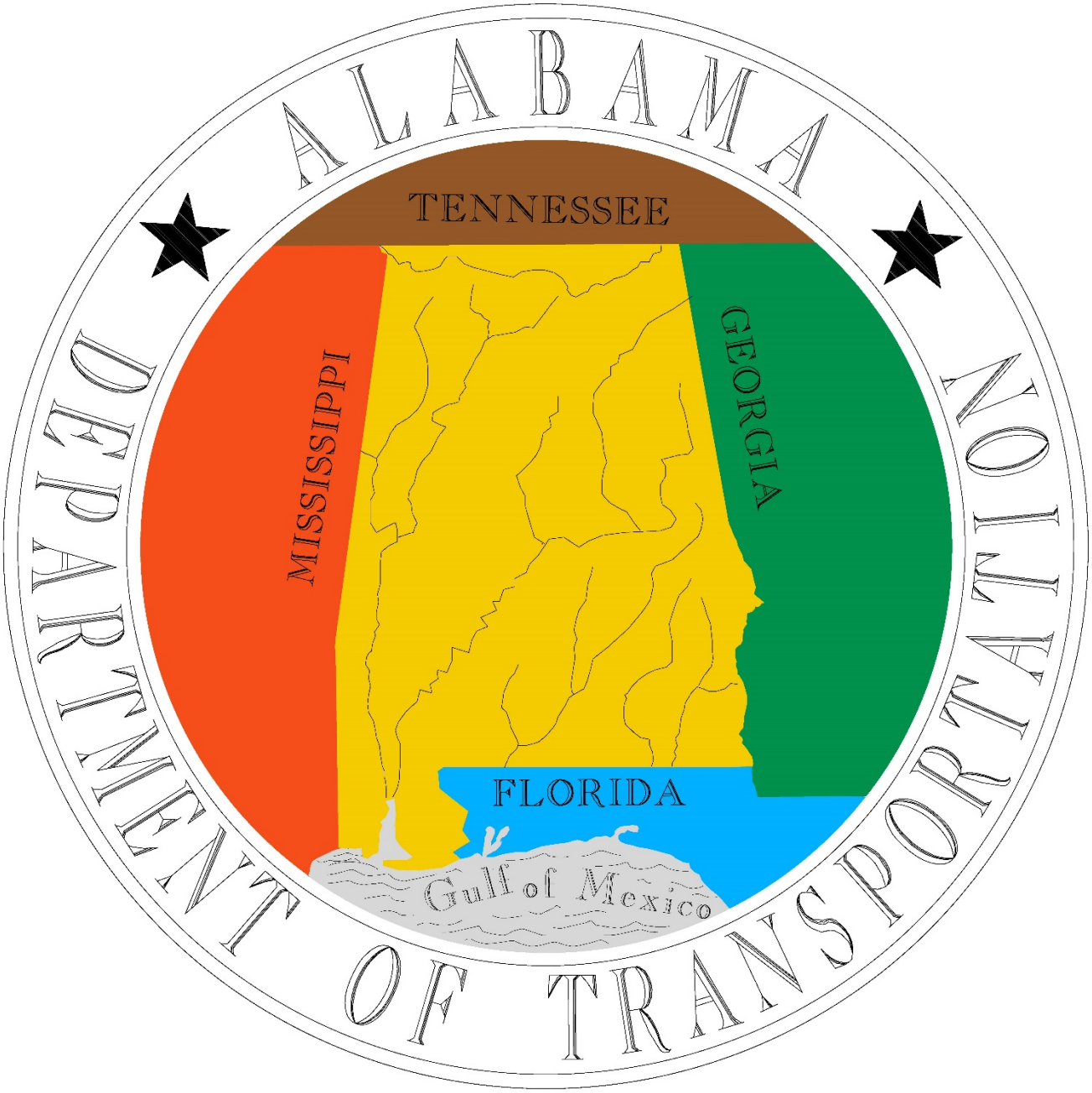


Guidelines for Operation

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

PROCEDURE FOR CHANGES TO GUIDELINES

The following are procedures to be used to revise the Guidelines for Operation presented in this document:

- Revisions may be in the form of additions, deletions or modifications.

- Revisions may be made through the actions of the Transportation Director, Deputy Directors, the Chief Engineer, the Assistant Chief Engineers, Bureau Chiefs, and Region Engineers.

- Deletions should be in the form of a letter from the Transportation Director withdrawing the Guideline. The contents of the appropriate section will be marked to show effective date of deletion.

- Revisions, other than deletions, should be submitted in draft form to the State Design Engineer prior to ascertaining the required signatures as outlined herein. The revised guideline will be assigned a GFO number and will be returned to the initiator in the standard format ready for the signature process.

- Revisions initiated by the Transportation Director need bear only the signature of the Transportation Director.

- Revisions initiated by the Deputy Directors, Chief Engineer or his assistants, need to bear the signatures of the Deputy Directors and/or the Chief Engineer and the Transportation Director.

- Revisions initiated by the Bureau Chiefs and Region Engineers will require at least three signatures. It will be the responsibility of that Region Engineer or Bureau Chief who is seeking the change to handle the coordination with others involved and present the facts and proposed modification for signature to the Deputy Directors and/or the Chief Engineer. The Transportation Director's signature will be the final signature required.

- Revisions in their completed form should be resubmitted to the State Design Engineer to be placed in line for printing and distribution.

- Guideline revisions do not have to be initiated by the original author.

SECTION 1

ADMINISTRATIVE

C O N T E N T S

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: EQUAL EMPLOYMENT STATEMENT

It is the intent of the State of Alabama Highway Department to assure compliance with Title VII, Section 703(b) of the Civil Rights Act of 1964 and related codes, statutes and regulations.

The following is the State of Alabama Highway Department's Equal Employment Opportunity Statement:

> "It is the intent of the State of Alabama Highway Department to assure that applicants are employed and employees are treated during employment without regard to their race, religion, sex, color, national origin, age, or handicap. Actions covered by this statement shall include employment, promotion, demotion, transfer, recruitment, selection for training, rates of pay, and any other form of compensation."

RECOMMENDED FOR APPROVAL: _____
EQUAL EMPLOYMENT OPPORTUNITY OFFICER

APPROVAL: _____
ADMINISTRATIVE ENGINEER

APPROVAL: _____ 5/20/88
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: SOLICITATION WITHIN STATE HIGHWAY BUILDING

The solicitation by any group or individual within State Highway Department buildings provides a distraction to workday effort. These disruptions hinder work effort and are not in the best interest of utilization of the workday and the expenditure of the tax dollar.

In consideration of the above statements, no solicitation will be allowed within State Highway Department buildings.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Donald R. Lucas_____
ADMINISTRATIVE ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: FIREARMS IN STATE HIGHWAY DEPARTMENT BUILDINGS

No firearms shall be brought into any State Highway Department building at any time by an Alabama Highway Department employee. Any employee violating the above statement shall be subject to disciplinary action.

This shall not apply to any duly authorized law enforcement officer.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Donald_R. Lucas_____
ADMINISTRATIVE ENGINEER

APPROVAL: _____Royce G.King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: MICROCOMPUTERS

In order to realize the maximum benefits of microcomputers, its utilization must be coordinated with other data processing activities within the department. To accomplish this coordination, all requests for computer hardware and software, including those relating to microcomputers, must be submitted to the Bureau of Computer Services for review and approval. This procedure will also aid in the processing of requests through the Data Systems Management Division of the Finance Department.

RECOMMENDED FOR APPROVAL: _____Danny L. Floyd_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Donald R. Lucas_____
ADMINISTRATIVE ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: HARD HATS, HIGH VISIBILITY SAFETY APPAREL, AND WHISTLES

Hard Hats

The wearing of hard hats during any hazardous activity is mandatory. These activities include those maintenance and construction work areas where exposure to head injury might logically be anticipated. Supervisors and visitors to work sites are expected to wear and enforce the wearing of hard hats as noted above. Any exceptions to this should be handled on an individual basis with appropriate documentation in the personnel files.

High Visibility Safety Apparel and Whistles

All workers within a highway right-of-way who are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction equipment within the work area shall wear Class 2 or Class 3 high-visibility safety apparel and shall carry an easily accessible Department-approved whistle. The whistle is to be used to alert co-workers of potentially hazardous situations such as an errant vehicle entering the work area, run-over/back-over or struck-by hazards from construction or maintenance equipment, and other dangerous or unsafe conditions.

Appropriately-sized apparel must be furnished to each worker. All apparel shall be worn as intended with zippers, velcro, or buttons fastened in order to maximize the visibility of the worker. Worn or dirty apparel shall be replaced as needed. Apparel that has exceeded the maximum number of washings shall also be replaced (wash rating is typically shown on a tag).

Workers means people on foot whose duties place them within the right-of-way of a highway. Examples of *Workers* include the following:

- Highway pre-construction, construction and maintenance forces
- Survey and utility crews
- Non-Departmental responders to emergencies/incidents within the highway right-of-way
- Law enforcement personnel when directing traffic, investigating crashes, and handling lane closures, obstructed roadways, or disasters within the right-of-way

High-visibility safety apparel means personal protective safety clothing that is intended to provide conspicuity during both daytime and nighttime usage, and that meets the performance requirements of either the ANSI/ISEA 107-2010 or the ANSI/ISEA 107-2015 publications.

For apparel labeled as meeting the requirements of ANSI/ISEA 107-2015, all Department personnel, Consultant, and County personnel shall wear Type R (Roadway) garments. Non-Departmental emergency/incident responders and law enforcement personnel shall wear Type P (Public Safety) garments.

Reference is made to the requirements of Title 23 of the Code of Federal Regulations, Part 634, titled the "Worker Visibility Rule".

RECOMMENDED FOR APPROVAL:

Winston J. Powe, PE
State Construction Engineer

Stacey N. Glass, PE
State Maintenance Engineer

APPROVAL:

George H. Conner, PE
Deputy Director, Operations

John Cooper
Transportation Director

Date: 4-10-2018

1-5 Rev. April 9, 2018

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: SPECIAL WORK AUTHORIZATION LIMITATIONS

Work to be performed for outside entities by the Department on a Special Work Authorization should be carefully reviewed by all parties concerned to ensure that this work can be accomplished without having a detrimental effect on the normal operations of the Department. The monetary amount of such work should normally be limited to a total of approximately $20,000 at any particular location. Special Work Authorizations, in excess of this amount, should be accompanied by special recommendations to the Director outlining the reasons for the overrun of the above amounts, and no work or other action should be started prior to his approval.

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____7/26/88____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: EMPLOYEES WORKING FOR CONTRACTORS

Advisory Opinion No. 1228 by the Alabama Ethics Commission states that State Highway Department personnel and county employees who are charged with the responsibility of inspecting and approving work performed under a highway construction project must not be employed by the contractor. All employees of the State Highway Department are to abide by this Ethics Commission opinion and failure to do so will result in disciplinary action.

No state employee should perform any work for any contractor and/or vendor of any type who has a contract with the State Highway Department for either doing work or furnishing any type of materials for which the State Highway Department may be responsible for testing, checking, or in any way approving for use. This includes all phases of our work and any questions concerning the propriety of doing such work on a specific case should be addressed directly to the Highway Director or his designated representative.

The above referenced opinion further states that this pertains to any work done at any time, whether it be on holidays, weekends, or whether the employee may be taking annual leave time to perform such work. It is not proper and does not appear to be in the public's interest to allow such activities to be conducted.

Complete compliance with this guideline is expected as of the date of the Director's signature.

APPROVAL: Royce G. King 7/26/88

HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: ISSUE OF HAND TOOLS (MANUAL OR POWER) AND PERSONAL SAFETY ITEMS

All initial issues of hand tools and personal safety items will be made only upon presentation of a properly-prepared and authorized Field Requisition for Supplies (E-8) or Requisition on Stock Room (E-5) to the Inventory Clerk.

Issue of replacement hand tools and personal items will require return of worn out or broken items to the Inventory Clerk with a properly-prepared request document. Failure to return an item will require an explanation, in writing, before re-issue will be permitted.

HAND TOOLS AND PERSONAL SAFETY ITEMS ARE AS FOLLOWS:

a) Electrical or air power tools under $100 value.
b) Wrench sets, socket sets, sockets, wrenches, pliers, and other related mechanical tools.
c) Shovels, picks, axes, sledge hammers, ditchblades, and other suchlike maintenance tools.
d) Rain gear, gloves, hard hats, safety flags, water coolers-portable, and etc.

RECOMMENDED FOR APPROVAL: _____Robert W. Pickett, Jr._____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____10/31/88___
HIGHWAY DIRECTOR DATE

ALABAMA
DEPARTMENT OF TRANSPORTATION
GUIDELINES FOR OPERATION

SUBJECT: LEASING RIGHT-OF-WAY AIRSPACE

Leases of all Right-of-Way Airspace to proprietary users will be at fair market value on a monthly or annual rental basis. If the right-of-way airspace was acquired as a result of a project funded in whole or in part with Federal-aid, the Federal share of the net income from the revenues received must be used for projects eligible under Chapter 1 of Title 23 United States Code.

Leases of all Right-of-Way Airspace to local governments or state agencies for non-proprietary use will be at one dollar per year rental rate.

Details for each specific lease will be drafted to meet the specific need of the lease involved. One year leases, having a 30 to 90 day cancellation clause exercisable by either party, will be used. The leases will be renewable unless either party wishes to terminate.

RECOMMENDED FOR APPROVAL: Steven E. Walker
BUREAU CHIEF

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

6/15/15
DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: LIMITATION ON PURCHASE ORDER ASPHALT PLANT MIX

Asphalt plant mix to be utilized and placed by state forces and purchased through our annual contract purchase orders should normally be limited to a maximum of 1000 metric tons of any one type of plant mix involved.

Exceptions to this guideline should have prior approval of the Highway Director.

RECOMMENDED FOR APPROVAL: _____W.E. Page_____
OPERATIONS ENGINEER

APPROVAL: _____Tom Espy Jr._____ _____11/9/89_____
CHIEF ENGINEER DATE

APPROVAL: _____Royce G. King_____
HIGHWAY DIRECTOR

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: SALE AND ACCEPTANCE OF BID PROPOSALS

The following guidelines should be followed in the sale and acceptance of bid proposals for projects let to contract by the Alabama Highway Department after February 1, 1990:

Bid proposals will be sold to contractors that meet the prequalification requirements set forth by the Standard Specifications for Highway Construction and applicable amendments. All sales are final and no refunds will be given.

A contractor's bid proposal will not be accepted by the Department if the contractor has been disqualified by the Department unless the disqualification is for unsatisfactory progress and the disqualification notice was issued within 24 hours of the bid opening.

RECOMMENDED FOR APPROVAL: _____N.S Cauthen_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ ____2/1/90_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: TRANSPORTATION NEEDS - CONSTRUCTION

The assignment of construction personnel is appropriately described as temporary. Their base location coincides with the location of the project to which they are assigned; consequently, these employees are frequently transferred around the field division as project assignments change.

Costs associated with transportation of personnel constitutes only a minor part of the total costs of providing engineering and inspection for the construction program in a field division.

PROJECT ENGINEERS

Personnel who are assigned with the responsibilities of project engineer can be assigned a vehicle. Generally a radio-equipped pickup is considered appropriate.

Project engineers can be allowed to commute a reasonable distance in their assigned vehicle to their residence when off duty.

OTHER CONSTRUCTION PERSONNEL

Construction personnel can be allowed to commute in state vehicles from an approved parking site to their assigned project sites.

As a general rule, commuter vehicles should be parked at a Highway Department facility such as division or district office. However, the division engineer should be allowed to authorize off-premise parking sites (other than employees' residence) on special occasions when the best interest of the state can be gained and proper security can be maintained.

EXCEPTIONS

Any deviation from these guidelines must be approved by the Highway Director.

APPROVAL: _____D.W. Vaughn_____
ADMINISTRATIVE ENGINEER

APPROVAL: _____Royce G.King_____ ____4/26/90____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: PROCEDURES FOR HANDLING HAZARDOUS/TOXIC MATERIAL SITES INVOLVED WITH HIGHWAY PROJECTS

I. Introduction and Background

A. Federal and State Legislation (and subsequent regulations) specify that owners of property containing hazardous and/or toxic material can be held responsible for cleaning up the site(s). Such clean-ups can be extremely expensive, particularly if groundwater is contaminated, and can result in a tremendous escalation in project costs as well as considerable delays. It is, therefore, in the Highway Department's interest to identify and avoid these sites whenever possible. If sites cannot be avoided, attempts will be made to have them cleaned up prior to acquisition. When the Highway Department must pay for clean-ups, attempts will be made to recover the clean-up costs from the responsible party(ies).

B. These procedures apply to state funded as well as federally funded projects, and to projects on existing right-of-way as well as acquired right-of-way. When consulting firms are performing the location and environmental studies for a project, the consultant will perform the duties outlined below for the location and environmental personnel. When a Division is the "Lead Agency" for project development, Division location personnel will perform the duties outlined for the Location Section.

II. Identification of Potential Hazardous/Toxic Sites

A. One of the first items in the development of any project is for the Location Section (or Division Location personnel if Division is the lead agency) to develop all feasible alternates that are to be considered within a project corridor. At this point, as part of the initial site review, the Location Section (or Division) will identify as many potentially hazardous waste sites (underground storage tanks, landfills, etc.) as possible and will attempt to avoid them if at all possible with the preliminary alternates that are developed.

B. The next phase of location studies involves preparation of base maps showing the alternates to be carried forward for detailed studies. At this point, the Location Section will forward layouts to: (1) Right-of-Way (ROW) Bureau, (2) Utilities Section, (3) Environmental Technical Section (ETS), and (4) the Hazardous Material Coordinator (HMC) located in the Bureau of Materials and Tests (M&T). (If Division is the lead agency, layouts will be furnished directly to Division ROW and Utility personnel, instead of the ROW Bureau and the Utilities Section.)

1. Division ROW personnel, in performing their relocation analysis to be included in environmental documents, will note any underground storage tanks (active and inactive), landfills, industries with potential hazardous/toxic waste, etc., that will likely be acquired. For properties in developed areas, a research of ownership for the previous 50 years (at least) will be conducted in an attempt to determine if the property was previously used in an activity which could have involved hazardous/toxic materials. A site identification form will be forwarded to the ROW Bureau, who will send copies to the ETS and the Location Section of the Design Bureau.

2. Division utility personnel, in their field review to determine a utility cost estimate, will note any underground storage tanks or other sites with potential hazardous/toxic material within the anticipated right-of-way. Coordination will be made with Division ROW to eliminate duplicate sites. Site identification forms (for non-duplicate sites) will be forwarded to the Utilities Section, who will send copies to the Location Section and ETS.

3. ETS personnel, as part of their environmental studies for a proposed project, will attempt to identify underground storage tanks (active and inactive), landfills, industries with potential hazardous/toxic wastes, etc., that may be affected by the project. Site identification forms will be forwarded to the Location Section.

4. The HMC will review the layout in conjunction with appropriate Alabama Department of Environmental Management (ADEM) lists to determine conflicts with any (1) known hazardous/toxic waste generators, treaters, storers or disposers; (2) The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites; or (3) registered underground storage tanks (UST's). This information will be forwarded to the Location Section and the ETS.

