21	63	64	2 1/4"	44
66"	66	39	23	23	23	69	70	2 1/4"	48
72"	72	42	25	25	25	75	76	2 1/4"	52

C.M. ARCH PIPE

DATE	REVISION	STANDARD DRAWING	FEES
10-2-72	REVISED AND REDRAWN	FEES-2	160-10-2-72
5-23-74	REMOVED NOTE BE BEING FOR R.C.P.E.S.	FLARED END SECTION	517-5-23-74
8-22-75	ADDED MULTIPLE PIPE CULVERTS	FLARED END SECTION	517-8-22-75
7-14-78	C.M. ARCH SHEETS TO CONFORM WITH AASHTO SHEETS	FLARED END SECTION	162-7-14-78
6-24-80	REVISED ASHTO SHEETS TO CONFORM WITH AASHTO SHEETS	FLARED END SECTION	162-6-24-80
10-18-86	REVISED ASHTO SHEETS TO CONFORM WITH AASHTO SHEETS	FLARED END SECTION	162-10-18-86

NOTE: ALTERNATE CONNECTIONS TO THE PIPE CULVERTS, IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICES, MAY BE MADE SUBJECT TO THE APPROVAL OF THE ENGINEER.

END SECTIONS FOR CORRUGATED METAL PIPE CULVERTS

REINFORCED CONCRETE HORIZONTAL ELLIPTICAL PIPE DIMENSIONS

EQUIV. DIA., INCHES	ASHTO M 207	
	SPAN	RISE
18	23	14
24	30	18
27	34	22
30	38	24
33	42	27
36	45	29
39	49	32
42	53	34
45	57	36
48	60	38
51	64	40
54	68	42
57	72	44
60	76	46
63	80	48
66	84	50
69	88	52
72	92	54
75	96	56
78	100	58
81	104	60
84	108	62
87	112	64
90	116	66
93	120	68
96	124	70
99	128	72
102	132	74
105	136	76
108	140	78
111	144	80
114	148	82
117	152	84
120	156	86
123	160	88
126	164	90
129	168	92
132	172	94
135	176	96
138	180	98
141	184	100
144	188	102
147	192	104
150	196	106
153	200	108
156	204	110
159	208	112
162	212	114
165	216	116
168	220	118
171	224	120
174	228	122
177	232	124
180	236	126
183	240	128
186	244	130
189	248	132
192	252	134
195	256	136
198	260	138
201	264	140
204	268	142
207	272	144
210	276	146
213	280	148
216	284	150
219	288	152
222	292	154
225	296	156
228	300	158
231	304	160
234	308	162
237	312	164
240	316	166
243	320	168
246	324	170
249	328	172
252	332	174
255	336	176
258	340	178
261	344	180
264	348	182
267	352	184
270	356	186
273	360	188
276	364	190
279	368	192
282	372	194
285	376	196
288	380	198
291	384	200
294	388	202
297	392	204
300	396	206
303	400	208
306	404	210
309	408	212
312	412	214
315	416	216
318	420	218
321	424	220
324	428	222
327	432	224
330	436	226
333	440	228
336	444	230
339	448	232
342	452	234
345	456	236
348	460	238
351	464	240
354	468	242
357	472	244
360	476	246
363	480	248
366	484	250
369	488	252
372	492	254
375	496	256
378	500	258
381	504	260
384	508	262
387	512	264
390	516	266
393	520	268
396	524	270
399	528	272
402	532	274
405	536	276
408	540	278
411	544	280
414	548	282
417	552	284
420	556	286
423	560	288
426	564	290
429	568	292
432	572	294
435	576	296
438	580	298
441	584	300
444	588	302
447	592	304
450	596	306
453	600	308
456	604	310
459	608	312
462	612	314
465	616	316
468	620	318
471	624	320
474	628	322
477	632	324
480	636	326
483	640	328
486	644	330
489	648	332
492	652	334
495	656	336
498	660	338
501	664	340
504	668	342
507	672	344
510	676	346
513	680	348
516	684	350
519	688	352
522	692	354
525	696	356
528	700	358
531	704	360
534	708	362
537	712	364
540	716	366
543	720	368
546	724	370
549	728	372
552	732	374
555	736	376
558	740	378
561	744	380
564	748	382
567	752	384
570	756	386
573	760	388
576	764	390
579	768	392
582	772	394
585	776	396
588	780	398
591	784	400
594	788	402
597	792	404
600	796	406
603	800	408
606	804	410
609	808	412
612	812	414
615	816	416
618	820	418
621	824	420
624	828	422
627	832	424
630	836	426
633	840	428
636	844	430
639	848	432
642	852	434
645	856	436
648	860	438
651	864	440
654	868	442
657	872	444
660	876	446
663	880	448
666	884	450
669	888	452
672	892	454
675	896	456
678	900	458
681	904	460
684	908	462
687	912	464
690	916	466
693	920	468
696	924	470
699	928	472
702	932	474
705	936	476
708	940	478
711	944	480
714	948	482
717	952	484
720	956	486
723	960	488
726	964	490
729	968	492
732	972	494
735	976	496
738	980	498
741	984	500
744	988	502
747	992	504
750	996	506
753	1000	508

THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PERCENT FROM THE VALUES SPECIFIED BY ASHTO M207.