5. During the public involvement and public hearing process, requests will be made to the public for information on any hazardous/toxic waste sites. Forms will be available for individuals to complete and turn in to State Personnel.

C. The Location Section (or Division Location Section) will review the location of all potential hazardous/toxic sites identified during the location phase. At this time, a field review (if deemed necessary) may be made by Location and ETS personnel and the HMC to determine if minor revisions need to be made to preliminary alignments to avoid potential hazardous/toxic sites. If practical, an alternate that avoids hazardous/toxic sites should be selected. If a hazardous/toxic site cannot be avoided, the reasons should be properly documented and furnished to the ETS.

D. For sites determined (under Item C) to be not practical to avoid, the ETS will forward the site identification forms to the HMC with a request for investigation.

III. Determination of Type and Magnitude of Contamination,

Clean-up Procedures and Estimated Cost

A. For sites involving only petroleum contamination or petroleum UST's, the HMC will arrange to have a drill crew (either M&T or Division) take appropriate samples. The HMC will have the samples analyzed by the M&T lab for total petroleum hydrocarbons (TPH).

1. If test results indicate that the site(s) are not contaminated, tank closures will usually be handled as part of the construction contract.

2. In some cases, if lead time permits, it may be desirable to contract for tank closure prior to construction of the project. The HMC will coordinate (through the M&T Bureau Chief) with the Assistant Chief Engineer (Engineering) for this decision.

3. If tank closure is handled prior to construction, it may be handled under a consultant agreement (coordinated by the HMC) or a separate contract may be let, as determined by the Assistant Chief Engineer. All tank closure contracts will be coordinated with the HMC.

4. In either case, the HMC will forward the above information to the Design Bureau, ETS, ROW and the appropriate Division. If tank closure is to be handled during construction, appropriate notes and/or special provisions will be incorporated into the plans by the designer. All reports for UST closures or hazardous/toxic site clean-ups will be coordinated through the HMC prior to submittal to ADEM or other public agencies.

B. For sites that have the potential for contamination other than (or in addition to) petroleum contamination, the HMC will usually coordinate with a consultant to sample and analyze the site. In some situations, the HMC may arrange for samples to be picked up by the Highway Department personnel and analyzed by the State Lab (through ADEM).

C. For sites determined under Items A or B to be contaminated, the HMC will coordinate with a consultant to determine the type and extent of contamination, develop a plan for the most cost-effective method of clean-up, and provide an estimated cost for the clean-up. The HMC will coordinate the consultant's report with ADEM for confirmation of clean-up requirements or exemptions. A copy of the consultant's report will be forwarded to the Design Bureau, ETS, ROW and the appropriate Division. For federally funded projects, a copy will also be sent to the Federal Highway Administration (FHWA).

1. A review will be made at this time by the Lead Agency to determine if clean-up costs are so excessive as to warrant project relocation or abandonment.

2. If the project is continued as proposed (still involving the contaminated site), information about the site will be included in the environmental document by the ETS for federally funded projects. The environmental

document will be reviewed and approved by FHWA prior to Location Approval.

3. The HMC will contact ADEM to attempt to have the property owner clean-up the site prior to acquisition of the property by the department.

4. The ROW Engineer will consult with the Assistant Chief Engineer (Engineering) for a decision on whether to purchase the property prior to clean-up will be considered in the appraisal of the property.

5. After the property is acquired, if lead time permits, it may be desirable to contract for the tank closure and/or clean-up prior to construction of the project. The HMC will coordinate (through the M&T Bureau Chief) with the Assistant Chief Engineer (Engineering) for this decision.

6. If tank closure and/or clean-up is handled prior to construction, it may be handled under a consultant agreement (coordinated by the HMC) or a separate contract may be let, as determined by the Assistant Chief Engineer. All clean-up contracts will be coordinated with the HMC.

7. If the decision is made (in Section III, Item C,5) to include clean-up of the site(s) as part of the construction contract, the HMC will forward this information to the Design Bureau and the appropriate Division. Appropriate notes and/or special provisions will be incorporated into the plans by the Designer. All reports for UST closures or hazardous/toxic site clean-ups will be coordinated through the HMC prior to submittal to ADEM or other public agencies.

IV. Late Discovery of Sites

A. During the survey of the selected alternate, location survey parties will note any UST's, landfills, or other potentially hazardous/toxic waste site on the site identification form and forward it to the Location Section (Central Office or Division). For any site(s) not previously reviewed, the Location Section (or Division) will determine if the line can be shifted to miss the site and, if not, will forward the site identification forms to the HMC for investigation. (For federally funded projects, a copy of the form will also be sent to FHWA.) Procedures, in Section III will then be followed.

B. Some hazardous/toxic or UST sites may not be discovered until the right-of-way appraisal stage. For sites discovered at this time (not previously investigated), ROW will forward the site identification form to the HMC with a request to determine the type and extent of contamination and an estimated cost for clean-up. (For federally funded projects, a copy of the form will also be sent to FHWA.) Procedures under Section III will then be followed for these sites.

C. Some hazardous/toxic or UST sites may be discovered during construction. Site information will be forwarded by the Division through the Construction Bureau to the HMC. (For federally funded projects, a copy of the form will also be sent to FHWA.) The

HMC will coordinate the appropriate portions of Section III, and will arrange a contract for the clean-up, if required.

V. Priorities for Hazardous/Toxic Site Investigations

Since the HMC will be receiving numerous requests for site investigations from a number of different sources, it is necessary that priorities be established. Each Section or Bureau (ETS, ROW, etc.) will identify priorities for their requests. The HMC will coordinate (through the M&T Bureau Chief) with the Assistant Chief Engineer (Engineering) for overall priorities.

VI. The Assistant Chief Engineer will coordinate any final decisions on these matters through the Consultant Selection Committee, the Chief Engineer and Highway Director as appropriate.

APPROVAL: _____Tom Espy Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____12/26/90___
HIGHWAY DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: CONFIDENTIALITY OF THE BIDDING PROCESS

Maximum confidentiality must be maintained regarding certain documents and information relating to the bid process of transportation construction projects. This includes the Department's official estimate and the contractor's official bid proposal, including all information pertaining thereto and contained therein.

A. OFFICIAL ESTIMATE

The Department's official estimate will be held in strict confidence and available only to those personnel within the Department and the Federal Highway Administration who have a definite need to know until such time as the project is awarded and the estimate made a matter of public record.

B. BID REVIEW

1. The Bid Review Committee will meet following receipt of the bids and review the bids against the Department's official estimate. Bids recommended for award or rejection will be forwarded through the Chief Engineer to the Transportation Director for their concurrence or non-concurrence in the Bid Review Committee report.

2. All actions and deliberations of the Department's Bid Review Committee will be kept as strict confidential information within the Department.

3. If the Bid Review Committee feels it needs additional information prior to recommending award or rejection of a bid, the Bid Review Committee shall, by separate letter, so notify the Transportation Director through the Chief Engineer. If the Transportation Director concurs, the bidder will be requested by the Chairman of the Bid Review Committee to submit this information. The bidder will be provided with the opportunity to meet with a subcommittee of the Bid Review Committee to present information relative to those items approved by the Transportation Director. The bidder must submit or present this information to the subcommittee within five working days after receipt of notification from the Committee Chairman.

The subcommittee of the Bid Review Committee will be as follows:

Chairman of the Bid Review Committee
State Construction Engineer
State Maintenance Engineer
State Office Engineer

Additional members of the Bid Review Committee may attend the subcommittee meeting at the discretion of the Committee Chairman. Advisors to the Bid Review Committee and subcommittee will be the staff of the Bureau of Office Engineer.

4. The subcommittee shall also meet with the low bidder when requested by the Transportation Director in order to provide additional information for consideration by the committee. The low bidder must present this information within five working days after receipt of notification from the Committee Chairman.

5. Any meeting between the bidder and the Department regarding his bid shall be attended by a minimum of two members of the subcommittee of the Bid Review Committee. The sole purpose of the meeting is to receive information from the bidder.

6. No other contact will be made by the Department official with the bidder other than the process referenced above. If any Department employee is contacted regarding the status of any bid by any bidder, bonding company, vendor or person, their reply shall simply state the bid is under review by the Department and no discussion of the details of the review process are in order.

RECOMMENDED FOR APPROVAL: Clay P. McBurien
STATE OFFICE ENGINEER

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

12-4-15
DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: ARCHITECTURAL SERVICES

When it becomes necessary to utilize Architectural Services, the office requiring said professional services shall choose a minimum of three well qualified architectural firms for the project envisioned, of which all are satisfactory to the Division Engineer/Bureau Chief. Firms shall be chosen that are qualified, have adequate personnel to assign to the job, and have a proven successful track record on similar projects.

The Director will choose the consultant. If none on the list submitted are satisfactory to the Director, all will be rejected and a new list will be submitted by the requesting office.

The Department will no longer accept "lump sum" bids for architectural work. Bid documents must specify bid amounts for site preparation and major items of work (HVAC, plumbing, roof, electrical, etc.) for each building when there is more than one building.

Any exceptions for architectural projects currently in the "pipe line" must be approved by the Highway Director individually.

RECOMMENDED FOR APPROVAL: _____D.W. Vaughn_____
ADMINISTRATIVE ENGINEER

APPROVAL: _____Perry A. Hand_____ _____3/15/91_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: ROADWAY LIGHTING

The State of Alabama Highway Department will participate in providing lighting on State Highways within an urban area under the following conditions:

1. If lighting is warranted and the city involved agrees to provide 50% of the required funds to install the system, provide maintenance for the system and pay for the energy, the State will design the system and provide 50% of the installation cost contingent upon the availability of State funds and the Highway Director's approval.

2. If lighting is not warranted, the State will install the system if the city involved agrees to provide 100% of the funds required to design, install, maintain and pay for the energy, contingent upon the Highway Director's approval.

APPROVAL: _____Tom Espy Jr._____
CHIEF ENGINEER

APPROVAL: _____Perry A. Hand_____ ___4/12/91___
HIGHWAY DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: SAFETY BELTS

The Code of Alabama, Title 32-5-222, requires that front seat occupants of motor vehicles wear safety belts.

Pursuant to the Code, safety belts will be worn by all Alabama Department of Transportation employees at all times while operating or riding in a State-owned or leased motor vehicle, front or back seat, where safety belts are installed.

The use of safety belts also applies to those operating State-owned or leased equipment such as tractors, mowers, forklifts, utility carts, and heavy equipment.

Drivers/Operators are responsible for informing all passengers of the requirement for wearing safety belts while the vehicle is in operation.

Supervisors will ensure that all employees are made aware of these guidelines and will set the example for their employees by adhering to and enforcing them.

RECOMMENDED FOR APPROVAL: _____D.W. Vaughn_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Ray D. Bass_____
CHIEF ENGINEER

APPROVAL: _____Jimmy Butts_____ ____4/14/95___
TRANSPORTATION DIRECTOR DATE

ALABAMA
DEPARTMENT OF TRANSPORTATION
GUIDELINES FOR OPERATION

SUBJECT: SALE OR LEASE OF RIGHT-OF-WAY OR OTHER PROPERTY OF THE ALABAMA DEPARTMENT OF TRANSPORTATION

Prior to initiating the lease, sale or transfer of any excess right-of-way or other property of the Alabama Department of Transportation (Department), the Right-of-Way Bureau shall obtain the recommendation of the respective Region Engineer, the Maintenance Bureau Chief, the Design Bureau Chief, and the Chief Engineer's office. If Federal funds were used in either the right-of-way or physical construction costs of a project, then approval should also be obtained from the Federal Highway Administration (FHWA) as required by the Stewardship Agreement between the Department and FHWA.

RECOMMENDED FOR APPROVAL: Steven E. Walker
BUREAU CHIEF

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

6/15/15
DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: THIRD PARTY AGREEMENTS BETWEEN THE DEPARTMENT, OTHER LOCAL GOVERNMENT AGENCIES AND CONSULTANTS

All third party agreements between the Department, other local governments and consultants shall be forwarded to the Office of External Audits for a pre-award audit prior to the execution of such contracts. The Office of External Audits will then audit the Consultant and issue a report to the Department's contracting office approving the overhead and labor additive rate and other necessary costs to be used in the agreement.

RECOMMENDED FOR APPROVAL: _____Lamar McDavid_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____D.W. Vaughn_____
ADMINISTRATIVE ENGINEER

APPROVAL: _____Perry A.Hand_____ _____9/11/92_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA
DEPARTMENT OF TRANSPORTATION
GUIDELINES FOR OPERATION

SUBJECT: PROCEDURES FOR PROCESSING STATE AND INDUSTRIAL ACCESS FUNDED COUNTY AND CITY PROJECTS

No work can be performed and no contracts can be let prior to having a fully executed project agreement, submittal of project plans to Region and notification from the Region that advertisement for bids can be made, or, in the case of force account projects, work can begin.

A project agreement will be prepared and furnished to the County/City upon receipt of grant award letter signed by the Director or Governor. The Region will prepare and submit a F-7A Budget Allotment request upon receipt of a project funding agreement at the time it is submitted to the County/City for their execution.

The County/City will submit plans prepared and signed by a registered professional engineer showing work to be performed. Plans must match the project agreement description. It is not necessary for the Region to perform an in-depth review of plans. The County/City will submit a certification signed by a Registered Professional Engineer stating that the plans have been prepared so that all items included in the plans meet ALDOT specifications. The County/City will include a letter certifying that the County/City owns all right-of-way on which the project is to be constructed.

Upon receipt of the executed agreement, the executed F-7A, final plans from the County/City, and right-of-way certification, the Region may notify the County/City to proceed with advertising the project for letting or proceed with work in the case of a force account project.

In the case where a County/City is using an inplace annual bid, the County/City will furnish the Region a copy of their bid and this bid price will be used for reimbursement.

Where the County/City is letting a contract locally, the County/City will furnish to the Region the three lowest bids with their recommendation for award. The Region will review the bids, and, if in order, advise the County/City to proceed with award of the contract to the lowest responsible bidder. The County's/City's estimate for reimbursement will be based on the bid prices concurred in by the State and supported with documentation that the contractor has been paid for work performed (copy of cancelled check).

A certification will be submitted with County/City final estimate stating that the project was constructed in accordance with final plans submitted to the State and with the specifications, supplemental specifications, and special provisions which were shown on the plans or with the State's latest specifications which were applicable at the time of plan approval.

The County/City will notify the Region when the project is complete and the Region will perform a final ride-through to determine whether the project was completed in substantial compliance with original final plans. Final acceptance will be made by the Region with a copy of the letter furnished to the Bureau of Local Transportation.

All required test reports, weight tickets, material receipts and other project documentation required by the specifications, applicable supplemental specifications, and special provisions will be retained by the County/City for a period of three (3) years following receipt of final payment and made available for audit by the State upon request. If an audit is performed and proper documentation is not available to verify quantities and compliance with specifications, the County/City will refund the project cost to the State or do whatever is necessary to correct the project at their cost.

All County/City Industrial Access or State funded projects let to contract by the State will follow normal project procedures and comply with all current plan processing requirements.

RECOMMENDED FOR APPROVAL: _____

BUREAU CHIEF/REGION ENGINEER

APPROVAL: _____

CHIEF ENGINEER

APPROVAL: _____ NOVEMBER 1, 2017

TRANSPORTATION DIRECTOR **DATE**

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: ADMINISTRATION OF SURFACE TRANSPORTATION PROGRAM (STP) PROJECTS IN URBANIZED AREAS OVER 50,000 POPULATION

The ISTEA of 1991 allows considerable more flexibility in the operation of the Alabama Department of Transportation program than in previous Acts; however, the Federal Highway Administration will always look to the Alabama Department of Transportation as the agency responsible for administering the Federal Aid Program in Alabama even when local cities and counties are involved in the work.

The following administrative procedures apply as related to this program:

1. All contracts (except transportation enhancement projects) will be "let to contract" by the Alabama Department of Transportation through the Office Engineer Bureau.

2. The Alabama Department of Transportation will hire Engineering and Design Professional Services Consultants through its consultant selection procedures or cities and counties may request written permission from the Alabama Department of Transportation Director to hire a consultant in accordance with the Alabama Department of Transportation's consultant selection procedures.

3. The Alabama Department of Transportation will be responsible for all acquisition of right-of-way.

4. The Alabama Department of Transportation will be responsible for handling the construction supervision on projects; however, they may hire a consultant to assist with construction supervision.

RECOMMENDED FOR APPROVAL: _____J.F. Carraway_____
ASSISTANT CHIEF ENGINEER

APPROVAL: _____Ray D. Bass_____
CHIEF ENGINEER

APPROVAL: _____Jimmy Butts_____ _____2/27/96_____
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: ENGINEERING EDUCATION AND TRAINING PROGRAM PER DIEM, TRANSPORTATION AND MOVING EXPENSES

PER DIEM

Instructions contained in the State of Alabama Highway Department Standard Policies, Procedures and Instructions are to be followed in considering payments for travel for employees temporarily assigned under the EETP.

Overnight/continuous travel per diem is authorized for a participant who elects to reside away from their home base assignment; overnight per diem is not authorized for normal off duty days such as Saturdays, Sundays, holidays, or at other times when the participant is not actually working;

Daily/trip travel per diem is authorized for a participant who elects to commute daily from their home base during the away from base assignment.

TRANSPORTATION

An allowance will be paid for personal vehicle usage for the recorded distance traveled between home base and the away from base assignment: (1) for the first reporting trip to the away from home base assignment; (2) for each assigned return to base and return trip to the away from base assignment approximately every eight weeks; and (3) for the return trip at the completion of the away from base assignment.

MOVING EXPENSE

Reimbursement for moving expenses whether by U-Haul or private carrier is not authorized for temporary moves such as is the case for temporary assignments under the EETP.

APPROVAL: D.W. Vaughn
ADMINISTRATIVE ENGINEER

APPROVAL: M. Roberts 8/23/93
HIGHWAY DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: METRICS AND METRIC CONVERSION GUIDELINE #1

The Metric Committee has adopted and approved the following document as containing the appropriate and official metric practices:

> "American Society of Testing Materials E380-93, Standard Practice for Use of the International System of Units (SI) the Modernized Metric System" (or current release).

The provisions of ASTM E380 are to be followed as closely as practical and exceptions made only as approved by the Metric Committee.

RECOMMENDED FOR APPROVAL: _____R. Estes_____
METRIC COORDINATOR

APPROVAL: _____W.E. Page_____
OPERATIONS ENGINEER

APPROVAL: _____M. Roberts_____ _____12/13/93____
TRANSPORTATION DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: METRICS AND METRIC CONVERSION GUIDELINE #2

The Metric Committee has adopted and approved the following documents as containing appropriate informational data and commentaries for use in determining metric values and units:

"American Association of State Highway and Transportation Officials - Interim Selected Metric Values for Geometric Design" (or current release),

"Metric Guide for Federal Construction" (or current release),

"American Association of State Highway and Transportation Officials - Guide to Metric Conversion" (or current release).

Other documents and publications may also contain information which is useful in determining values and units. Where practical, the above documents should be used.

Reference should always be made to ASTM E380 (see Guidelines For Operation - Metrics and Metric Conversion Guideline #1).

RECOMMENDED FOR APPROVAL: R.Estes
METRIC COORDINATOR

APPROVAL: W.E. Page
OPERATIONS ENGINEER

APPROVAL: M. Roberts 12/13/93
TRANSPORTATION DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: METRICS AND METRIC CONVERSION GUIDELINE #3

The Metric Committee has adopted and approved the following standards and exceptions for metric surveying:

STATIONING: Stationing shall be increments of 100 meters. Even stations shall be noted by location in hundreds of meters followed by tens and units separated by a plus sign (+) with no spaces. Stations shall be written in the general format of 1+00; 12+00; etc. Stations may be accurate to three decimal places and written 1+23.456.

ACCURACY: Distance and dimensional measurements will usually require accuracy no greater than one millimeter (or 0.001 meter). Usual accuracy will require decimal notation of meters to three decimal places and millimeters to whole units.

CROSS-SECTION INTERVAL: Cross-sections shall be at 20 meter intervals. Appropriate stations at break lines, changes in section, and as required, are acceptable. This interval will be used for plan cross-sections, plan details, and for calculating pay quantities.

ANGULAR MEASUREMENTS: Angular measurement shall be in units of degrees, minutes, and seconds. A full circle will be 360 degrees.

CIRCULAR CURVE DATA: Circular curves shall be defined by length of radius. All other circular curve data will continue to be shown as usual except that it shall be metric.

SCALES: The preferred metric scales are 1:1 (full size), 1:5, 1:10, 1:20, 1:25, 1:40, 1:50, 1:100, 1:200, 1:250, 1:400, 1:500, and 1:1000. "Inch = foot" scales will generally be replaced as follows:

CURRENT SCALE	PREFERRED METRIC
1 inch = 50 feet	1:500
1 inch = 100 feet	1:1000

For plan/profile plotting, the standard scales shall be 1:1000 for the horizontal and 1:100 for the vertical.

Other scale conversions are discussed in "Metric Guide for Federal Construction," pages 23-25.

STATIONING NOTATIONS: Stationing notation shall be in hundreds of meters. Example: the survey station at 123.456 meters from the beginning shall be written and noted as 1+23.456. The stationing notation on plans shall be shown only at one hundred meter intervals and for "full" stations as 1+00, 2+00, etc.

"Tic marks" shall be shown at 20 meter intervals.

UNITS: Distance measurements shall be in meters. Usually, this measurement will be to three decimals accuracy where appropriate. Dimensions commonly less than one meter may be measured in whole millimeters (no decimals).

Dimensions in meters shall be designated as "meters" or "m." Dimensions in millimeters shall be designated as "millimeters" or "mm."

Plan sheets shall be clearly noted if undesignated values or dimensions are used.

All provisions of ASTM E380 shall be observed unless specifically excepted.

RECOMMENDED FOR APPROVAL: R.Estes
METRIC COORDINATOR

APPROVAL: W.E.Page
OPERATIONS ENGINEER

APPROVAL: M. Roberts 12/13/93
TRANSPORTATION DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: METRICS AND METRIC CONVERSION GUIDELINE #4

The Metric Committee has adopted and approved the following document as containing appropriate informational data and commentaries for use in determining metric values and units:

> "American Society of Testing Materials E621, Standard Practice for the Use of Metric (SI) Units in Building Design and Construction (Committee E-6 Supplement to E380)" (or current release).

Reference should always be made to ASTM E380 (see Guidelines for Operation - Metrics and Metric Conversion Guideline #1).

RECOMMENDED FOR APPROVAL: _____R.Estes_____
METRIC COORDINATOR

APPROVAL: _____W.E.Page_____
OPERATIONS ENGINEER

APPROVAL: _____M.Roberts_____ _____1/31/94____
TRANSPORTATION DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: PROCEDURE FOR DISTRIBUTION OF FEDERAL AID FUNDS TO COUNTIES

Federal funds for each Alabama county will be allocated by the Alabama Department of Transportation on October 1 of each year. Each county will have until May 1 of the following fiscal year (a total of 19 months) to deliver completed plan assemblies to the Bureau of County Transportation to utilize at least 90 percent of the funds allocated.
Any county not meeting the May 1 deadline will forfeit that allocation, but will continue to be eligible for the allocation of federal funding made on October 1 of each year.

Allocation and expenditure of federal funding will follow the annual schedule set out below:

October 1 Federal funds are allocated to each county.

November 1 Department of Transportation notifies each county engineer and county commission chairman of the total federal funds available for the county, with the time frame for spending each portion.

May 1 A county forfeits its funding for the previous fiscal year unless it has delivered a completed plan assembly to the Bureau of County Transportation to expend at least 90 percent of its allocation of these funds or received written approval from the Transportation Director based on legitimate reasons for not having completed plans. This forfeited federal funding is returned to Reallocation Pool to be used at the Director’s discretion on other County projects.

June 1 Department of Transportation notifies the Association of County Commissions of Alabama the balance of funding remaining in the account for each county and the list of the counties which forfeited their funding on the May 1 deadline.

A county may "carry over" its federal funds under the following guidelines:

Provide a completed plan assembly, along with a letter requesting a "carry over" of federal funds by May 1 to the Bureau of County Transportation for a project that will require a level of federal funding that exceeds the balance available in the county's account. Once a completed plan assembly is received, the request to carry over the year's allocation will be forwarded to the Director of the Department of Transportation for written approval. This approval may be for a project that requires funding from the allocations in two or more years. Counties will

not be allowed to carry over funds without a completed plan assembly or without written approval by the Transportation Director based on legitimate reasons for not having completed plans.

A completed plan assembly is defined as a complete set of plans ready for review and forwarding to the Office Engineer for letting to contract along with all supporting documentation required by the "Procedural Guidelines for County Projects" as published by the Bureau of County Transportation.

RECOMMENDED FOR APPROVAL: _____JOHN F. COURSON_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____G. M. ROBERTS_____ DATE: __3/30/1999_____
TRANSPORTATION DIRECTOR

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: APPROPRIATE USE OF REST AREA AND WELCOME CENTER FACILITIES

The sole purpose of Rest Area and Welcome Center facilities is to provide safety to the traveling motorist. Safety is provided by allowing intermittent rest stops of short duration, for use of restroom facilities, picnic and walking areas and concessions provided by Industries for the Blind.

Use by governmental agencies for the promotion of motorist safety may be authorized with prior approval of the Transportation Director. No use by private industry, individuals, civic groups, clubs, non-profit organizations, etc., will be allowed for conducting commercial or non-profit activities of any nature.

RECOMMENDED FOR APPROVAL: _____Mitchell Kilpatrick_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Ray D. Bass_____
CHIEF ENGINEER

APPROVAL: _____Jimmy Butts_____ _____1/25/96_____
TRANSPORTATION DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: REQUEST FOR LEAVE IN REGARD TO COURT PROCEEDINGS

Attendance in court by employees of the Alabama Department of Transportation as witnesses in their official capacities (job related) shall be considered as a part of their assigned duties and does not require any type leave to be charged.

Employees who are subpoenaed as witnesses in their individual capacities (not job related) or otherwise are required to appear in court in non-official capacities, must arrange for time off from work through approved annual leave or approved leave without pay.

RECOMMENDED FOR APPROVAL: _____Jack F. Norton_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Ray D. Bass_____
CHIEF ENGINEER

APPROVAL: _____Jimmy Butts_____ _____10/13/95____
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: GUIDELINES FOR CLOSURE OF RAIL-HIGHWAY GRADE CROSSINGS

This Guideline establishes the Department of Transportation's process and procedures to use for closing a rail-highway grade crossing at any public street or road in the State of Alabama. When a closure request is received by the Multimodal Transportation Engineer, the Region/Division Railroad Coordinator is notified by letter to proceed with the closure process and procedures. Section 37-2-84, Code of Alabama 1975, amended and signed by the Governor of Alabama on April 22, 1994, (Act No. 94582) provides the legal basis for this action.

I. The Department of Transportation is given authority and power to abandon and discontinue any portion of a state highway, or street on a **STATE HIGHWAY ROUTE** with the approval of the city council or governing body of any municipality or county, crossing the tracks or right-of-way of any railroad or street railway within the state, and to close the grade crossing, whenever in the judgment of the Department the grade crossing has ceased to be necessary for the public use as a part of the state highway, because of the relocation of the highway, or the construction of an underpass or overpass, or other provision made for the elimination of the grade crossing. Whenever the Department orders the abandonment of a portion of the highway or street and the closing of a grade crossing, it shall enter its order providing therefore in the Department minutes. Notice in writing of the abandonment and discontinuance of the portion of the highway or street and the closing of the grade crossing shall be given by the Department by posting a notice on each side of the railroad or street railway at the grade crossing for a period of 30 days. Thereafter, the railroad shall not be required to maintain the grade crossing for use as a public highway or street.

II. Notwithstanding any other provision of the law, the Department of Transportation may abandon, close, and discontinue a portion of a **MUNICIPAL or COUNTY HIGHWAY, STREET, or RIGHT-OF-WAY** crossing the tracks or right-of-way of any railroad within the state whenever in the judgment of the Department the grade crossing is dangerous or redundant, the enhancement of public safety resulting from the closing outweighs any inconvenience caused by rerouting the vehicular traffic, or materially impair the provision of police, fire, or ambulance service. The Department may also order a relocation of the crossing or the building of an alternate crossing at another location. If the Department orders the relocation of the crossing or the construction of an alternate crossing, the crossing shall be constructed at no cost to the municipality or county unless the

municipality or county enters into an agreement to share in the cost of the relocation of the crossing or the construction of an alternate crossing.

A. Prior to issuing the order to close a crossing, the appropriate Region/Division Railroad Coordinator of the Department of Transportation shall:

1. Give written notice of intention to close the crossing of the street or roadway to the municipality or county.

2. Publish legal notice of intention to close the crossing in a newspaper of general circulation in the county where the crossing is located once a week for three consecutive weeks prior to issue of the order of closure. The notice shall state the procedure to follow to request a hearing prior to the closure. Any citizen who uses the crossing or who owns property abutting the crossing or the county or municipality may give a notice in writing to the Department of Transportation requesting a public hearing prior to the closing.

3. Upon request, conduct a public hearing in the municipality or county in which the crossing is located by giving at least ten (10) days notice to the person or persons requesting the hearing and to the municipality or county in which the crossing is located.

   a. At the public hearing, the Region/Division Railroad Coordinator and a Department representative from the Rail-Highway Safety Section of the Transportation Planning and Modal Programs Bureau, shall invite all persons interested and shall receive any written statements from the interested parties.

   b. The Region/Division Railroad Coordinator conducting the hearing shall file a written report (including minutes of the council meeting, signed resolution and a copy of the notice from the local newspaper) with the Department's Multimodal Transportation Engineer together with all written statements submitted by persons attending the hearing and shall make a written recommendation concerning the proposed closing. The recommendation shall be reviewed by the Multimodal Transportation Engineer and forwarded to the Transportation Director.

   c. After consideration of the report including the recommendation and the statements submitted therewith, the Transportation Director shall enter an order closing the crossing or require the crossing to remain open or require the crossing to be relocated as determined by the Director.

B. The order of the Transportation Director shall be final.

C. After the issuance of the order by the Transportation Director, it is the responsibility of the railroad or railroads involved to physically limit crossing of the tracks and it shall be the responsibility of the municipality or county where the crossing is located to install any signs or barricades which might be appropriate in accordance with the Manual of Uniform Traffic Control Devices. The cost for any signs or barricades shall be shared equally by the Department of Transportation and the town, city or county where the crossing is located.

III. Whenever a railroad crossing or any highway, street, or right-of-way crossing the tracks or right-of-way of any railroad is closed, abandoned, or discontinued pursuant to this section, that action shall not affect any right-of-way owned by the railroad, structures, equipment, and facilities of any utility as defined in Title 37 Code of Alabama 1975, which cross the tracks or right-of-way of the railroad at the crossing or along, over, or through the highway, street, or right-of-way abandoned.

IV. The provisions stated in this guideline shall be the exclusive method to follow for closing railroad grade crossings located on any public street, road, or highway in this state, as per subsections (a) through (d) of Section 37-2-84, Code of Alabama 1975.

V. See Attached Closure Incentive Payment Agreement

RECOMMENDED FOR APPROVAL: Robert J. Gilla
MULTI MODAL TRANSPORTATION ENGINEER

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

11/18/13
DATE

Rev. 11/2013

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: DETERMINING FINAL PROJECT COSTS WHEN THERE IS LITIGATION AGAINST THE DEPARTMENT

The purpose of this guideline is to provide guidance in determining the final project amount agreed to pay a contactor as final settlement of litigation against the Department when the amount of settlement is contingent upon calculation of the final contractor's estimate. The following shall apply:

> Any amount given as the final payment on a contract will be processed through the Bureau of Office Engineer, for review and approval, prior to the Department utilizing the amount in litigation settlement.

RECOMMENDED FOR APPROVAL: Dykes T. Rushng
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: Newal S, Cauthen
CHIEF ENGINEER

APPROVAL: M. Roberts
TRANSPORTATION DIRECTOR

DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: SAFETY DATA - PROVIDING FRICTION DATA TO REGIONS/AREAS

A request for friction data must state that it is being made "**for the purpose of developing a highway safety construction improvement project, which may be implemented utilizing federal-aid highway funds.**" All correspondence regarding the request and use of friction data should always reference the above-language.

Any project developed that uses the friction data must state it is a highway safety construction improvement project, regardless of the source of funding. Friction data is protected from disclosure and shall not be shared with any third party without permission and approval by the Legal Bureau.

In order to properly protect safety program information, the following process shall be used when a Region/Area needs friction data for a particular roadway.

1. The Region/Area will send a written request for friction data to the Design Bureau – Traffic Engineering Division – Safety Planning Section.

2. The Safety Planning Section will forward the request to the Materials and Tests Bureau.

3. The Materials and Tests Bureau will gather friction data for the Safety Planning Section.

4. The Safety Planning Section will forward the friction data to the Region/Area that made the request.

The Safety Planning Section is the custodian of friction data for the Department. Once the Region/Area has used the friction data, the data shall be returned to the Safety Planning Section.

RECOMMENDED FOR APPROVAL: _____
STATE DESIGN ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 3/1/2016
TRANSPORTATION DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: FAMILY DISCLOSURE GUIDELINE

It is the responsibility of every employee of the Department of Transportation to disclose the employment of any family member (spouse and dependants) with any public or private venture doing business either directly or indirectly with the Alabama Department of Transportation.

Such disclosure shall be made to the Transportation Director in writing immediately upon discovery of said employment.

RECOMMENDED FOR APPROVAL: _____
Deputy Director, Operations

APPROVAL: _____ Date: Feb 6, 2003
Transportation Director

Transportation Director
Alabama Department of Transportation
Montgomery, AL 36130

FAMILY DISCLOSURE GUIDELINE STATEMENT

My _____, _____,
relation relative's name

is employed with _____,
company name

and that company does business with the Alabama Department of Transportation.

_____
Sign Name

_____
Print Name

ALABAMA DEPARTMENT OF TRANSPORTATION
1409 Coliseum Boulevard, Montgomery, Alabama 36130-3050

Bob Riley
Governor

Joe McInnes
Transportation Director

State of Alabama

Department of Transportation

Guideline for Operations

SUBJECT: Rail/Highway Safety Program

This guideline has been developed to provide information about the procedures used to develop and implement projects using Federal Safety Funds (23USC130) for improvements at rail/highway grade crossings.

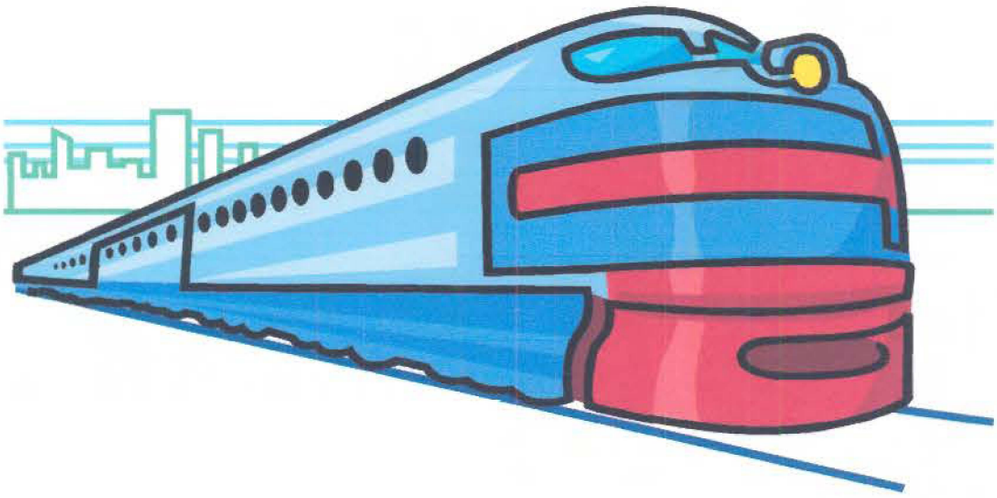
Recommended for Approval: _____
Multimodal Transportation Engineer

Approval: _____
Deputy Director, Operations

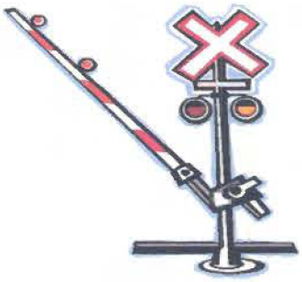
Approval: _____
Transportation Director

Alabama Department of Transportation

Rail/Highway Safety Program



Multimodal Transportation Bureau
Rail/Highway Section



ALABAMA RAIL/HIGHWAY SAFETY PROGRAM

❖ Background

The rail/highway safety program is one of the Alabama Department of Transportation's (ALDOT) key elements in the statewide effort to reduce crashes, injuries and deaths. This program was developed to minimize the hazards at rail-highway grade crossings. Alabama has approximately 3300 public road grade crossings but only 35% of these have active warning devices (signals, bells, gates, etc.) The remainder of the crossings have passive protection (cross bucks, signs, markings, etc). During the past ten years, there have been 126 deaths, 618 injuries, and 1211 crashes at rail/highway grade crossings.

Efforts are underway to improve these statistics. An Interdepartmental Agreement dated September 21, 1999 jointly signed by the Department of Public Safety, the Department of Economic and Community Affairs and the Alabama Department of Transportation is a coordinated effort to reduce crashes and improve safety on the State's highways. (See Attachment No. 1) The goal is a 20% reduction in crashes, injuries, and fatalities over a 10 year period. ALDOT has made a commitment to significantly increase funding to reduce hazards at highway grade crossings in Alabama by increasing funding for active devices along a number of rail corridors throughout the State.

The Rail/Highway Section of the Multimodal Bureau has the oversite responsibility for all aspects of the rail/highway safety program.

❖ Funding

Each year Alabama receives $3.2 million of Federal Safety Funds (23USC130) earmarked for rail/highway improvements. These funds are used to improve grade crossings on public highways. Crossings are selected for improvement according to a ranking developed using the US DOT Accident Prediction Formula Index.

Another source of funding for rail/highway grade crossing safety improvements is Optional Safety Funds. Alabama receives $7.7 million of Federal Safety Funds that can be used for either the hazard elimination safety program or the rail/highway safety program. ALDOT has agreed to use Optional Safety Funds to improve a number of corridors on the CSX Transportation, Inc. and Norfolk Southern Railroad networks throughout the State.