CONSTRUCTION SEQUENCE

1. PLACE STRUCTURAL BEDDING MATERIAL TO GRADE, DO NOT COMPACT.
 2. COMPACT STRUCTURAL BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
 3. COMPACT STRUCTURAL BEDDING OUTSIDE THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
 4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
 5. COMPLETE BACKFILL ACCORDING TO SUBSECTION 600.03.01(F).
- NOTE: HAUNCH AND STRUCTURAL BEDDING MATERIAL WILL NOT BE PAID FOR SEPARATELY, BUT COMPENSATION WILL BE CONSIDERED TO BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF CONCRETE PIPE.

- LEGEND -

D_i = NOMINAL INSIDE DIAMETER OF PIPE
 D_o = FILL COVER HEIGHT OVER PIPE (FEET)
 MIN. = MINIMUM
 UNDISTURBED SOIL

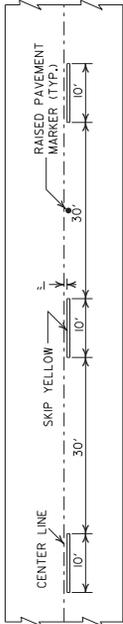
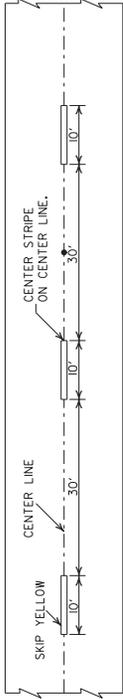
INSTALLATION TYPE	MATERIAL REQUIREMENTS FOR HAUNCH AND STRUCTURAL BEDDING
TYPE 1	AGGREGATE BASE COURSE (CLASS 5 OR CLASS 7)
TYPE 2	SELECTED MATERIALS (CLASS SM-1, SM-2, OR SM-4) OR TYPE 1 INSTALLATION MATERIAL**
TYPE 3**	ASHTO CLASSIFICATION A-T THRU J-B SOIL OR TYPE 1 OR 2 INSTALLATION MATERIAL

** SM-3 WILL NOT BE ALLOWED.
 ** MATERIALS SHALL NOT INCLUDE ORGANIC MATERIALS OR STONES LARGER THAN 3 INCHES.

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA., INCHES	SPAN		RISE	
	ASHTO M 207	ASHTO M 207	ASHTO M 207	ASHTO M 207
18	22	11	11	11
21	26	13 1/2	13 1/2	13 1/2
24	29 1/2	15	15	15
27	33	16 1/2	16 1/2	16 1/2
30	36 1/2	18	18	18
33	40	20	20	20
36	44	22 1/2	22 1/2	22 1/2
39	48	25	25	25
42	51 1/2	27 1/2	27 1/2	27 1/2
45	55	30	30	30
48	58 1/2	32 1/2	32 1/2	32 1/2
51	62	35	35	35
54	65 1/2	37 1/2	37 1/2	37 1/2
57	69	40	40	40
60	72 1/2	42 1/2	42 1/2	42 1/2
63	76	45	45	45
66	79 1/2	47 1/2	47 1/2	47 1/2
69	83	50	50	50
72	86 1/2	52 1/2	52 1/2	52 1/2
75	90	55	55	55
78	93 1/2	57 1/2	57 1/2	57 1/2
81	97	60	60	60
84	100 1/2	62 1/2	62 1/2	62 1/2
87	104	65	65	65
90	107 1/2	67 1/2	67 1/2	67 1/2
93	111	70	70	70
96	114 1/2	72 1/2	72 1/2	72 1/2
99	118	75	75	75
102	121 1/2	77 1/2	77 1/2	77 1/2
105	125	80	80	80
108	128 1/2	82 1/2	82 1/2	82 1/2
111	132	85	85	85
114	135 1/2	87 1/2	87 1/2	87 1/2
117	139	90	90	90
120	142 1/2	92 1/2	92 1/2	92 1/2
123	146	95	95	95
126	149 1/2	97 1/2	97 1/2	97 1/2
129	153	100	100	100
132	156 1/2	102 1/2	102 1/2	102 1/2
135	160	105	105	105
138	163 1/2	107 1/2	107 1/2	107 1/2
141	167	110	110	110
144	170 1/2	112 1/2	112 1/2	112 1/2
147	174	115	115	115
150	177 1/2	117 1/2	117 1/2	117 1/2
153	181	120	120	120
156	184 1/2	122 1/2	122 1/2	122 1/2
159	188	125	125	125
162	191 1/2	127 1/2	127 1/2	127 1/2
165	195	130	130	130
168	198 1/2	132 1/2	132 1/2	132 1/2
171	202	135	135	135
174	205 1/2	137 1/2	137 1/2	137 1/2
177	209	140	140	140
180	212 1/2	142 1/2	142 1/2	142 1/2
183	216	145	145	145
186	219 1/2	147 1/2	147 1/2	147 1/2
189	223	150	150	150
192	226 1/2	152 1/2	152 1/2	152 1/2
195	230	155	155	155
198	233 1/2	157 1/2	157 1/2	157 1/2
201	237	160	160	160
204	240 1/2	162 1/2	162 1/2	162 1/2
207	244	165	165	165
210	247 1/2	167 1/2	167 1/2	167 1/2
213	251	170	170	170
216	254 1/2	172 1/2	172 1/2	172 1/2
219	258	175	175	175
222	261 1/2	177 1/2	177 1/2	177 1/2
225	265	180	180	180
228	268 1/2	182 1/2	182 1/2	182 1/2
231	272	185	185	185
234	275 1/2	187 1/2	187 1/2	187 1/2
237	279	190	190	190
240	282 1/2	192 1/2	192 1/2	192 1/2
243	286	195	195	195
246	289 1/2	197 1/2	197 1/2	197 1/2
249	293	200	200	200
252	296 1/2	202 1/2	202 1/2	202 1/2
255	300	205	205	205
258	303 1/2	207 1/2	207 1/2	207 1/2
261	307	210	210	210
264	310 1/2	212 1/2	212 1/2	212 1/2
267	3			