The Agreement with Norfolk Southern Corporation provides for ALDOT to pay 100% of the cost using Federal Safety Funds. It is expected that approximately $16 million will be expended over a three-four year period to provide signalization at approximately 120-140 rail/highway crossings. Section 130 (Railroad Safety Funds) or Optional Safety Funds will be used for these improvements.

The Agreement with CSX Transportation proposes to use $12 million of Section 130 Funds or Optional Safety Funds to signalize or construct grade separations. ALDOT will provide 100% of the cost for these improvements.

The approach signs and markings will be placed by State forces using Section 130 or Optional Safety Funds.

❖ Program Implementation

The Rail/Highway Section in the Multimodal Bureau has four major areas of responsibility:

1) Rail/Highway Safety
2) Contract and Maintenance Project Review including Railroad Agreement Preparation and Processing
3) Providing data and input for the National Highway/Railroad Crossing Inventory
4) Maintaining and updating the State Rail Plan and Rail Directory.

A brief description of the specific program areas follows:

- Rail/Highway Safety

The Rail/Highway Safety Program is responsible for planning, developing and implementing rail/highway safety projects financed with Section 23USC130 or Optional Safety Funds. This process consists of the following activities: (1) identifying candidate rail/highway crossings; (2) conducting diagnostic reviews of rail/highway crossings; (3) preparation of program documents for crossings to be upgraded; (4) reviewing construction plans; (5) preparing and processing agreements and resolutions and (6) processing the final plans for authorization.

Each year the Department uses the Section 130 Funds to provide signalization at between 28-32 crossings across the State. A ranking is given to each crossing in the State using the US DOT Accident Prediction Formula Index. This allows a prioritized list of projects to be developed.

The US DOT Accident Prediction Formula Index selects crossings for improvements based on accident history for the past five years along with other factors from the National Rail/Highway Crossing Inventory. These factors include the number of vehicles and trains per day, number of highway lanes, type highway surface, maximum train speed and the number of main tracks, etc. After the crossings are selected from the Index, a diagnostic review is held at the site. A diagnostic review form is prepared by the Division and forwarded to the Multimodal Bureau for review. Documents are sent to FHWA for review and approval. After approval by FHWA, plans and maintenance agreements are prepared by the Divisions and forwarded to the Multimodal Bureau. Documents are then forwarded to the railroad company for review and signatures. After the railroad prepares the detailed plans and executes the Agreements and necessary signatures are obtained, the

assembly is forwarded to Office Engineer for authorization. The railroad company is notified to begin work after the authorization process is completed.

- Contract and Maintenance Review

  This section is responsible for the review of construction plans for all contract projects involving railroads. Personnel attend the Plan-In-Hand and PS & E Inspections for the contract projects and provide input for plan preparation and process agreements with the railroad for all contract and maintenance projects that have railroad involvement. Personnel are responsible for conducting on-site reviews of all construction projects with railroad involvement to assure that no utility or right-of-way conflicts exist on these projects. Personnel attend the monthly schedule meeting to give progress reports to the Chief Engineer, Bureau Chiefs, and Division Engineers on the status of the Railroad Agreement and Plans. Personnel in this section provide railroad liability data to the Office Engineer for Railroad Protective Liability Insurance compliance.

- National Highway/Railroad Crossing Inventory

  This inventory contains a record of each highway railroad crossing in the State. This includes all at grade public and private crossings, grade separations, and pedestrian crossings. Information collected includes train traffic data and operating characteristics, motor vehicle data and operating characteristics, physical characteristics of the roadway and railroad, past crash history, and any special use vehicles using the crossing. The data is supported by a current photograph of the crossings in the inventory.

  The Rail Planning Section is responsible for collecting, validating, updating and inputting data for the Inventory in Alabama. The validated data is furnished to the Federal Railroad Administration (FRA) for the National file.

  The FRA recently changed the reporting format and has requested that each State update their Inventory. The Rail Planning Section personnel have been actively involved in the updating of this Inventory. Site reviews have been made at approximately 1020 public road crossings or 31% of the statewide total. At the current rate of progress, it is estimated that it will take at least another year to complete this Inventory update.

- State Rail Plan and Directory

  The State Rail Plan was updated in 2001. This was the first update of the Rail Plan since 1992. A Rail Directory was developed in 2001. This was the first Rail Directory developed for the State.

  The Rail Plan contains an inventory of railroads operating in Alabama, rail line density and usage, abandonments, intermodal facilities, and a summary of passenger rail service in the State.

The Directory contains a summary of pertinent information about each railroad operating in Alabama. This summary provides a history of each railroad, track mileage, stations served, major commodities transported, tonnage transported, connecting railroads, etc.

Periodic updates of these documents will be implemented as needed.

- Grade Crossing Closures

Section 37-2-84, Code of Alabama 1975, (Act No. 94582) was amended and signed by the Governor of Alabama on April 22, 1994. This law gives ALDOT the authority to close a crossing on a municipal or county highway, street or right-of-way crossing the tracks or right-of-way of any railroad within the state whenever in the judgment of the Department the grade crossing is dangerous or redundant or the enhancement of public safety resulting from the closing outweighs any inconvenience caused by rerouting the vehicular traffic. The Multimodal Bureau is responsible for implementation of the procedures stated in the rail/highway closure law.

ALDOT considers grade crossing closures an alternative to signalization or other type improvements. (See Attachment No. 2) Closure proposals require coordination with local governments, railroad companies, and ALDOT to develop alternative plans to enhance safety at these locations.

- High Speed Rail Corridors

ALDOT is a member of the Southern Rapid Rail Transit Commission (SRRTC) which seeks to develop and implement high speed rail facilities in Alabama, Mississippi and Louisiana. The east/west corridor extends from Pensacola, Florida through New Orleans, Louisiana to Houston, Texas. A north/south corridor links New Orleans to Atlanta, Georgia via Hattiesburg, Mississippi, and Tuscaloosa and Birmingham, Alabama. Development of these corridors will be in phases. The initial focus will be to improve the existing infrastructure to accommodate train speeds in the range from 80 to 125 miles per hour. Emphasis during the first phase is being placed on grade crossing improvements, closures, track conditions and geometrics, signalization and track capacity.

Alabama has received funding during the past four years to enhance safety at high speed rail/highway grade crossings in these corridors. These funds have been used to install signals, bells and gates and improve crossing surfaces.

ALDOT contributes financially to the operation of the SRRTC. Governor Bob Riley and Transportation Director Joe McInnes are members of the SRRTC. Meetings are scheduled bi-monthly to conduct business for the SRRTC membership.

❖ Contacts

The Multimodal Bureau is responsible for the management and oversite of the rail/highway safety program statewide. The following is a list of primary contact personnel involving railroad-related activities:

FUNCTION	CONTACT PERSON	TEL. NO.
Rail/Highway Safety Program Coordinator	Wesley E. Elrod	(334) 353-6407
Rail/Highway Safety Projects	Clarence Hodges	(334) 353-6429
	Donald Lovelace	(334) 353-6428
Rail/Highway & SRRTC Contact Project	Craig Thomas	(334) 353-6449
Agreements	David Nichols	(334) 353-6430
National Highway/Rail Crossing Inventory	Jenny Williams	(334) 353-6427

All correspondence concerning rail transportation should be addressed as follows:

Robert J. Jilla
Multimodal Transportation Engineer
Alabama Department of Transportation
1100 John Overton Drive
Montgomery, AL 36110
Telephone (334) 353-6401
Fax (334) 353-6451

Each ALDOT Division Office has a person designated to manage the rail safety program within a specific geographic area. If you need information, have questions or want to make comments about this program, we welcome your input.

The following is a list of Division Railroad Coordinators:

DIVISION RAILROAD COORDINATORS

DIVISION	COORDINATOR	ATTNet Tel. No.	Regular Tel. No.
First	Lynn Wood	8-524-1231	(256) 582-1226
Second	Andy Laster	8-455-1483	(256) 389-1483
Third	Renya Hooks	8-526-5883	(205) 581-5883
Fourth	Ken Cush	8-556-2495	(256) 234-8495
	Wesley Ballard	8-556-2455	(205) 234-8455
Fifth	Rozalyn Clifton	8-627-4272	(205) 554-3244
Sixth	Edward Kelly	8-241-8575	(334) 241-8574
Seventh	Ronnie Baldwin	8-278-2424	(334) 670-2424
Eighth	Jeff Powell	8-275-7212	(251) 275-7212
Ninth	Dewayne Hood	8-665-3253	(251) 470-8253

❖ Standard Operating Procedures/Guidelines

Standard operating procedures have been developed for rail-highway safety projects. (Attachment No. 3). Any specific questions or details not addressed in these procedures should be forwarded to the Multimodal Bureau. As conditions warrant, updates of the procedures or details will be made.

INTERDEPARTMENTAL AGREEMENT
BETWEEN
THE ALABAMA DEPARTMENT OF TRANSPORTATION
THE ALABAMA DEPARTMENT OF PUBLIC SAFETY
AND
THE ALABAMA DEPARTMENT OF ECONOMIC AND COMMUNITY AFFAIRS

This agreement is made and entered into by and between the Alabama Department of Transportation, hereinafter referred to as ALDOT, the Alabama Department of Public Safety, hereinafter referred to as DPS, and the Alabama Department of Economic and Community Affairs, hereinafter referred to as ADECA, in cooperation with the U.S. Department of Transportation, Federal Highway Administration, hereinafter referred to as FHWA; and

WHEREAS, the ALDOT, DPS, and ADECA will share safety ideas and information between agencies; and

WHEREAS, the ALDOT, DPS, and ADECA will have equal input on funding mechanisms and will work jointly so that highway safety efforts and programs are not duplicated; and

WHEREAS, the ALDOT, DPS, and ADECA will work to reduce highway accidents and fatalities by 20% in coordination with the 10-year goal of FHWA; and

WHEREAS, the ALDOT, DPS, and ADECA will coordinate all Highway Safety Projects through the Governor's Office.

IN WITNESS WHEREOF, the aforementioned parties have caused this agreement to be executed by their officials who are thereunto duly authorized.

G. M. Roberts, Transportation Director
Alabama Department of Transportation

Colonel Michael Sullivan, Acting Director
Department of Public Safety

Dewayne Freeman, Director
Alabama Department of Economic and Community Affairs

DONE ON THIS 21 DAY OF September, 1999.

ALABAMA DEPARTMENT OF TRANSPORTATION
BUREAU OF MULTIMODAL TRANSPORTATION

RAIL/HIGHWAY SAFETY PROGRAM

GRADE CROSSING CLOSURE PROCEDURES

Section 37-2-84, Code of Alabama 1975, (Act. No. 94582) was amended and signed by the Governor of Alabama on April 22, 1994, giving the Alabama Department of Transportation (ALDOT) the authority to close a crossing on a MUNICIPAL or COUNTY HIGHWAY, STREET or RIGHT-OF-WAY crossing the tracks or right-of-way of any railroad within the state whenever in the judgment of the Department the grade crossing is dangerous or redundant or the enhancement of public safety resulting from the closing outweighs any inconvenience caused by rerouting the vehicular traffic. (For amended law, see Attachment No. 1)

Closure Procedures

- *When a closure request is received by the Multimodal Transportation Engineer, the Division Railroad Coordinator is notified by letter to proceed with the closure pursuit according to the ALDOT's Guidelines for Operation 1-35, 1-35.1 and 1-35.2, Revised 12/94. (For Guidelines, see Attachment No. 2)*

- *The Division Railroad Coordinator publishes the legal notice of intention to close the crossing in a newspaper of general circulation in the county once a week for three consecutive weeks. The notice states the procedure to request a public hearing prior to the closure. Upon request, a hearing is conducted in the municipality or county in which the crossing is located. (For Legal Notice, see Attachment No. 3)*

- *The Division Railroad Coordinator files a written report together with all written statements filed by persons attending the hearing and, a written recommendation concerning the proposed closure to the Multimodal Transportation Engineer.*

- *The recommendation is reviewed by the Multimodal Transportation Engineer and forwarded to the Transportation Director.*

- *After consideration of the report, the recommendation and the statements submitted, the Transportation Director enters the final order.*

Recommended for approval: Robert J. Jilla
Multimodal Transportation Engineer

Approval: _____ *Date* 2/8/2001
Transportation Director

Attachment No. 3

ALABAMA DEPARTMENT OF TRANSPORTATION
RAIL/HIGHWAY SAFETY PROGRAM
STANDARD OPERATING PROCEDURES

- Rail/highway crossings are identified on an annual basis for investigation by ranking using the US DOT Accident Prediction Formula Index. This is done by personnel of Multimodal Bureau.

- Investigative information is compiled for each crossing and personnel of Multimodal Bureau sets a time and date for each diagnostic review. These dates are coordinated with the Division Railroad Coordinator, the affected railroad, and local governments. The Multimodal Bureau will forward a letter to the Division Railroad Coordinator and to the railroad advising of the date and time for the review. The Division will notify the local governing agencies of the times, dates and locations of the reviews.

- Diagnostic reviews are held and recommendations are developed. The diagnostic teams are composed of representatives of the Multimodal Bureau, ALDOT Division personnel, affected railroad company and local governing agency.

- The Division Railroad Coordinator prepares the Diagnostic Review Form, collision diagram, and the area map and forwards these documents to the Multimodal Bureau.

- A reference number is assigned to each project by the Multimodal Bureau. A program document listing all the crossings to be upgraded, corresponding improvements, and the estimated cost is prepared by the Multimodal Bureau and sent to FHWA for review and approval.

- After approval is attained from FHWA, the Multimodal Bureau advises the Division Railroad Coordinator of the crossings that are to be upgraded.

- The Division Railroad Coordinator will forward the maintenance agreements and resolutions to the Multimodal Bureau for further handling. The Division Railroad Coordinator will enter the project in CPMS and send an area map to Mr. George Ray, Transportation Planning Engineer, with a copy to the Multimodal Bureau. The Division will also enter the cost estimate in PES.

- The Multimodal Bureau secures the remaining signatures for the maintenance agreements and resolutions.

- The Bureau of Office Engineer assigns project numbers to each project.

- Supplemental agreements to the Master Agreements are prepared for each project by the Multimodal Bureau and these are sent to the appropriate Railroad Company for review and signatures. Requests for detailed signalization construction plans and estimates for each project are made at this time.

- The railroad company signs the supplemental agreement and prepares the signalization construction plans and estimate and returns them to the Multimodal Bureau.

- The Multimodal Bureau submits the signed Agreements, estimates, and plans to the Office Engineer to obtain authorization from FHWA.

- The Office Engineer issues a work order letter to the railroad to begin work and notifies the appropriate Division to proceed with the project.

- The Railroad Company orders the signal equipment for each project and schedules the project for construction.

- The Railroad Company notifies the Multimodal Bureau and the Division Railroad Coordinator a minimum of ten days before work is started.

- The Railroad Company or its contractor (when approved) installs the signal equipment. State forces or local governments perform any additional work; such as pipe extensions, embankment construction, and the installations of signs and pavement markings.

- While the project is under construction, the Division will be responsible for inspecting the project and recording the results on the Daily Utility Relocation Report (Form SP-1). The Interdepartmental Memorandum dated June 27, 1989 from Mr. Tom Espy, Jr., Chief Engineer, provides the instructions for using this form.

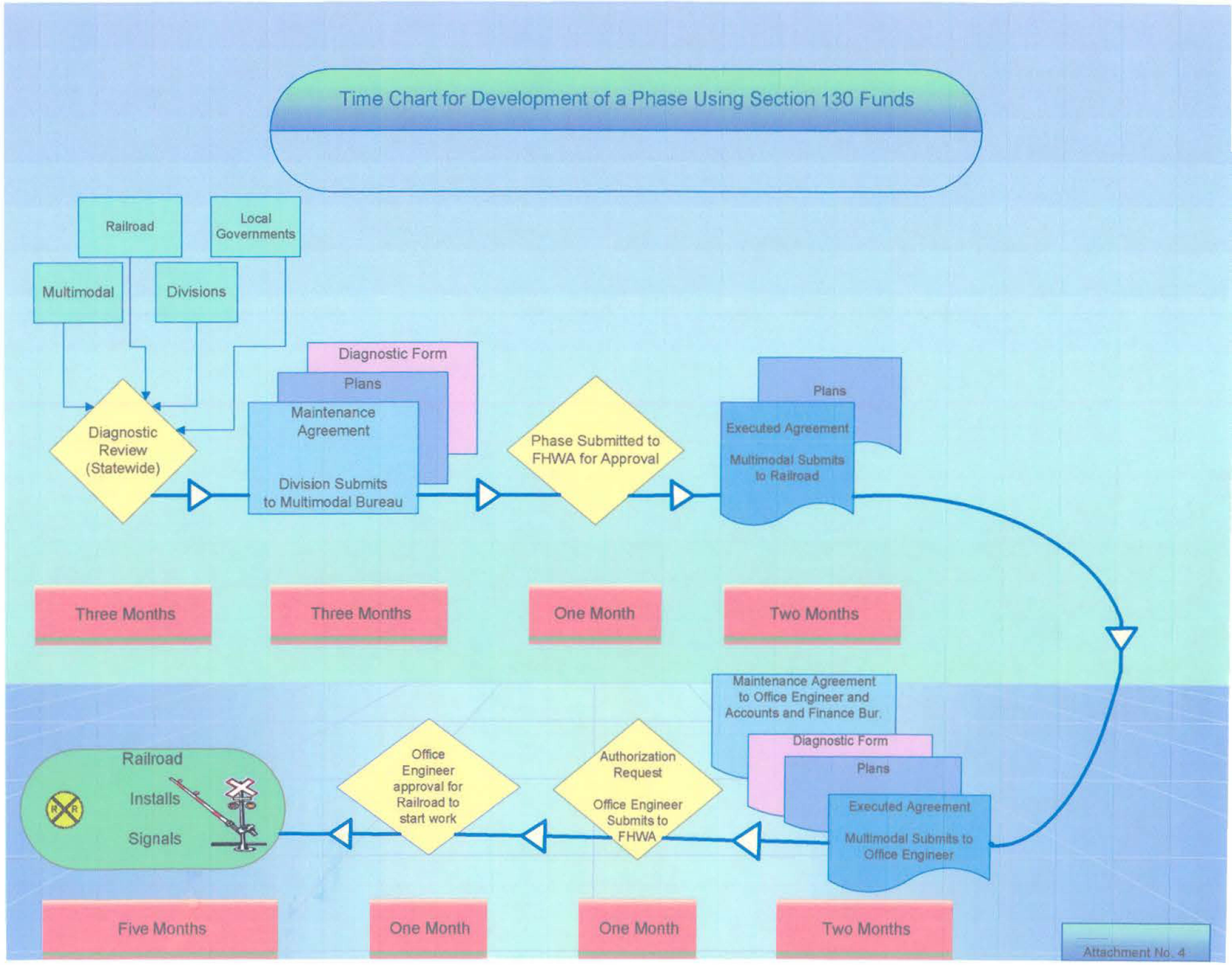
- The Railroad will send invoices to the Multimodal Bureau to request partial periodic payments while the project is under construction. These invoices will be sent to the Divisions to validate the charges on the invoice and returned for further processing. The Multimodal Bureau forwards the request to the Accounts and Finance Bureau for payment.