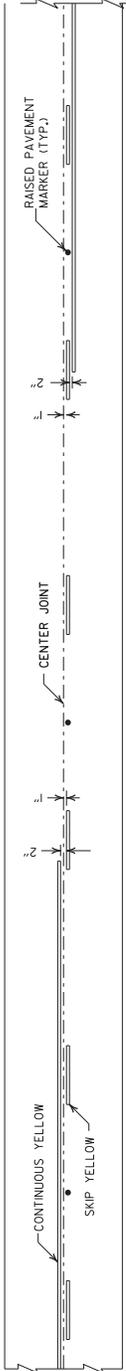
- NOTES:
1. REFER TO THE STRIPING DETAILS FOR PAVEMENT MARKING LINE WIDTHS.
 2. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH THE LATEST REVISED ADDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
 3. RAISED PAVEMENT MARKERS SHALL BE PLACED ON AN 80 FEET SPACING UNLESS OTHERWISE SHOWN IN THE PLANS.



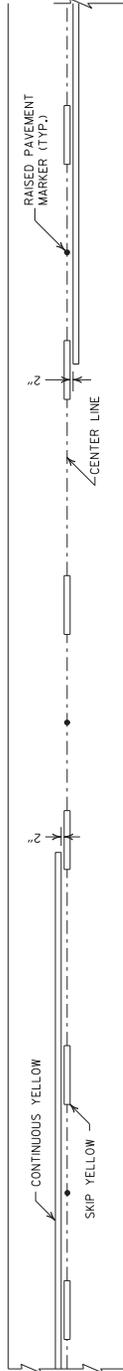
ASPHALT PAVEMENT

CONCRETE PAVEMENT

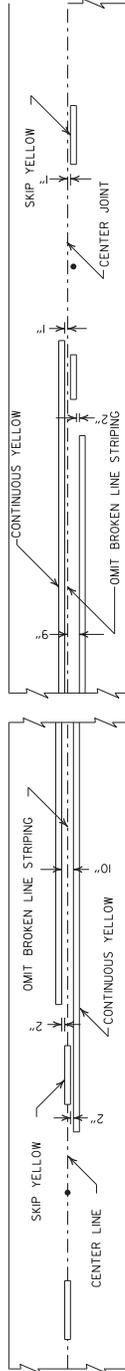
BROKEN LINE STRIPING



SOLID LINE STRIPING ON CONCRETE PAVEMENT



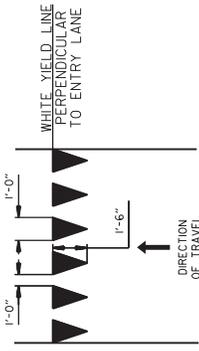
SOLID LINE STRIPING ON ASPHALT PAVEMENT



ASPHALT PAVEMENT

CONCRETE PAVEMENT

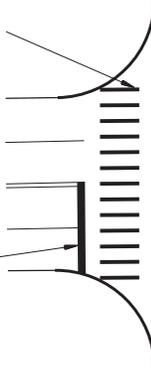
STRIPING AT ADJACENT NO PASSING LANES



12" STOP LINE OFFSET NEAR EDGE OF CROSSWALK FROM CROSSWALK

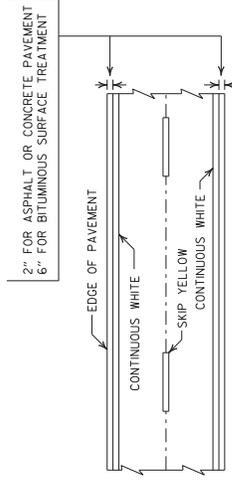
10' FT. WIDE - PLACED 4' OFFSET NEAR EDGE OF CROSSWALK FROM CROSSWALK

3' FT. MIN. FROM LANE EDGE

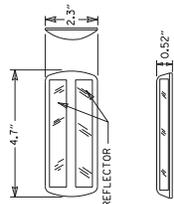


YIELD LINE DETAIL

CROSSWALK AND STOP LINE DETAILS



PAVEMENT EDGE LINE MARKING



NOTE: THE RED LENS OF THE TYPE II R.P.M. SHALL FACE THE INCORRECT TRAFFIC MOVEMENT.

NOTE: DIMENSIONS SHOWN FOR RAISED PAVEMENT MARKERS ARE TYPICAL. THE CONTRACTOR MAY SUBSTITUTE SIMILAR MARKERS WITH APPROVAL FOR SIMILAR MARKERS MAY BE MADE BY REFERRING TO THE ABOVE QUALIFIED PRODUCTS LIST.

DETAIL OF STANDARD RAISED PAVEMENT MARKERS

DATE	REVISION
2-27-20	REVISED STOP LINE DETAILS
6-1-17	ADDED YIELD LINE DETAIL
5-12-16	REVISED LINE WIDTHS, SPACING, & NOTES
9-12-13	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS
11-17-10	REVISED DETAIL OF STANDARD RAISED PAVEMENT MARKERS
11-8-04	REVISED NOTE 2 & GENERAL NOTES
8-22-02	CROSSWALK & STOPBAR DTLS.
7-02-98	ADDED DETAIL OF STD. STOP LINE
4-26-96	REVISED NOTES 3&4, ADDED R.P.M.
9-30-80	BR/AM
1-9-30-80	FILMED

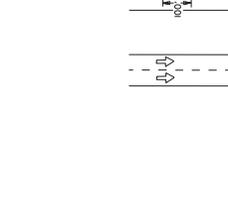
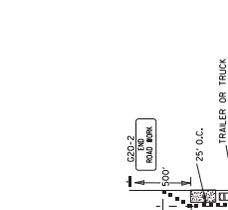
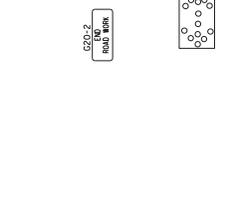
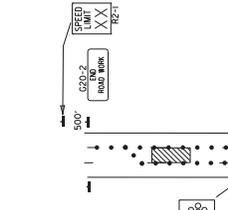
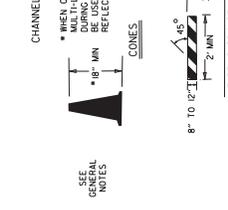
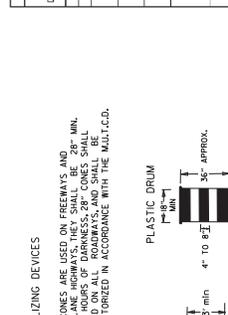
ARKANSAS STATE HIGHWAY COMMISSION

PAVEMENT MARKING DETAILS

STANDARD DRAWING PM-1

CHANNELIZING DEVICES

WHEN CONES ARE USED ON FREEWAYS AND MULTILANE HIGHWAYS, THEY SHALL BE 28" MIN. DURING HOURS OF DARKNESS. 28" CONES SHALL BE RECONFIGURED IN ACCORDANCE WITH THE MUTCD.



TRAFFIC CONTROL DEVICES

NON-INTERSTATE		TRAFFIC CONTROL	
VERTICAL DIFFERENTIAL	LOCATION	HEIGHT	TRAFFIC CONTROL
≤ 2"	CENTERLINE	1:1	PRECAST CONCRETE BARRIER
> 2"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER	2:1	PRECAST CONCRETE BARRIER
≤ 3"	EDGE OF SHOULDER OR EDGE OF SHOULDER	N/A	TRAFFIC DRUMS
≤ 4"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 5"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 6"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 7"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 8"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 9"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 10"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 11"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 12"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 13"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 14"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 15"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 16"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 17"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 18"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 19"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 20"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 21"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 22"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 23"	EDGE OF SHOULDER OR EDGE OF SHOULDER		
≤ 24"	EDGE OF SHOULDER OR EDGE OF SHOULDER		

GENERAL NOTES

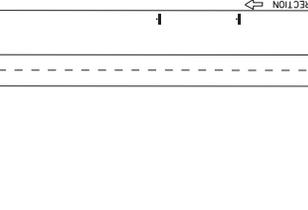
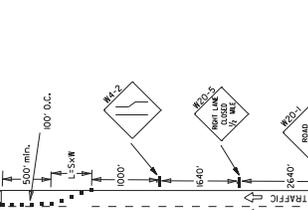
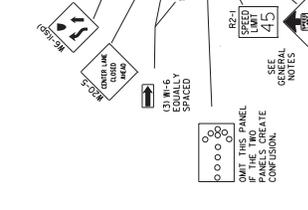
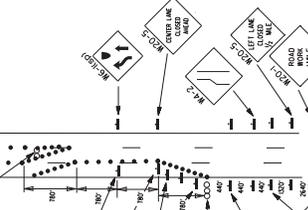
- WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS NO SHOULDER ON THE REMAINING SHOULDER WIDTH, THEN VERTICAL PANELS SHALL BE USED.
- WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS NO SHOULDER ON THE REMAINING SHOULDER WIDTH, THEN TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED.
- WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS NO SHOULDER ON THE REMAINING SHOULDER WIDTH, THEN TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED IN LIEU OF A STABILIZED WEDGE. W-17 TRAFFIC DRUMS ARE NOT TO BE USED IN LIEU OF A STABILIZED WEDGE.
- WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS NO SHOULDER ON THE REMAINING SHOULDER WIDTH, THEN TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED IN LIEU OF A STABILIZED WEDGE.
- WHEN THE SHOULDER AREA IS USED AS PART OF THE TRAVELED LANE AND THERE IS NO SHOULDER ON THE REMAINING SHOULDER WIDTH, THEN TRAFFIC DRUMS ON THE REMAINING SHOULDER WIDTH, A STABILIZED WEDGE SHALL BE USED IN LIEU OF A STABILIZED WEDGE.

INTERSTATE

VERTICAL DIFFERENTIAL	LOCATION	HEIGHT	TRAFFIC CONTROL
≤ 2"	CENTERLINE <td>1:1</td> <td>PRECAST CONCRETE BARRIER</td>	1:1	PRECAST CONCRETE BARRIER
> 2"	EDGE OF TRAVELED LANE OR EDGE OF SHOULDER <td>2:1</td> <td>PRECAST CONCRETE BARRIER</td>	2:1	PRECAST CONCRETE BARRIER
≤ 3"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td>N/A</td> <td>TRAFFIC DRUMS</td>	N/A	TRAFFIC DRUMS
≤ 4"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 5"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 6"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 7"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 8"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 9"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 10"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 11"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 12"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 13"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 14"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 15"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 16"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 17"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 18"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 19"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 20"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 21"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 22"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 23"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		
≤ 24"	EDGE OF SHOULDER OR EDGE OF SHOULDER <td></td> <td></td>		

INTERSTATE AND NON-INTERSTATE

FOR SLOPE	HEIGHT	TRAFFIC CONTROL
1:1	> 2 FT	PRECAST CONCRETE BARRIER
2:1	> 2 FT	PRECAST CONCRETE BARRIER
FLAT/RAISE 2:1	N/A	TRAFFIC DRUMS