- When the project is completed a final inspection will be conducted by the Division. The Final Acceptance Form will be completed and the Office Engineer will be notified that the project can be closed out.

- The final invoice is submitted to the Multimodal Bureau for review. This review is coordinated with the Division. The final invoice is submitted to the Accounts and Finance Bureau with a recommendation to make the payment.

- The project is evaluated in ALDOT's annual Safety Report one year after the project is closed out.

A chart is attached showing the normal time line for the Development and Implementation of a complete Phase under the Section 130 Program. (Attachment 4)


Time Chart for Development of a Phase Using Section 130 Funds
Railroad
Local Governments
Multimodal
Divisions
Diagnostic Review (Statewide)
Diagnostic Form
Plans
Maintenance Agreement
Division Submits to Multimodal Bureau
Phase Submitted to FHWA for Approval
Plans
Executed Agreement
Multimodal Submits to Railroad
Three Months
Three Months
One Month
Two Months
Maintenance Agreement to Office Engineer and Accounts and Finance Bur.
Diagnostic Form
Plans
Executed Agreement
Multimodal Submits to Office Engineer
Authorization Request
Office Engineer Submits to FHWA
Office Engineer approval for Railroad to start work
Railroad
Installs
Signals
Five Months
One Month
One Month
Two Months
Attachment No. 4

GUIDELINES FOR OPERATIONS

ALDOT TEXT MESSAGING WHILE DRIVING POLICY

Section 1 Policy: ALDOT employees are prohibited from using text messaging while driving on official business and while operating ALDOT-supplied motorized equipment.

Section 2 Terms:

(a) "Texting" or "Text Messaging" means reading from or entering data into any handheld or other electronic device, including but not limited for the purposes of SMS texting, receiving, reading or sending emails, instant messaging, surfing the internet, obtaining navigational information, or engaging in any other form of electronic data retrieval or electronic data communication.

(b) "Driving" means operating a motorized vehicle on an active roadway with the motor running, including while temporarily stationary because of traffic, a traffic light or stop sign, or otherwise. It does not include operating a motor vehicle with or without the motor running when one has pulled over to the side of, or off, an active roadway and has halted in a location where one can safely remain stationary.

(c) "Operating" means using motorized equipment that is not stationary or turned off.

Section 3 Discipline: Violation of this policy will result in disciplinary action.

Approval: _____ Date: 1-12-2010
D. W. Vaughn, Deputy Director/Chief Engineer

Approval: _____ Date: 1·12·2010
D. J. McInnes, Transportation Director

ALABAMA DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATIONS

SUBJECT: DESIGN-BUILD PROJECT PROCEDURES

Once a project, or group of projects, has been determined to be a candidate for design-build by the Administration of the Department, then the following procedures shall be followed:

1. The Chief Engineer, or his/her designee, shall appoint a design-build team for each specific project(s). The appointed design-build team shall operate under strict confidentiality and shall not discuss details of any proposal outside of the proposing applicant, the design-build team or the Department Administration.
2. Each project has unique characteristics that will require the specific details related to using this procedure to be tailored to meet the requirements of Alabama law. The design-build team will be responsible for developing procedures including, but not limited to, proposal content, selection criteria, prequalification criteria and evaluation of proposals, including alternative technical concepts (ATCs). These procedures shall be approved by the Chief Engineer.
3. The design-build team will be responsible for developing a Request for Proposal based on the plans as developed by the project lead.
4. The State Office Engineer will be responsible for soliciting prequalification packages and bid proposals from design-build firms. The State Office Engineer shall also be responsible for approval/denial of the prequalification packages and notification to each applicant of their eligibility to submit a bid proposal.
5. The design-build team will develop the selection criteria (i.e. low bid, best value, etc.) and present it to the Department Administration for final approval.
6. The design-build team will be responsible for conducting all interviews with applicants, including ATC review and determination. The design-build team will also be responsible for the evaluation, negotiation and clarification of each proposal and submission for selection. The proposals will be submitted to the Transportation Director, or his/her designee, for final selection.
7. Following final selection, the Chief Engineer may designate a representative(s) for the Department to negotiate the contract. Once negotiations are complete, the final contract will be processed by the State Office Engineer and a notice to proceed will be issued.

RECOMMENDED FOR APPROVAL: Clay P. McBrien
STATE OFFICE ENGINEER

APPROVAL:
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

1/4/17
DATE

SECTION 2

PLANNING

C O N T E N T S

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: COMBINING PROJECTS IN THE COMPREHENSIVE PROJECT MANAGEMENT SYSTEM (CPMS)

The term "project" is defined as an undertaking for a particular phase of work at one or more specifically defined locations for which a unique project number has been assigned.

When the preliminary engineering phases have been authorized for each of two or more separate projects, the future phases (RW, UT, and CN) shall remain separate entities and shall not be combined into one project. Two or more projects may be let to contract together by tying them into a single contract proposal when conditions warrant. However, each project shall retain its own unique project number. Each phase of a project (i.e. PE, RW, UT, and CN) will also retain a unique 9-digit identification number.

RECOMMENDED FOR APPROVAL: Clay P. McBrien
STATE OFFICE ENGINEER

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

12-2-15
DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: UPDATING COST ESTIMATES OF PLANNED PROJECTS IN THE COMPREHENSIVE PROJECT MANAGEMENT SYSTEM (CPMS)

1. The construction cost estimates **MUST** be updated as follows:

   a. at the CPMS initiation stage, GDCP-7.0

   b. update preliminary construction estimate, GDCP-74

   c. update preliminary construction estimate, GDCP-118

   d. update preliminary construction estimate, GDCP-204

   e. at the plans, specifications, and estimates (PS&E) inspection stage, GDCP-215

   f. prior to final backcheck, GDCP-224

   g. prior to Construction Bureau review, GDCP-247

   h. the final preliminary construction estimate is updated, GDCP-257

   i. at any other time the estimates are revised.

2. The lead bureau, division, or region is responsible for requesting that <u>all</u> new cost estimates be updated in CPMS. Construction estimates are to include construction engineering costs and indirect cost, if appropriate. If the utility relocation is included in the roadway set of plans for the State's contractor to perform, this cost should also be included in the construction estimates. If reimbursable utilities will be relocated outside of the roadway contract, a separate utility project budget is required in CPMS.

3. The division or region is responsible for updating right-of-way cost estimates in CPMS up to ROW authorization. The Right-of-Way Bureau will update projected completion costs with a Form D after authorization. The division or region is also responsible for updating utility cost estimates in CPMS as increases in costs are known as the utility agreements are developed.

RECOMMENDED FOR APPROVAL: Clay P. McBrien
STATE OFFICE ENGINEER

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

9-25-14
DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: SUPPLEMENTING AUTHORIZED PRELIMINARY ENGINEERING AND RIGHT-OF-WAY PROJECTS

Budgets should be closely monitored and when 75 percent of the expenditures are made, an evaluation of work to be completed needs to be made and a determination at that time as to whether or not there are enough funds to accomplish the work. In the event there are not enough funds, then a request for supplemental funding should be made.

Requests for supplemental funding are to be initiated by the lead bureau or division and transmitted to the Chief Engineer for review and approval.

The lead bureau should make every possible effort to accurately estimate funding requirements in order to provide sufficient funds to cover anticipated expenditures for all divisions and/or bureaus involved.

After receiving the Chief Engineer's approval, the budget will be adjusted. The divisions and/or bureaus will be informed of this by the PMS Exception Report.

RECOMMENDED FOR APPROVAL: _____George Ray_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: ADDING AND DELETING MILEPOST ON THE STATE HIGHWAY SYSTEM

I. INTRODUCTION

The purpose of this document is to provide guidance and document procedures to assure that the location reference system provides for identifying the location of emergency incidents, traffic accidents, highway maintenance activities and physical features such as utilities, bridges and traffic control devices. In addition, the reference system is to assist the driver in estimating his progress of travel through a distance measuring technique. These goals are established in order that the existing data base may be preserved and modifications to the State Highway System may be integrated into this data base.

In response to the provisions of the Highway Department Safety Program Standards, a mileposting method of location references was implemented on the State Highway System. These mileposts provided the required accuracy in identification of accident locations and the continuing surveillance of the roadway network for potentially high accident locations.

Since the project stage of implementation in 1969, both the U. S. Numbered Highway System and the State Highway System have had many additions, extensions and revisions. The Department has documented each of these changes.

In 1999, the kilometer posting method was discontinued and a milepost marking system established.

II. PROCEDURES

Determination of the appropriate revision to the mileposting location reference system must consider the main factors affecting the addition, extension or revisions to the State Highway System. Implementation of any addition or deletion to the State Highway System must be coordinated within the range of the data base which will be formed as soon as the road is opened to traffic. In the cases of previously constructed routes, these procedures are to be followed prior to the change in classification being put into effect.

The procedures for assigning milepost on paper are described below and shown on the attached exhibits as noted.

A. Route Extensions.

The addition of miles before the point of beginning or end is affected by the location of the extension forming the two cases shown on Exhibit A.

Case 1. Extensions northerly or easterly. The milepost continuity as numbering is continued from the previous point of ending in sequential order. The travel distance requirement of the MUTCD is maintained in this simplest form of additional miles. Mileposts are assigned according to the previous procedures.

Case 2. Extensions southerly or westerly. When the zero point is not at the south or west state line, the Rule of 500 is applied. For uniformity of application, the zero milepost is equated to milepost 500. The new point of beginning may be found by subtracting the total length of the extension from 500. The D10-1 sign with zero displayed rather than D10-3 with 500 displayed is to be used at the point of equation. The sign is to be installed only if the installation meets the standards of the MUTCD for longitudinal accuracy of plus or minus 30 feet. Subsequent extensions of a route once the Rule 500 is applied will not need equations as continuity is possible for the first equation. The choice of 500 as the benchmark is based on avoiding duplication on even the longest feasible routes in the State.

B. Route Alignments.

The realignment of a route is affected by both the status of the former route and the length of the change.

1. When the maintenance responsibility on the former route is not taken over by the local agency, new State Route Numbers shall be assigned for the realigned section as shown in Exhibit B and G. This additional numbering will present the motorist with an apparent duplication, but is necessary to avoid the actual duplication which has taken place when the State Route Numbers have been reassigned.

2. When the maintenance responsibility on the former route is taken over by the local agency and the travel distance is shortened by realignment, the existing mileposts are to be removed and the new route mileposted before being opened to traffic. Any equation needed is to be accomplished in the last milepost of the realigned segment as shown for Route 2 in Exhibit C, D, E, F, and H. No proportioning is to be done. The last milepost in the realigned segment should not be placed if it is closer than 0.3 miles from the next previously existing milepost to reduce confusion to the motoring public and the data collection personnel. These equations are to be shown on all county milepost maps.

3. When the maintenance responsibility on the former route is taken over by the local agency and the travel distance is lengthened by realignment, the existing mileposts are to be removed and the new route mileposted before being opened to traffic. The increase in distance is compensated by invoking the Rule of 500 as shown in Exhibit C for Route 1. The 500 has been added to the station in mileposts along the realigned section. No overlapping is present due to the addition.

C. Circle Routes.

Circle Routes will be mileposted beginning at the southerly terminus and marked in a clockwise direction to end at the southerly terminus, the point of beginning as shown in Exhibit I.

These procedures are to be applied upon agreement of the Divisions and Bureaus affected whenever numbering changes for either State Route Number or milepost are involved.

III. REVISIONS

The Transportation Planning Engineer shall be responsible for making revisions to this document when deemed appropriate.

IV. IMPLEMENTATION

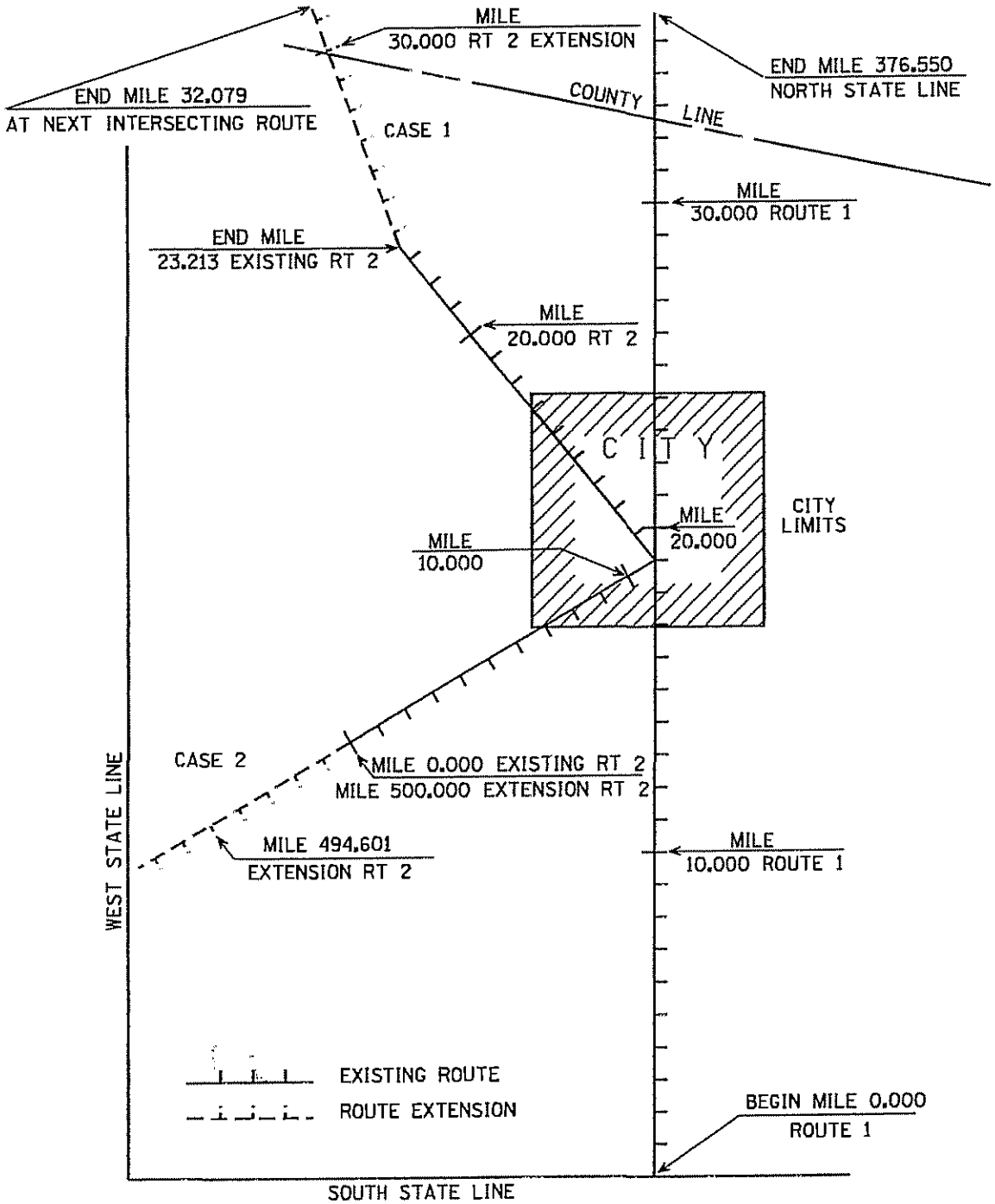
The organization responsible for design roadway plans shall prepare a sketch showing the proposed mileposting scheme and submit same to the Transportation Planning Engineer for approval before including same in the PS & E assembly. This procedure shall also be followed by personnel requesting a revision to the existing milepost systems.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER

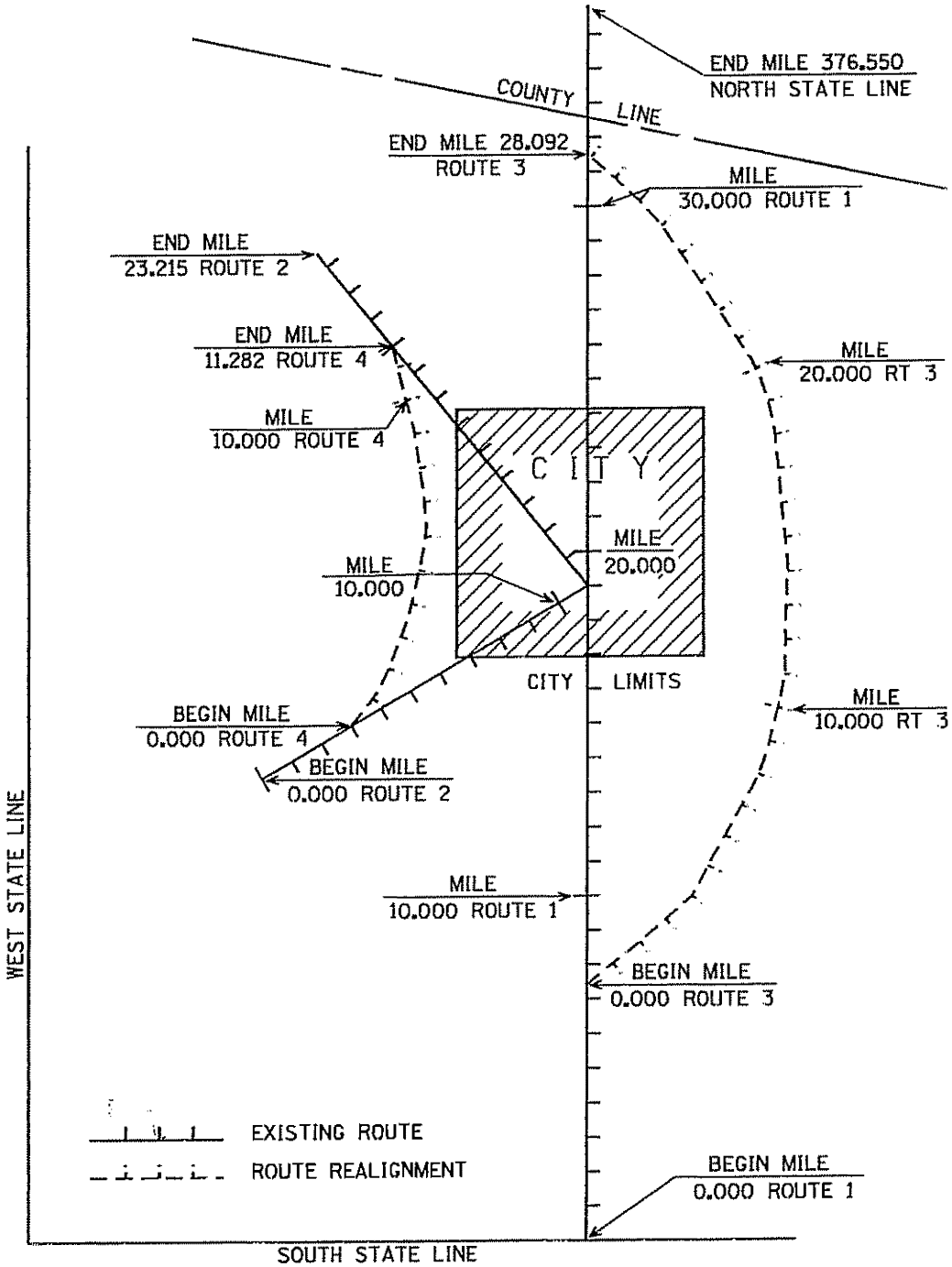
APPROVAL: _____ April 9, 2007
TRANSPORTATION DIRECTOR DATE