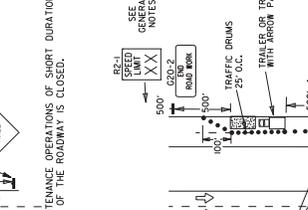
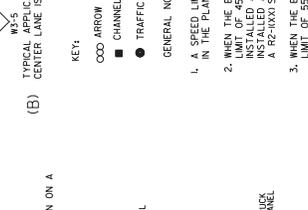
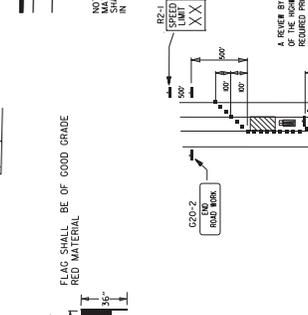


REVISIONS

NO.	DATE	REVISION
1	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
2	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
3	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
4	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
5	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
6	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
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25	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
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43	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
44	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
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48	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
49	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
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53	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
54	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
55	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
56	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
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58	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
59	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
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66	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
67	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
68	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
69	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
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GENERAL NOTES

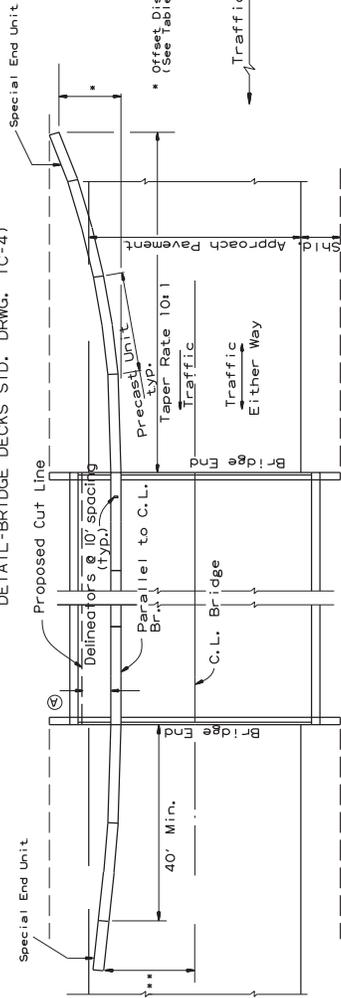
- SPEED LIMIT REDUCTION MAY BE IMPLEMENTED ONLY WHEN DESIGNATED IN THE PLAN OR WHEN RECOMMENDED BY THE ROADWAY DESIGN DIVISION.
- WHEN THE EXISTING SPEED LIMIT IS 50MPH AND THE PLANS REQUIRE A SPEED INSTALLED AT THAT LOCATION, ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/4 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-10X1 SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
- WHEN THE EXISTING SPEED LIMIT IS 60MPH AND THE PLANS REQUIRE A SPEED INSTALLED AT THAT LOCATION, ADDITIONAL R2-1 45MPH SPEED LIMIT SIGNS SHALL BE INSTALLED AT A MAXIMUM OF 1/4 MILE INTERVALS. AT THE END OF THE WORK AREA A R2-10X1 SHALL BE INSTALLED TO MATCH ORIGINAL SPEED LIMIT.
- THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHOULD BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT.
- THE SPEED LIMIT OR AS DIRECTED BY THE ENGINEER.
- WARNING LIGHTS AND/OR FLAGS MAY BE MOUNTED TO SONS OR CHANNELIZING DEVICES AT NIGHT AS NEEDED.
- PAVEMENT MARKINGS NO LONGER APPLICABLE WHICH MIGHT CREATE CONFUSION OR BE OBSCURED BY TRAFFIC OPERATORS SHALL BE REMOVED OR REPAIRED AS NECESSARY.
- THE G20-2 SIGN SHALL BE REQUIRED ON JOBS OF OVER TWO MILES IN LENGTH, WHEN THE LANE CLOSURE IS NOT AT THE BEGINNING OF THE PROJECT.
- ALL TRAFFIC SIGNS SHALL BE INSTALLED IN ADVANCE OF THE PROJECT CLOSURES THAT BEGINS INSIDE THE PROJECT LIMITS.
- FLAGGERS SHALL USE STOP/SLOW PADDLES FOR CONTROLLING TRAFFIC THROUGH WORK ZONES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.
- ALL PLASTIC DRUMS AND CONES SHALL MEET THE REQUIREMENTS OF MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
- ALL TRAFFER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE SPEED TO BE DETERMINED BY THE ENGINEER.
- ALL TRAFFER MOUNTED DEVICES SUCH AS ARROW PANELS AND PORTABLE SPEED TO BE DETERMINED BY THE ENGINEER.