EXHIBIT "A"



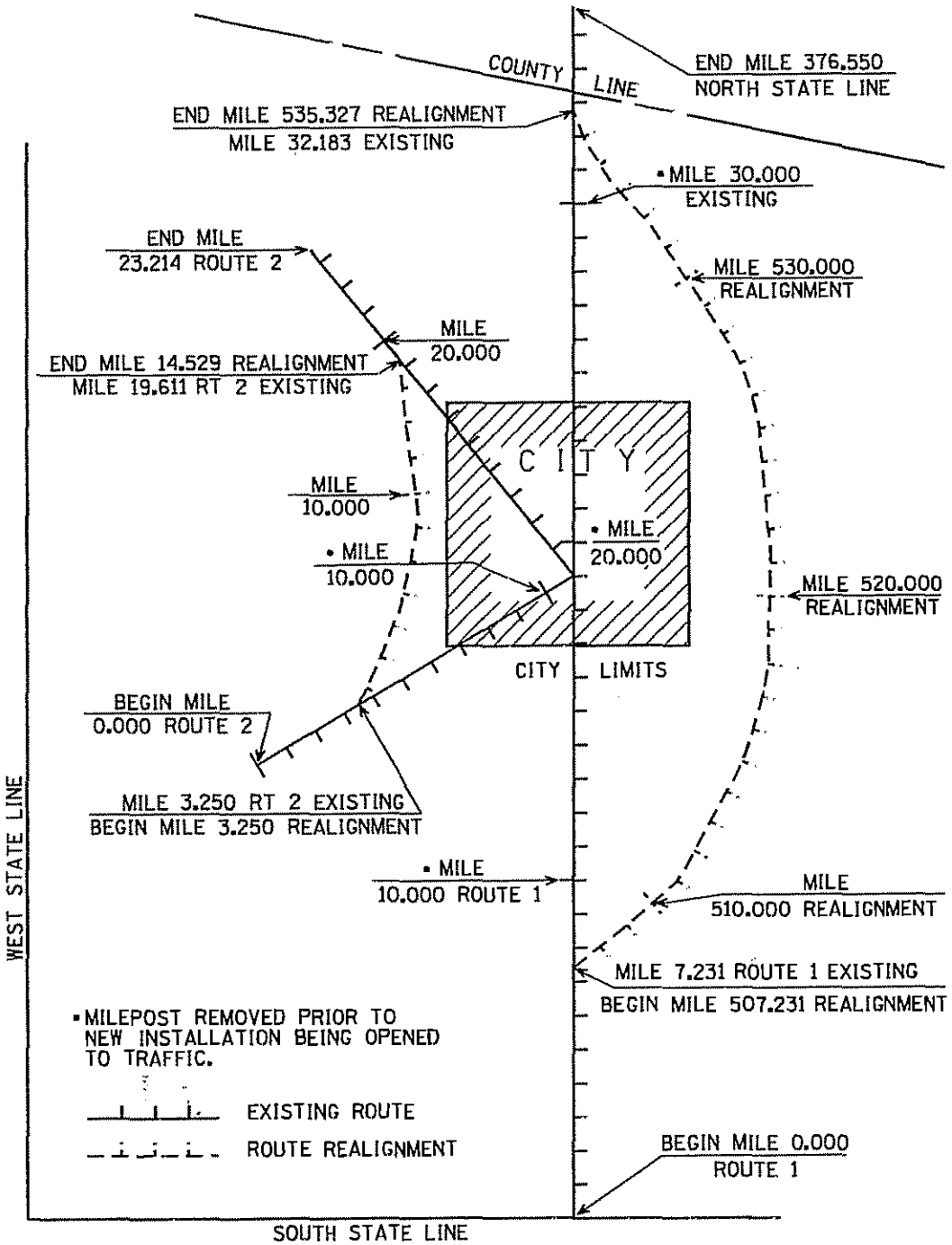
EXAMPLES OF ROUTE EXTENSIONS

EXHIBIT "B"



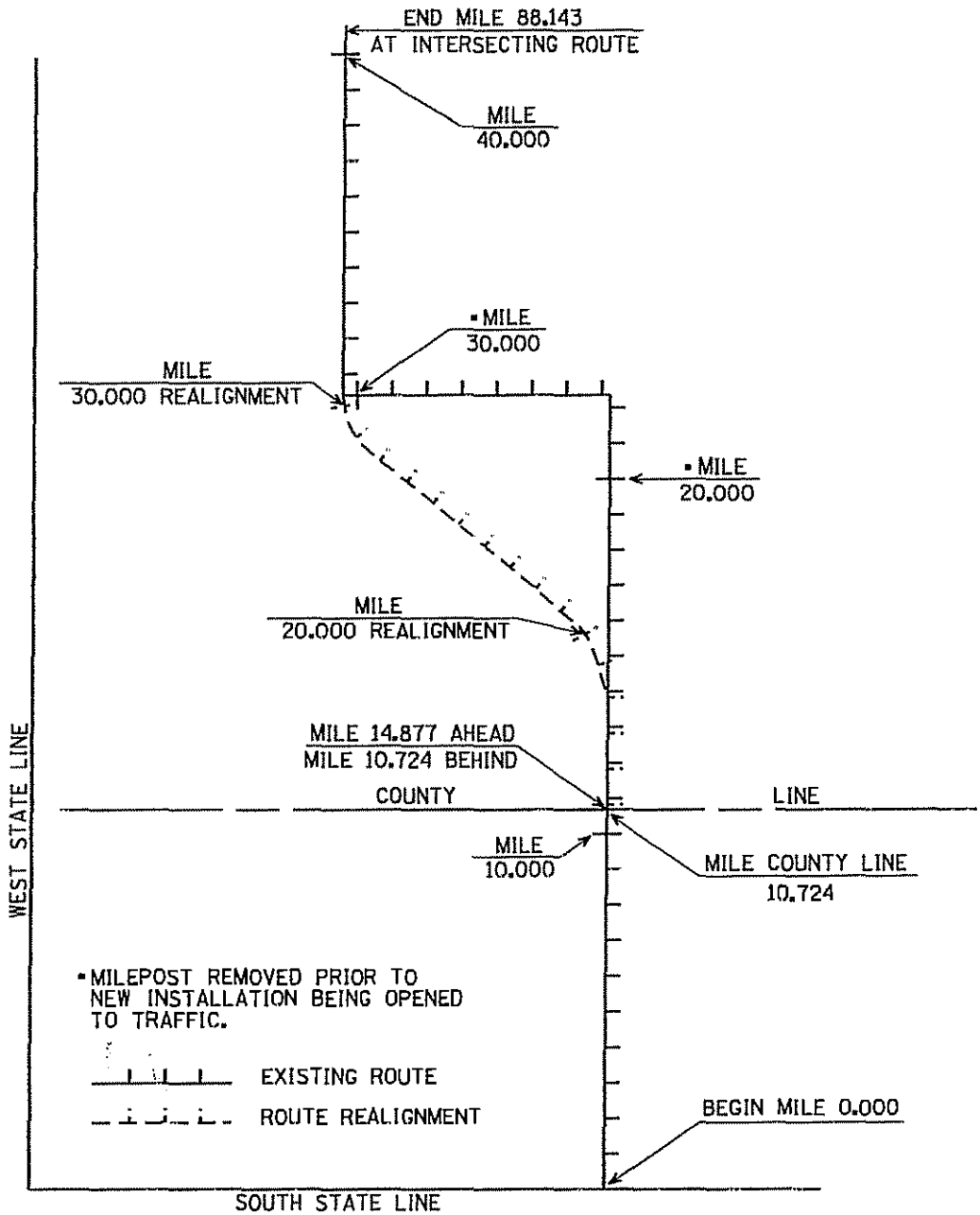
EXAMPLES OF ROUTE REALIGNMENT
WITH NO LOCAL TAKEOVER OF FORMER ROUTE

EXHIBIT "C"



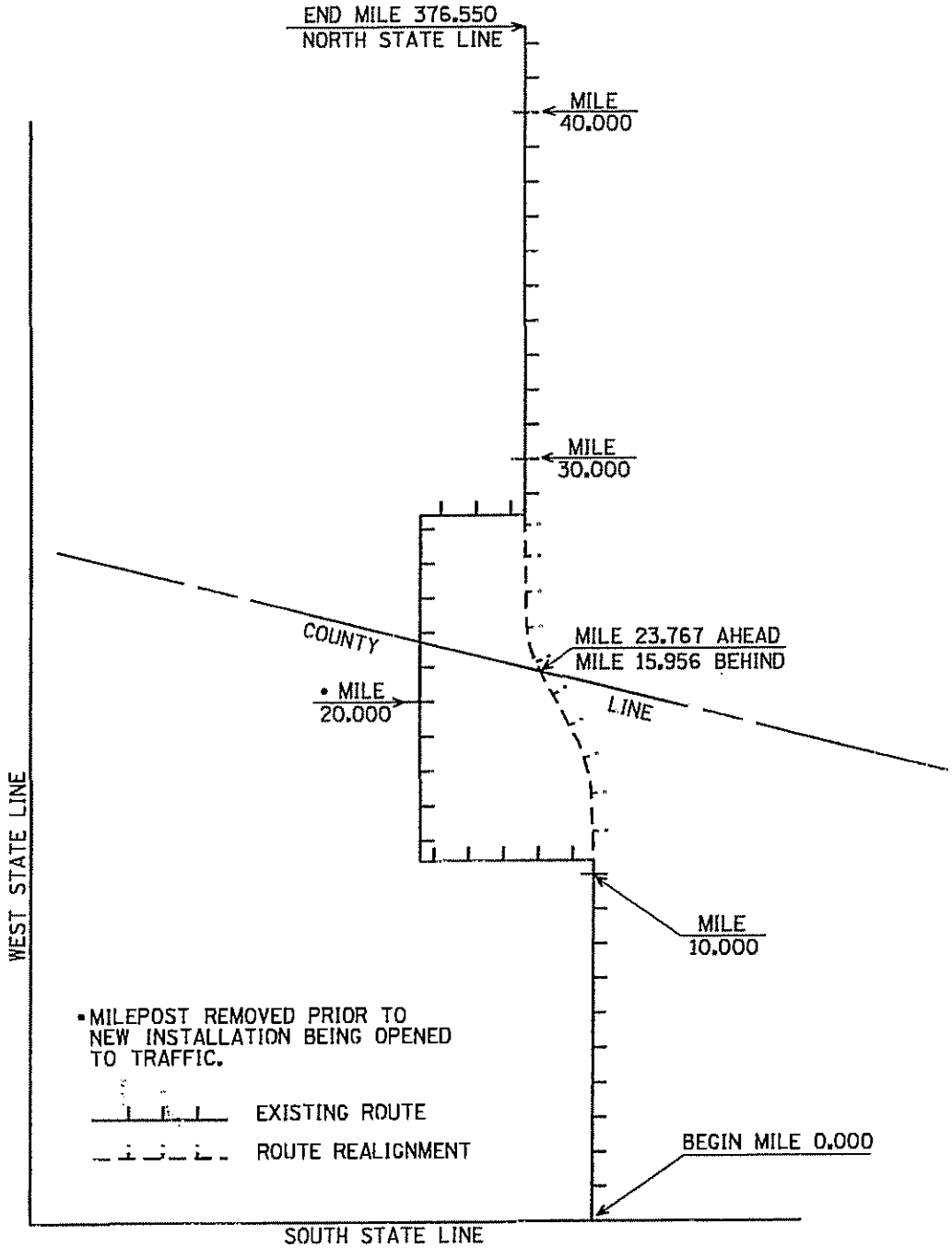
EXAMPLES OF ROUTE REALIGNMENT
WITH LOCAL TAKEOVER OF FORMER ROUTE

EXHIBIT "D"



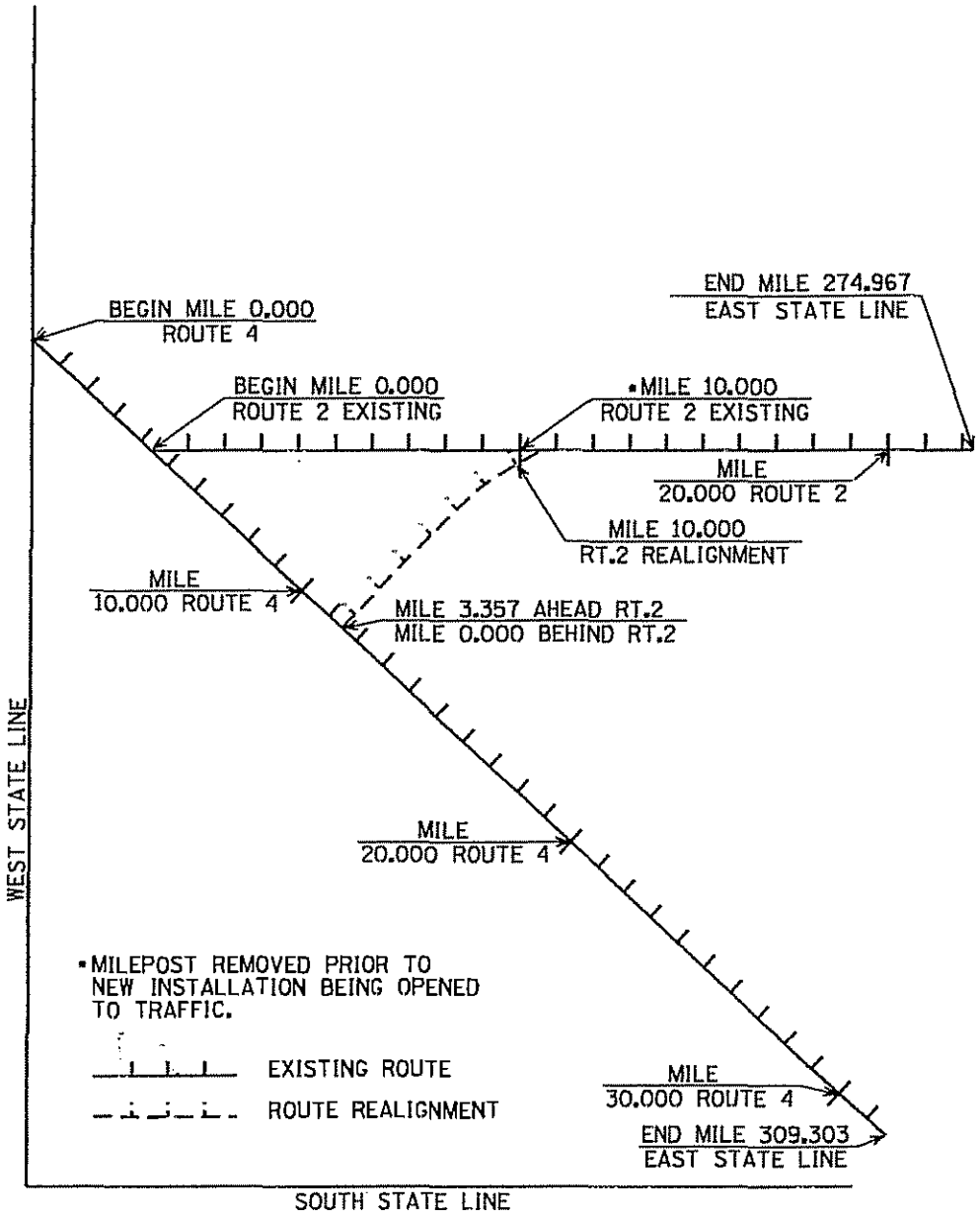
EXAMPLES OF EQUATION PLACEMENT FOR ROUTE REALIGNMENT
WITH LOCAL TAKEOVER OF FORMER ROUTE

EXHIBIT "E"



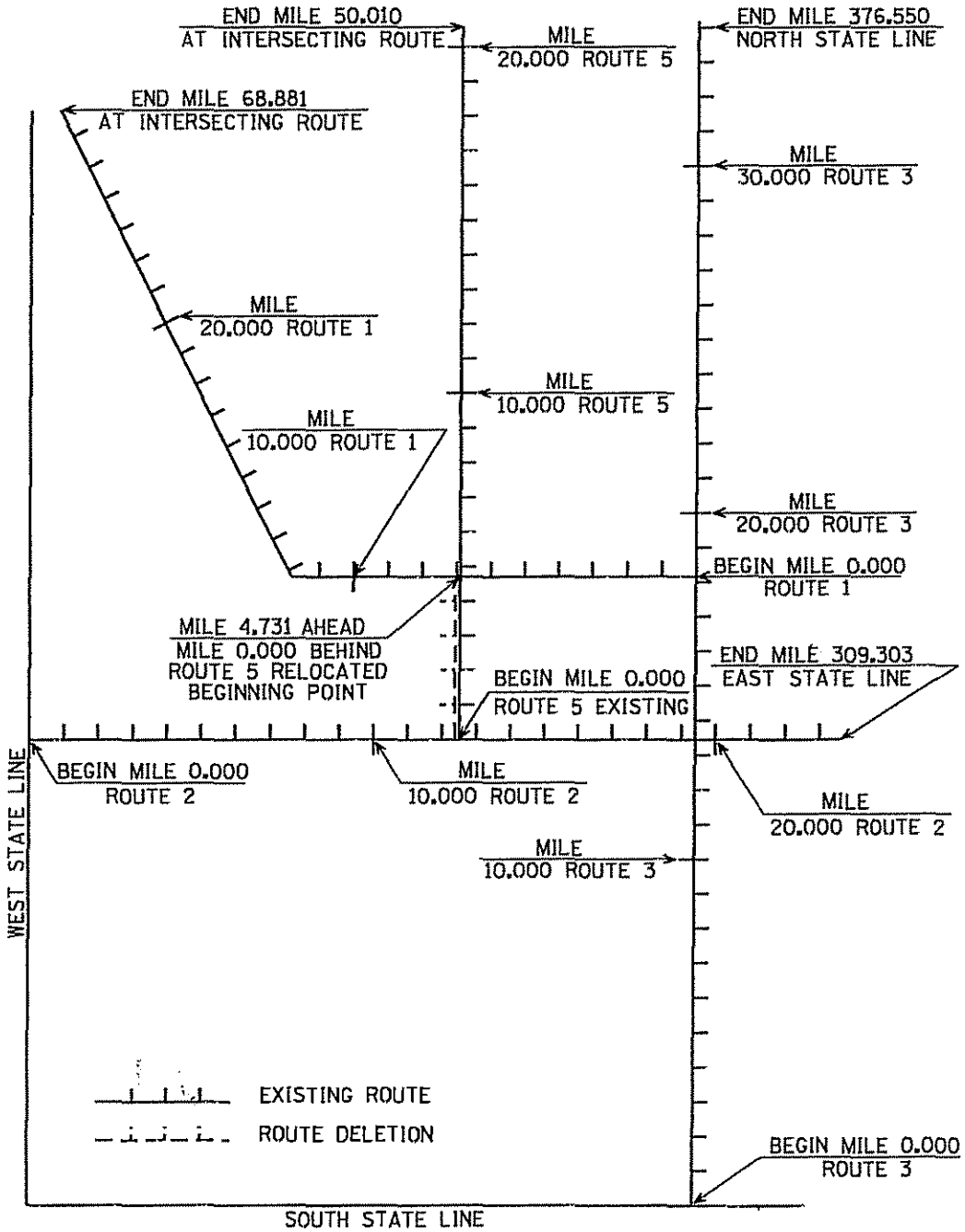
EXAMPLE OF EQUATION PLACEMENT FOR ROUTE REALIGNMENT WITH LOCAL TAKEOVER OF FORMER ROUTE