REVISIONS

NO.	DATE	REVISION
1	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
2	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
3	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
4	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
5	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
6	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
7	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
8	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
9	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
10	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
11	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
12	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
13	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
14	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
15	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
16	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
17	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
18	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
19	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
20	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
21	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
22	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
23	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
24	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
25	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
26	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
27	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
28	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
29	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
30	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
31	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
32	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
33	01-15-98	ADDED NOTE 4-03-97 (REMOVED)
34	01-15-98	ADDED NOTE 4-03-97 (

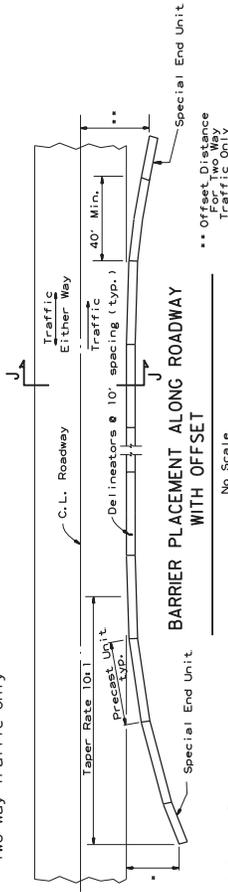
(A) 4 feet or greater preferred, if less than 4 feet, Precast Units shall be connected to slab (SEE BARRIER STABILIZATION DETAIL-BRIDGE DECK STD. DRWG. TC-4)



BARRIER PLACEMENT ALONG BRIDGE WITH OFFSET

No Scale

** Offset Distance for Two Way Traffic Only



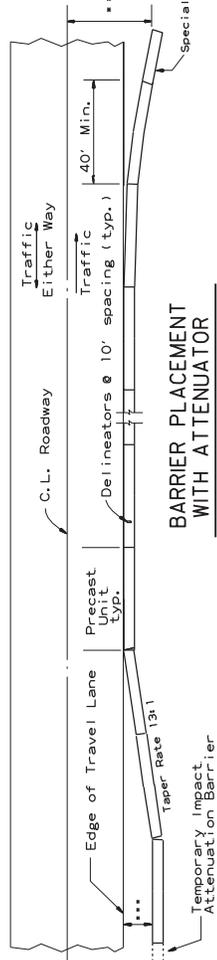
BARRIER PLACEMENT ALONG ROADWAY WITH OFFSET

No Scale

* Offset Distance (See Table)

Speed (MPH)	Offset Distance (FT.)
5-45	12
> 45	18

If offset distance is not attainable then see Barrier Placement With Attenuator Detail shown below.



BARRIER PLACEMENT WITH ATTENUATOR

No Scale

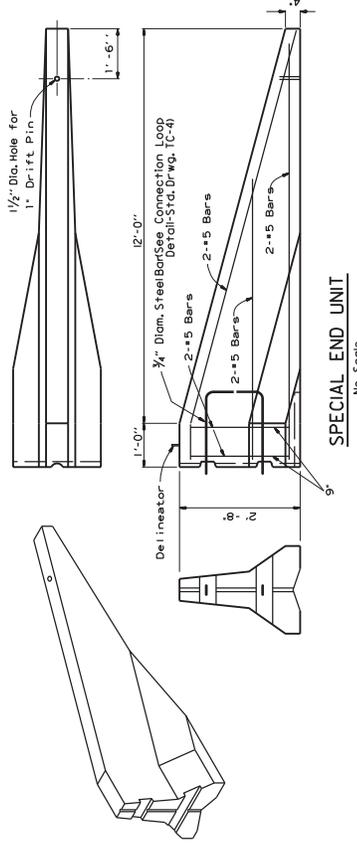
** Offset Distance For Two Way Traffic Only

*** Min. 3'-0" From Edge of Travel Lane to Nearest Edge of Attenuator

Barrier shall be dowelled to pavement when the dimension is less than 4'-0" and the dimension is greater than 24 inches.

SECTION J-J

No Scale



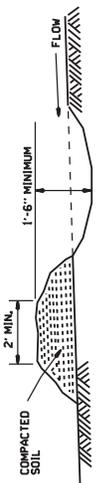
SPECIAL END UNIT

No Scale

General Notes

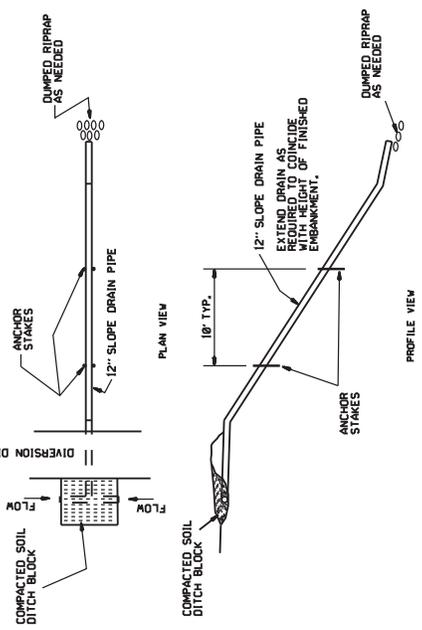
When shown on the Plans, the ends of the Temporary Precast Concrete Barrier shall be protected with a Manual For Assessing Safety Hardware (MASH) approved Crash Cushion. Payment for Crash Cushions shall be made under the item of "Temporary Impact Attenuation Barrier."

ARKANSAS STATE HIGHWAY COMMISSION	
STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION - TEMPORARY PRECAST BARRIER	
NO. 20	REVISED NOTE
NO. 20	ADDED REFERENCE TO MASH
5-25-06	REVISED BARRIER PLACEMENT
8-22-02	ISSUED NEW DRAWING
DATE	REVISION
	FILED

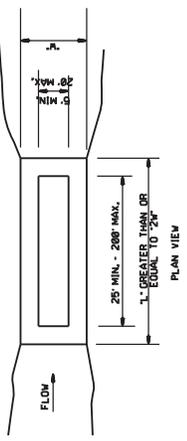


DIVERSION DITCH (E-8)