EXHIBIT "F"



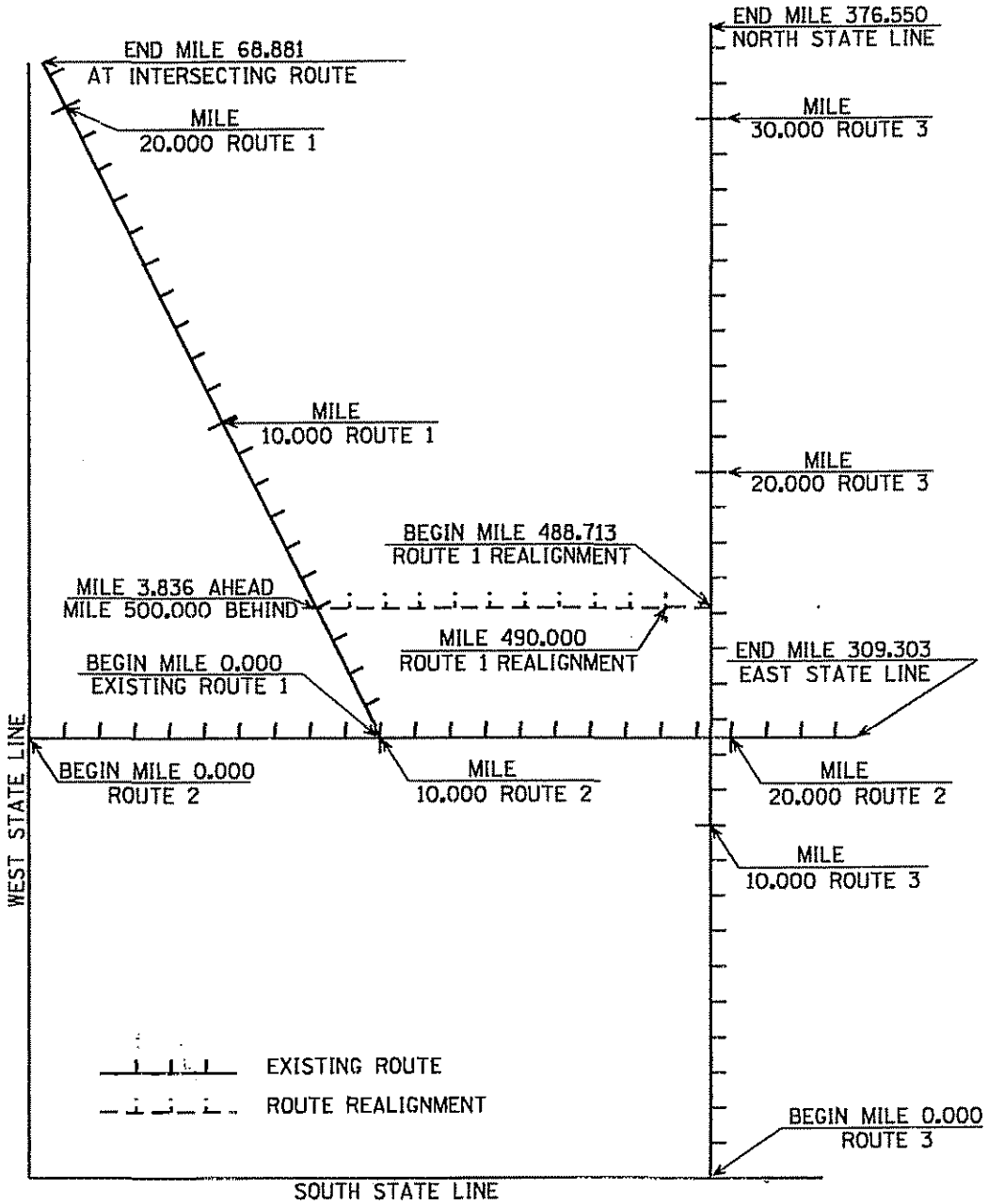
EXAMPLE OF EQUATION PLACEMENT FOR ROUTE REALIGNMENT WITH LOCAL TAKEOVER OF FORMER ROUTE

EXHIBIT "G"



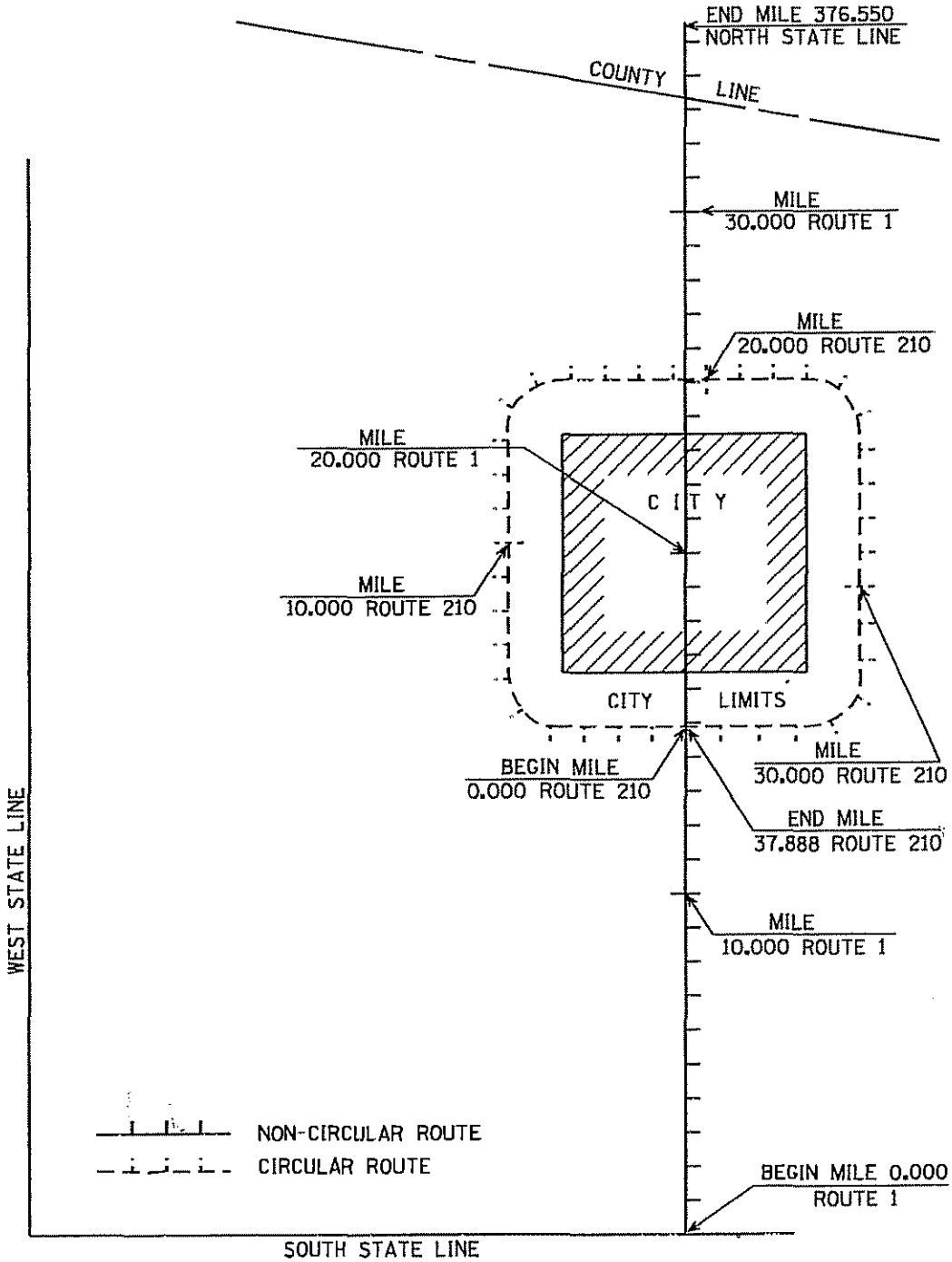
EXAMPLE OF EQUATION PLACEMENT
FOR ROUTE SHORTENED AT BEGINNING

EXHIBIT "H"



EXAMPLE OF EQUATION PLACEMENT FOR ROUTE REALIGNMENT
WITH LOCAL TAKEOVER OF FORMER ROUTE

EXHIBIT "I"



EXAMPLE OF CIRCULAR ROUTES

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: PROJECT ESTIMATES

Project Construction Cost Estimates will be prepared according to the following breakdowns:

1. By Federal-aid system, when more than one system is involved.
2. By rural and urban distinction, based on approved urban boundaries.
3. By county, when a project includes more than one county.
4. By major work types, such as distinction between roadway and structure.

RECOMMENDED FOR APPROVAL: _____D. W. Vaughn_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ ____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: PROHIBITION AGAINST DISCLOSURE AND ADMISSION AS EVIDENCE OF STATE REPORTS AND SURVEYS FOR SAFETY PROJECTS

Please reference section 409 of Title 23, United States Code, which became effective on April 2, 1987, and was amended effective December 18, 1991, by the Intermodal Surface Transportation Efficiency Act of 1991.

> " 409. Discovery and admission as evidence of certain reports and surveys
>
> "Notwithstanding any other provision of law, reports, surveys, schedules, lists or data compiled for the purpose of identifying, evaluating or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings pursuant to sections 130, 144, and 152 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-Aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State Court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists or data."

Any inquiries regarding this subject should be directed to the Chief Legal Counsel's office for response.

RECOMMENDED FOR APPROVAL: Newal Cauthen
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: Tom Espy, Jr.
CHIEF ENGINEER

APPROVAL: Perry A. Hand 8/19/92
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: HIGH FRICTION SURFACE TREATMENTS

This guideline establishes conditions where it may be appropriate to apply High Friction Surface Treatments (HFST). HFST are pavement surfacing systems with exceptional skid-resistant properties that are not typically provided by conventional materials. Also known as anti-skid surfaces, these pavement surface treatment systems are composed of tough, polish-resistant, abrasion-resistant aggregates bonded to the pavement surface using a polymer resin.

Purpose of a HFST:

Maintaining the appropriate amount of pavement friction at critical locations is beneficial for safer driving. In locations where drivers brake, traverse curves or steep grades, the road surface can become prematurely polished, reducing the pavement friction and allowing vehicles to skid. Wet road surfaces act as a lubricant and can also further reduce pavement friction and contribute to skidding.

When applied properly in appropriate locations, HFST is a technology that dramatically and immediately improves pavement friction which should reduce crashes and the related injuries and fatalities. A high-quality, high-friction aggregate may be applied to existing or potential high-crash areas to help motorists maintain better control in both dry and wet driving conditions.

A HFST differs from an Open-Graded Friction Course (OGFC), in that an OGFC is intended for use on high volume mainline pavements and multilane pavement sections where pavement drainage and friction is an issue. Guideline for Operations 6-10 gives specific guidance for applicable locations and use of OGFC.

HFST Applications:

High friction surface treatments are used primarily for enhancing the skid resistance of a pavement surface, but the application process can also be used with different aggregates for colored lanes, bike paths, traffic calming, bus stop areas, or for decorative purposes. Areas where high friction or anti-skidding properties are desirable and the use of a HFST may be considered include:

- Horizontal curves and ramps
- Intersections/intersection approaches

HFST Accepted Countermeasure Effectiveness:

The Department will use the following accepted crash reduction factors (CRF) for HFST applications when determining the eligibility for Highway Safety Improvement Program (HSIP) funding:

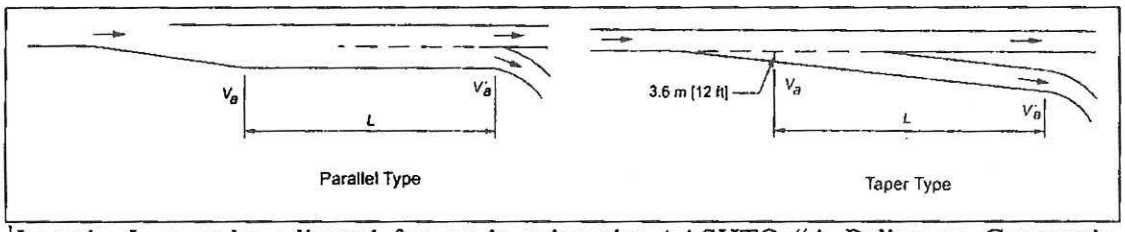
Table 1 -- Crash Reduction Factors for Select Locations
(source: www.cmfclearinghouse.org)

Location/Crash Type	CRF Pavement Conditions	
	DRY	**WET**
Signalized Intersections		
Angle	10%	53%
Rear End	42%	66%
Non-Signalized Intersections		
Angle	17%	17%
Rear End	41%	65%
Urban Curves		
Roadway Departure	20%	39%
Rural Curves		
Roadway Departure	41%	71%

HFST Site Selection Guidance:

Locations where HFST installation may be appropriate are noted below. In these cases, initial installations of HFST are eligible for HSIP funds. Subsequent resurfacing or overlays shall be funded by other means.

- Horizontal curves:
    - Horizontal curves along State maintained routes where the differential speed between the posted speed limit and the advisory speed limit is 20 mph or greater, as determined by an acceptable methodology noted in the most recent edition of the FHWA Manual on Uniform Traffic Control Devices.
    - Horizontal curves on freeway and non-freeway ramp sections where the differential speed between the mainline-posted speed limit (V_a) and the advisory speed limit for a ramp/exit curve (V'_a) is 20 mph or greater, (i.e., where $V_a - V'_a \geq 20$ mph), a HFST may be appropriate. Generally, an exit/entry ramp has unique geometrics not normally encountered on interrupted traffic flow sections, which requires the evaluation of the approach speed reduction zone. If an available deceleration length, L, as noted in Figure 1, of at least 340 feet is available, a HFST may not be appropriate.
    - Along curves that do not meet the above mentioned criteria, but have a documented crash history where the use of a HFST would meet the requirements of the HSIP.



[1]Length, *L*, may be adjusted for grade using the AASHTO "A Policy on Geometric Design of Highways and Streets" chart entitled *Speed Change Lane Adjustments Factors as a Function of Grade.*

Figure 1 - Ramp Configurations

- Intersections:

Intersection approaches where the 3-year rate of wet-pavement crashes (rear-end and/or angle) is twice the countywide average of wet-pavement crashes.

- Other Locations:

Where based on a road safety assessment or road safety review, a HFST has the potential to reduce crashes, such as approaches to pedestrian crosswalks or railroad crossings, steep grades, or roundabouts. The methodology for performing road safety assessments and road safety reviews is contained in the Alabama Road Safety Assessment Manual, available on the Office of Safety Operations website.

HFST Installation Guidance:

The AASHTO Policy on Geometric Design of Highways and Streets provides the following guidance regarding side friction in the design of curves:

"Where practical, the maximum side friction factors used in design should be conservative for dry pavements and should provide an ample margin of safety against skidding on pavements that are wet as well as ice or snow covered. The need to provide skid-resistant pavement surfacing for these conditions cannot be overemphasized because superimposed on the frictional demands resulting from roadway geometry are those that result from driving maneuvers such as braking, sudden lane changes, and minor changes in direction within a lane. In these short-term maneuvers, high friction demand can exist but the discomfort threshold may not be perceived in time for the driver to take corrective action."

Skidding may be prevented by extending the HFST from the point of curvature (PC) back to the point where the deceleration must begin in advance of the curve. This point is the recommended distance in advance of the PC that will allow an average vehicle to decelerate and reach a speed appropriate for navigating the curve. Most drivers decelerate well in advance of this critical point, but those who wait and firmly apply the brakes at the last moment require more friction and may skid or lose control if the pavement is polished or wet.

The recommended distances in advance of the PC are provided in Table 2. A conservative deceleration rate of 10 ft/s^2 was used to determine the starting point of HFST application, prior to the PC of the curve.

Table 2 - Recommended Distance Upstream of the PC to Begin HFST Application[1, 2]
(distances provided in linear feet)

Posted Speed (mph)	Curve Advisory Speed (mph)										
	15	20	25	30	35	40	45	50	55	60	65
35	109	90	65	35	-	-	-	-	-	-	-
40	149	130	106	76	41	-	-	-	-	-	-
45	195	176	152	122	86	46	-	-	-	-	-
50	246	227	203	173	138	97	51	-	-	-	-
55	303	284	260	230	194	154	108	57	-	-	-
60	365	346	322	292	257	216	170	119	62	-	-
65	433	414	389	359	324	284	238	186	130	68	-
70	506	487	462	433	398	357	311	260	203	141	73

[1] Site conditions may require distances to be adjusted, e.g., not extending the HFST beyond the gore on tapered ramps, across major crossroads of intersecting roadways, etc.
[2] 10 ft/s^2 is used as a conservative deceleration value based on driver comfort, but greater deceleration rates are possible on most pavements, even in wet weather.

HFST installed at intersections should be installed in the approach direction only, with the distance from the stop bar the greater of a minimum of 200 feet or the braking distance for the approach speed. The HFST should extend across the full lane width for the direction of traffic flow. If HFST is installed on multiple approaches, the interior of the intersection may be treated with HFST, as well, depending on site conditions. Considerations should be made for approach grade and peak hour queue length. Additional length may be provided where site conditions dictate a longer installation.

Other locations proposed for HFST shall be evaluated on a case-by-case basis through a road safety assessment or road safety review.

Structural Integrity and Condition of Existing Pavement

All proposed locations shall be assessed for pavement structural integrity and condition. The existing pavement shall be free of any base failures and designed to accommodate the current and proposed traffic for the service life of the HFST.

Existing asphalt pavement surfaces shall not exhibit distresses greater than the following: cracking width 1/8 inch and rutting of 0.25 inches. If the pavement surface distresses are greater than these then rehabilitation of the existing pavement surface is required prior to placing the HFST. Existing concrete pavement surfaces shall be assessed on a project level basis to determine the extent of repair necessary before placement of the HFST.

HFST installations shall be installed per current ALDOT Standard Specifications, or applicable special provisions.

HFST Longevity:

The typical life span of a HFST installation is 7-9 years under heavy traffic and 10-15 years for low traffic, provided the underlying pavement maintains its structural integrity during this period.

RECOMMENDED FOR APPROVAL:

TRANSPORTATION PLANNING & MULTIMODAL PROGRAMS ENGINEER

STATE MATERIALS & TEST ENGINEER

APPROVAL:

CHIEF ENGINEER

APPROVAL:

DEPUTY DIRECTOR, OPERATIONS

APPROVAL:

TRANSPORTATION DIRECTOR

DATE: 9-2-2015

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: GUIDELINES FOR REMOVAL AND REWORKING RAIL-HIGHWAY GRADE CROSSINGS WHEN THE RAIL LINE HAS BEEN ABANDONED

Any Railroad Company that has received approval to abandon a railroad facility crossing a street or highway within the State shall remove the tracks and public appurtenances. Any Railroad facilities within the existing right-of-way of the street or highway shall be removed and the portion of the roadway disturbed restored to a paved surface consistent in type to the paved approaches at the crossing to the satisfaction of the Department of Transportation.