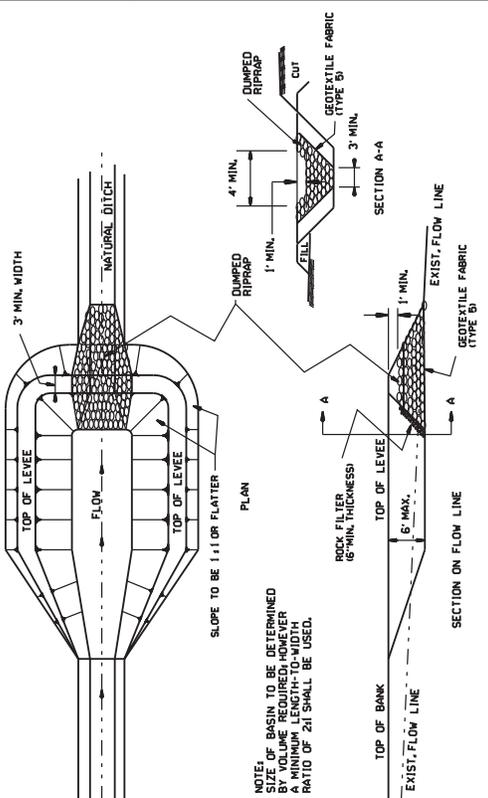
NOTE:
A T-SECTION SHALL BE USED AT THE INLET
FOR TWO-DIRECTIONAL FLOW,
AND AN L-SECTION USED FOR
ONE-DIRECTIONAL FLOW.



SLOPE DRAIN (E-12)

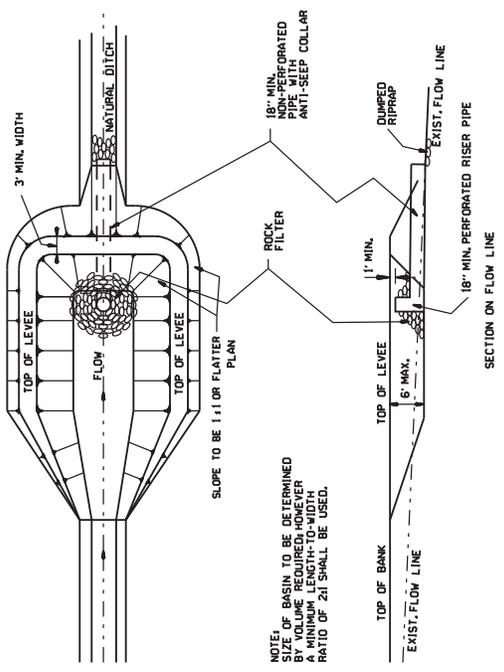


SEDIMENT BASIN (E-14)



SEDIMENT BASIN WITH RIPRAP OUTLET (E-9)

NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED, HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.



SEDIMENT BASIN WITH PIPE OUTLET (E-10)

NOTE:
SIZE OF BASIN TO BE DETERMINED
BY VOLUME REQUIRED, HOWEVER
A MINIMUM LENGTH-TO-WIDTH
RATIO OF 2:1 SHALL BE USED.

ARKANSAS STATE HIGHWAY COMMISSION	
TEMPORARY EROSION CONTROL DEVICES	
STANDARD DRAWING TEC-2	
6-2-94	REVISED E-8 & E-12, ADDED E-14 & DELETED E-13
4-1-93	ISSUED
DATE	REVISION
	FILBRO

**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 REPAIR THE PAVEMENT AND SLIDE CAUSED BY FLOOD DAMAGE ALONG TWO PORTIONS OF HWY. 23 IN FRANKLIN COUNTY. THIS PROJECT CONSISTS OF CLEARING AND GRUBBING, EARTHWORK, ACHM SURFACE COURSE, COLD MILLING ASPHALT PAVEMENT, MAINTENANCE OF TRAFFIC, MINOR DRAINAGE STRUCTURES, EROSION CONTROL ITEMS, PAVEMENT MARKING, AND MISC. ITEMS.

State Highway 23, Section 7, in **FRANKLIN** 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 **040815** **STATE JOB**

Job Name: **HWY. 23 FLOOD DAMAGE REPAIRS (FRANKLIN CO.) (S)**

said project being approximately **0.100 mile in length.**

Proposal received until 10:00 a.m. on November 4, 2020

TO THE ARKANSAS STATE HIGHWAY COMMISSION:

Gentlemen: By submission of your bid, you agree to the following:

It is hereby certified that a careful examination has been made of the Plans, Specifications, Supplemental Specifications, Special Provisions, and Form of Contract and the site of the work throughout its whole extent. On the basis of the Plans, Specifications, Supplemental Specifications, Special Provisions, and Form of Contract, the bidder proposes to furnish all necessary machinery, equipment, tools, labor and other means of construction, and to furnish all materials as specified, in the manner and at the time prescribed, and to finish the entire project within the time hereinafter proposed. The bidder understands that the quantities of work mentioned herein are approximate only, and are subject to increase or decrease, and hereby proposes to perform all quantities of work, whether increased or decreased, in accordance with the provisions of the Specifications, and at the unit prices bid in the attached Schedule of Items.

Receipt is hereby specifically acknowledged, and complete examination expressly guaranteed of the following:

1. Standard Specifications for Highway Construction, Edition of 2014.
2. Supplemental Specifications.
3. Special Provisions.
4. Proposal Documents.
5. Schedule of Items.
6. Construction Plans.

The bidder further proposes to perform all Extra Work that may be required, on the basis provided in the Specifications, and to give such work personal attention, and to secure economical performance.

The bidder further proposes to execute the contract agreement, and to furnish satisfactory bonds within ten days after he has received notice that he has been awarded the contract. The bidder further agrees to begin work when ordered by the Engineer, or within ten days thereafter, and to complete the work within the number of working days bid by the bidder in accordance with the Job Special Provision “Establishing Contract Time-Working Day Contract.”

PROPOSAL DOCUMENTS

(Continued)

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.: 040815

Date Estimated: 8/26/2020

Job Name: HWY. 23 FLOOD DAMAGE REPAIRS (FRANKLIN CO.) (S)

Date Revised:

Federal Aid Project: 9990

Line Number	Item Code and Description	Estimated Quantity	Unit Bid Price	Price Extension
Section 01 - PROPOSAL ITEMS				
0001	SP&201 - CLEARING	3.000 STA		
0002	201 - GRUBBING	3.000 STA		
0003	202 - REMOVAL AND DISPOSAL OF PIPE CULVERTS	2.000 EACH		
0004	SS&210 - UNCLASSIFIED EXCAVATION	839.000 CUYD		
0005	SP&210 - COMPACTED EMBANKMENT	839.000 CUYD		
0006	SP&210 - ROCK FILL	5,256.000 TON		
0007	SS&401 - TACK COAT	172.000 GAL		
0008	SPSS407 - MINERAL AGGREGATE IN ACHM SURFACE COURSE (1/2")	158.000 TON		
0009	SPSS407 - ASPHALT BINDER (PG 64-22) IN ACHM SURFACE COURSE (1/2") (MINIMUM BID \$120.00)	9.000 TON		
0010	412 - COLD MILLING ASPHALT PAVEMENT	289.000 SQYD		
0011	SPSS603 - MAINTENANCE OF TRAFFIC	1.000 L.S.		
0012	SS&604 - SIGNS	408.000 SQFT		
0013	SS&604 - BARRICADES	32.000 LF		
0014	SS&604 - TRAFFIC DRUMS	14.000 EACH		
0015	SS&604 - FURNISHING AND INSTALLING PRECAST CONCRETE BARRIER	416.000 LF		
0016	606 - 18" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	108.000 LF		
0017	606 - 36" REINFORCED CONCRETE PIPE CULVERTS (CLASS IV)	108.000 LF		
0018	606 - 18" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2.000 EACH		
0019	606 - 36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	2.000 EACH		
0020	606 - SELECTED PIPE BEDDING	100.000 CUYD		
0021	615 - PAVEMENT REPAIR OVER CULVERTS (CONCRETE)	12.000 CUYD		
0022	620 - LIME	4.000 TON		
0023	SP&620 - SPECIAL SEEDING: NATIVE GRASSES	2.000 ACRE		
0024	SP&620 - SPECIAL SEEDING: NATIVE WILDFLOWERS	2.000 ACRE		
0025	SS&620 - MULCH COVER	4.000 ACRE		

Arkansas Department of Transportation
Schedule of Items

State Job No.: 040815

Date Estimated: 8/26/2020

Job Name: HWY. 23 FLOOD DAMAGE REPAIRS (FRANKLIN CO.) (S)

Date Revised:

Federal Aid Project: 9990

Line Number	Item Code and Description	Estimated Quantity	Unit Bid Price	Price Extension
0026	620 - WATER	245.800 MGAL		
0027	621 - TEMPORARY SEEDING	2.000 ACRE		
0028	621 - SILT FENCE	600.000 LF		
0029	621 - SEDIMENT BASIN	50.000 CUYD		
0030	621 - OBLITERATION OF SEDIMENT BASIN	50.000 CUYD		
0031	621 - ROCK DITCH CHECKS	50.000 CUYD		
0032	623 - SECOND SEEDING APPLICATION	2.000 ACRE		
0033	624 - SOLID SODDING	44.000 SQYD		
0034	SP - PORTABLE TRAFFIC SIGNAL SYSTEM - ACTUATED	15.000 WEEK		
0035	718 - REFLECTORIZED PAINT PAVEMENT MARKING WHITE (6")	900.000 LF		
0036	718 - REFLECTORIZED PAINT PAVEMENT MARKING YELLOW (6")	900.000 LF		
0037	SS&731 - TEMPORARY IMPACT ATTENUATION BARRIER	1.000 EACH		
0038	SS&731 - TEMPORARY IMPACT ATTENUATION BARRIER (REPAIR)	1.000 EACH		
0039	816 - FILTER BLANKET	1,110.000 SQYD		
0040	816 - DUMPED RIPRAP	555.000 CUYD		
0041	SP&816 - FOUNDATION PROTECTION RIPRAP	217.000 TON		
			Section 01 Total:	_____
			Subtotal:	_____
0042	601 - MOBILIZATION (UNIT BID AMOUNT MAY NOT EXCEED 5% OF SUBTOTAL)	1.000 L.S.		
			Bid Total:	_____

This job requires the bidder to establish the contract time according to the Special Provision "Establishing Contract Time - Working Day Contract".

Days _____

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)

ARKANSAS DEPARTMENT OF TRANSPORTATION
SUPPLEMENT TO PROPOSAL
RESTRICTION OF BOYCOTT OF ISRAEL CERTIFICATION

Pursuant to Arkansas Code Annotated § 25-1-503, a public entity **shall not** enter into a contract valued at \$1,000 or greater 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 Israel.

By signing below, the Contractor agrees and certifies that they do not boycott Israel and will not boycott Israel during the remaining aggregate term of the contract.

If a company does boycott Israel, see Arkansas Code Annotated § 25-1-503.

Bid Number/Contract Number	
Description of product or service	
Contractor name	

Contractor Signature: _____

Date: _____

ARKANSAS DEPARTMENT OF TRANSPORTATION

CERTIFICATION STATEMENT

JOB 040815

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:** _____