All materials, facilities or appurtenances within the roadway shall be removed to the lowest elevation of the crossties, and the area back-filled with materials approved by the Department with in-kind base course materials properly compacted within two (2) inches of the existing pavement surface. A minimum of two (2) inches of asphalt plant mix wearing layer shall be placed to provide a smooth riding surface. Asphalt plant mix base (black base) may be substituted for any other kind of base material. All materials shall be compacted to the satisfaction of the Region/Division Engineer. Costs for traffic control, removal of the track structure and appurtenance, and placing the pavement will be borne entirely by the Railroad.

RECOMMENDED FOR APPROVAL: Robert J. Jilla
MULTI MODAL TRANSPORTATION ENGINEER

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

11/18/13
DATE

Rev. 11/2013

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: OFFICIAL ENGINEER'S ESTIMATE

The Department's official project cost estimates are prepared by the Engineering Section of the Bureau of Office Engineer for inclusion into the project PS&E Assembly, which is submitted to the Federal Highway Administration for project authorization. Between project authorization and the project bid opening date, revisions to these project cost estimates are routinely done and make it possible to effectively evaluate contractor bid prices. This practice is necessary and desirable.

However, once bids are opened for any particular project, revisions to the project cost estimate shall not be made without the approval of the State Office Engineer. Written justification for project estimate revisions subsequent to bid opening may be required.

RECOMMENDED FOR APPROVAL: Clay P. McBrien
STATE OFFICE ENGINEER

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

12-2-15
DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: GIS SERVICES

ALDOT GIS services are now under the supervision and oversight of the Transportation Planning Bureau / Office of Data Collection and Data Management Administrator, and the GIS/LRS Data Management Coordinator. All requests for new or revised GIS applications and GIS data collection will be directed in writing to the Transportation Planning Bureau - Data Collection and Data Management Administrator or the GIS/LRS Data Management Coordinator. Only written requests will be considered. Written requests may include electronic or hard copy format that can be viewed and printed on ALDOT computer equipment.

All personnel outside the Data Collection and Data Management Office are not authorized to develop, revise, adapt, implement, requisition, order, or in any other way initiate a new or a newly revised GIS application or GIS software system of any kind. All GIS data collection efforts encompassing the collection, utilization, and storage of data will also be reviewed and controlled through the Data Collection and Data Management Office. All IT related functions will be under the control of the Computer Services Bureau and will adhere to the standards and procedures set forth by the Computer Services Bureau regarding all aspects of the development, procurement, access, and licensing of software, hardware, and the ALDOT infrastructure.

The prohibition extends to ALDOT employees who are not assigned to the Data Collection and Data Management Office, to any and all consultants, to consultant personnel, to contractors, to contractor personnel, and to any and all public or private GIS systems developers.

Exceptions to the above authorizations and prohibitions include the use of authorized GIS applications and systems written for, implemented for, and licensed to ALDOT. Other exceptions may be considered by the Data Collection and Data Management Administrator and the GIS/LRS Data Management Coordinator on a case by case basis and only after the request is received in writing.

This Guideline for Operation is effective immediately.

RECOMMENDED FOR APPROVAL: Robert J. Gilla
BUREAU CHIEF TRANSPORTATION PLANNING

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF COMPUTER SERVICES

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: _____
ASST. CHIEF ENGINEER
POLICY AND PLANNING

APPROVAL: _____
TRANSPORTATION DIRECTOR

6/19/2015
DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: REPORTS TO THE JOINT HIGHWAY COMMITTEE

Act 89-524, which pertains to the powers and duties of the Joint Highway Committee of the Legislature, requires that several reports be submitted by the Highway Department each fiscal year.

In order to be responsive to the Joint Highway Committee, the following duties, responsibilities and time frames in which these are to be accomplished are herewith designated.

1. Submit the annual five year plan to the Joint Highway Committee prior to July 1 of any given year. It shall be the responsibility of the State Planning Engineer to prepare this document to be presented by the Highway Director.

2. Present a budget for highway construction, maintenance, operation, and administration of the Highway Department not later than the fifteenth legislative day of each annual session of the Legislature. It shall be the responsibility of the Chief Accountant to prepare this document to be presented by the Highway Director.

3. Prepare a report for the Joint Highway Committee to be issued to the Governor, Lieutenant Governor, House of Representatives, Senate, and public within the first ten legislative days of each annual regular legislative session comparing actual performance of the Highway Department in terms of highway construction, maintenance, and costs of the same to the original plan for the immediate preceding fiscal year. It shall be the responsibility of the State Planning Engineer to prepare this document to be presented by the Highway Director.

4. Submit a quarterly report to the Joint Highway Committee on the performance of the Highway Department for the preceding fiscal quarter and its proposed projects and plans for the current fiscal year. It shall be the responsibility of the State Planning Engineer to prepare this document to be presented by the Highway Director.

5. Consider the following factors in determining plans for highway construction:

    A. Commuter benefits
    B. Industrial and agricultural growth
    C. Highway safety
    D. Ecological impacts
    E. Recreation and tourism
    F. Traffic density

The annual five year plan submitted to the Joint Highway Committee shall contain a rating of the above factors for each project. The appropriate departmental offices shall supply the State Planning Engineer with the rating data upon his request of this information.

RECOMMENDED FOR APPROVAL: _____J.F. Carraway_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy Jr._____
PRE-CONSTRUCTION ENGINEER

APPROVAL: _____Royce G. King_____ _____2/5/90_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: BRIDGE REPLACEMENT PROJECTS - FUNDING ELIGIBILITY DETERMINATION

(Applicable to all bridge replacement projects in which either the Design Bureau or Division offices are the lead agency.)

I. BRIDGE REPLACEMENT PROJECTS NOT REQUIRING SUBMITTAL TO FHWA

NHS bridge projects estimated to cost 1 million dollars or less and non-NHS bridge projects estimated to cost 5 million dollars or less.

A. Prior to beginning plan development, preliminary layouts of the alternates and detours to be considered should be developed utilizing enlarged quad maps, existing roadway plans, enlarged aerial photography, or field survey mapping. Preliminary profile grades should also be developed for all alternates giving appropriate consideration to highwater and FEMA flood studies. The proposed typical section should also be developed giving consideration to design year traffic and functional classification of the present roadway.

B. For projects which include on-site detours, the Guidelines for Operation entitled "Bridge Replacement Projects - Detours" should be referred to for the appropriate detour justification studies, documentation, and approval.

C. Detail cost estimates for the alternatives under consideration should be developed. The estimates should include such items as removal of the existing structure, detour construction and removal, costs to upgrade off-site detour roadways, signing, right-of-way, utilities, etc.

D. A bridge replacement funding eligibility determination request letter, including a statement as to whether the bridge is on the approved HBRRP eligibility list, should be prepared and forwarded along with the layouts, profiles, typical sections, and cost estimates to the Chief, Design Bureau. A recommendation on the preferred alternate should be included in the request letter with a brief narrative summarizing the justification for the recommendation. Other pertinent information such as structure number and sufficiency rating should also be included.

E. An on-site inspection should be scheduled as deemed appropriate by either Division personnel and/or Location Section personnel to review the proposed scope of work and detours. Results of the on-site inspection are to be documented by the lead agency.

F. The Design Bureau, Location Section, is to prepare a bridge replacement funding eligibility determination letter to the Division Engineer with a notice to proceed with plan development.

II. BRIDGE REPLACEMENT PROJECTS REQUIRING SUBMITTAL TO FHWA

NHS bridge projects estimated to cost over 1 million dollars and non-NHS bridge projects estimated to cost over 5 million dollars.

A. Prior to beginning plan development, preliminary layouts of the alternates and detours to be considered should be developed utilizing enlarged quad maps, existing roadway plans, enlarged aerial photography, or field survey mapping. Preliminary profile grades should also be developed for all alternates giving appropriate consideration to highwater and FEMA flood studies. The proposed typical section should also be developed giving consideration to design year traffic and functional classification of the present roadway.

B. For projects which include on-site detours, the Guidelines for Operation entitled "Bridge Replacement Projects - Detours" should be referred to for the appropriate detour justification studies, documentation, and approval.

C. Detail cost estimates for the alternatives under consideration should be developed. The estimates should include such items as removal of the existing structure, detour construction and removal, costs to upgrade off-site detour roadways, signing, right-of-way, utilities, etc.

D. A bridge replacement funding eligibility determination request letter, including a statement as to whether the bridge is on the approved HBRRP eligibility list, should be prepared and forwarded along with the layouts, profiles, typical sections, and cost estimates to the Chief, Design Bureau. A recommendation on the preferred alternate should be included in the request letter with a brief narrative summarizing the justification for the recommendation. Other pertinent information such as structure number and sufficiency rating should also be included.

E. An on-site inspection should be scheduled by the lead agency for the Division Office and Location Section personnel to review the proposed scope of work for each alternative and detours. The Federal Highway Administration should be invited to attend as well as other section or bureaus such as the Environmental Technical Section and Hydraulic Section as deemed appropriate for the particular site. The lead agency is to document the findings and recommendations resulting from the on-site inspection.

F. The Design Bureau, Location Section, will prepare a bridge replacement funding eligibility determination letter to the Federal Highway Administration. Preliminary layouts, profiles, typical sections, and cost estimates will be forwarded to the FHWA, a notice to proceed with plan development will be forwarded to the Division Engineer with a copy of the BR funding eligibility determination.

RECOMMENDED FOR APPROVAL: _____Ray D. Bass_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Newal S. Cauthen_____
CHIEF ENGINEER

APPROVAL: _____M. Roberts_____ _____5/3/93_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: FUNDING FOR RAIL-HIGHWAY SAFETY PROJECTS

The purpose of this guideline is to establish the funding ratio for Section 130 rail-highway safety projects as allowed for by Title 23 U.S.C. Section 120(c) and 23 CFR Section 646.212(b)(2).

PROJECT FINANCIAL RESPONSIBILITY

Rail-highway signalization for Section 130 Projects will be funded through Title 23 U.S.C. Section 120(c) and 23 CFR Section 646.212(b)(2). The projects will be constructed with 100 percent federal funds. This guideline pertains to rail-highway safety projects located for on-system and off-system highways, roads, and streets.

BASIS FOR ESTABLISHMENT OF GUIDELINE

Please reference Title 23 U.S.C. Section 120(c) and 23 CFR Section 646.212(b)(2). The paragraph reads as follows:

> INCREASED FEDERAL SHARE FOR CERTAIN SAFETY PROJECTS.
> The Federal share payable on account of any project for traffic control signalization, maintaining minimum levels of retroreflectivity of highway signs or pavement markings, traffic circles (also known as "roundabouts"), safety rest areas, pavement marking, shoulder and centerline rumble strips and stripes, commuter carpooling and vanpooling, rail-highway crossing closure, or installation of traffic signs, traffic lights, guardrails, impact attenuators, concrete barrier endtreatments, breakaway utility poles, or priority control systems for emergency vehicles or transit vehicles at signalized intersections may amount to 100 percent of the cost of construction of such projects; except that not more than 10 percent of all sums apportioned for all the Federal-aid programs for any fiscal year in accordance with Section 104 of this title shall be used under this subsection.

As stated, projects eligible for 100 percent Federal funding include those for traffic control signalization. It has been determined by the Federal Highway Administration that traffic control signalization includes the installation of signal systems, including crossing gates and required circuitry, at rail-highway intersections.

RECOMMENDED FOR APPROVAL: Robert J. Jilla
MULTI MODAL TRANSPORTATION ENGINEER

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

11/18/13
DATE

Rev. 11/2013

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: EXIT NUMBERS

The procedure for identifying exits on State and Interstate Routes is determined by the milepost number preceding the exit.

One exit within a mile is identified by the milepost number preceding the exit.

Two or more exits within the same mile are identified by the milepost number preceding the exits used with letters in an alphanumeric manner for identification. Each exit will use the milepost number plus a letter, beginning with A and proceeding in alphabetical order. Numbers are assigned in order of appearance on milepost logs, @ south to north direction for odd numbered routes; west to east direction for even numbered routes.

The point used to determine the location of the exit is the centerlines of the routes involved (grade separation) or terminus of a route.

The identification for exit numbers was changed from kilometer to milepost in the year 1999.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 3/26/07
TRANSPORTATION DIRECTOR DATE

Alabama Department of Transportation

Context Sensitive Solutions Policy Statement

ALDOT will develop transportation projects that improve or maintain safety and mobility in a way that seeks to preserve and enhance the quality of life for the users of the facility and the surrounding community whenever possible. The process will be a collaborative, interdisciplinary approach that involves working with citizens, local governments and regulatory agencies to develop a transportation facility that best fits its physical setting while addressing the transportation need.

Approved: _____ Date: January 18, 2008

Donald W. Vaughn
Deputy Director/Chief Engineer

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: STATEWIDE PLANNING CONSULTATION PROCESS

In accordance with 23 CFR 450 as amended and applicable Federal Highway Administration/ Federal Transit Administration (FHWA/FTA) planning guidelines, the Alabama Department of Transportation (ALDOT) adopts the following to provide for cooperative planning with Non-Metropolitan local officials and consulting planning with the Tribal Governments and the Department of Interior in the Alabama Statewide Transportation Planning Process (ASTPP), including the initial development of the Long-Range Statewide Transportation Plan (LRSTP) and the Statewide Transportation Improvement Program (STIP):

1. Prior to the periodic development, review, and/or revisions to the LRSTP and STIP, ALDOT's Bureau of Office Engineer (BOE) will provide notification of the proposed action and request comments/suggestions.
    a. The notification process to Non-Metropolitan local officials will consist of, at a minimum, that the BOE will provide information regarding the proposed action to the Rural Planning Organizations (RPOs). The RPOs will then distribute the information to their members and coordinate responses for submission to ALDOT. In addition, ALDOT will provide notification to the following organizations: Association of County Commissioners/Engineers of Alabama, Alabama League of Municipalities, and the Alabama Association of Regional Council. These agencies will be requested to advise their membership of the proposed action, coordinate their constituents' response, and return to ALDOT within the requested time period.
    b. The notification process to Tribal Governments will consist of, at a minimum, that the BOE will provide information regarding the proposed action to the Alabama Indian Affairs Commission. This agency will be asked to coordinate their constituents' response and return to ALDOT within the requested time period. In addition, ALDOT will provide notification to all Native American Tribes recognized by the State.
    c. The notification process to the Department of Interior will consist of, at a minimum, that the BOE will provide information regarding the proposed action to this agency for their participation in LRSTP/STIP updates.
2. ALDOT will review and consider the comments/suggestions received **before** developing the draft LRSTP/STIP and commencing with the public involvement process.

3. After the adoption of the LRSTP and STIP, ALDOT will advise those agencies listed in the above item #1 of the comments received and the resultant actions. For any proposed modification not adopted, ALDOT will provide its reasoning.

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: STATEWIDE PLANNING CONSULTATION PROCESS

4. ALDOT will, as required by 23 CFR 450 or applicable FHWA/FTA planning regulations, solicit comments regarding the effectiveness of this cooperative process for notification to Non-Metropolitan local officials.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ May 7, 2021
TRANSPORTATION DIRECTOR DATE

ALABAMA
DEPARTMENT OF TRANSPORTATION
GUIDELINES FOR OPERATION

SUBJECT: TRANSFERRING STATE ROUTES TO CITIES AND COUNTIES

Alabama Code §23-1-40 (1975) provides that the Alabama Department of Transportation (Department) designate the roads to be constructed, repaired and maintained. When the Department determines that the construction, repair and maintenance of any portion of a state route should no longer be its responsibility, an agreement that provides for the transfer of this responsibility will be executed between the Department and the appropriate city or county.

The documents required for this transfer should be prepared by the Region and submitted to the Right-of-Way Bureau for review prior to being submitted to the city or county for execution. The Region should coordinate the preparation of the deed and right-of-way documentation with the Right-of-Way Bureau.

<u>If the transfer is due to the relocation of a state route to a newly constructed route, the agreement shall be fully executed before the construction project is authorized for letting. The quitclaim deed will be executed after project completion. If the relocation of a state route is not due to a construction project, the agreement and quitclaim deed shall be fully executed before the re-designation of the route that will be maintained by the Department.</u>

RECOMMENDED FOR APPROVAL: Steven E. Walker
BUREAU CHIEF

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

6/16/15
DATE

AGREEMENT BETWEEN THE
STATE OF ALABAMA
DEPARTMENT OF TRANSPORTATION
AND
(Governmental Agency)

FOR THE TRANSFER OF PUBLIC ROAD

This AGREEMENT is made and entered into by and between the State of Alabama Department of Transportation, hereinafter referred to as ALDOT, and the City/County of _____, hereinafter referred to as CITY/COUNTY, and

WHEREAS, it is in the public interest for ALDOT and CITY/COUNTY to cooperate in the transfer of ownership and maintenance of _____ as illustrated on the document, plat or right-of-way map attached hereto as Exhibit 1 and, if applicable, as described in _____ County Probate Office in Deed Record Book _____, Page _____, and as more fully described as follows:

[Insert Legal Description]

(Hereinafter referred to as ROADWAY)

NOW THEREFORE, ALDOT and the CITY/COUNTY for, and in consideration of the ROADWAY stated herein, do hereby mutually promise and agree as follows:

[Include and complete appropriate provision(s) below as applicable]

Prior to the transfer, ALDOT agrees to _____ [resurface, re-stripe, relocate, re-sign, improve, and/or other – describe] the above-described ROADWAY and [if applicable, in accordance with plans prepared by ALDOT and designated as Project No. _____].

ALDOT agrees to remove the above-described ROADWAY from the state highway system and to remove all U.S. and State route signs thereon as is necessary.

ALDOT agrees to transfer its possession and ownership of the above-described ROADWAY and to execute a quitclaim deed, attached hereto as Exhibit 2, to the CITY/COUNTY transferring any and all rights, title and interest ALDOT may possess in the above-described ROADWAY.

The CITY/COUNTY agrees to assume ownership and maintenance of the above-described ROADWAY upon execution and delivery of the quitclaim deed attached as Exhibit 2.

The CITY/COUNTY and their officials, employees, contractors, servants and/or agents, shall release, defend, indemnify and hold harmless the State of Alabama, the Alabama Department of Transportation and their officers, officials, employees, assigns, successors or representatives (ALDOT) and FHWA in both their official and individual capacities, from and against any and all claims, damages, losses, actions, causes of actions, losses or expenses of any nature whatsoever, regulatory actions, administrative actions, quasi-administrative or quasi-judicial actions or proceedings, both state and federal or otherwise, of any nature whatsoever, including but not limited to compensatory damages, punitive damages, damages for any injury to person or property, tangible or intangible, or any form of monetary or compensatory relief, declaratory or injunctive relief, or any form of relief or remedy of any nature whatsoever, or attorney fees, costs or expenses, caused by or arising out of, resulting from or in any way related to the above-described ROADWAY arising or occurring from the date of execution of the quitclaim deed transferring the ROADWAY to the CITY/COUNTY.

The CITY/COUNTY agrees that the ROADWAY was constructed with public funds and that it must be used as a public road.

It is expressly understood and agreed upon by both parties that in the event the CITY/COUNTY ceases to use the transferred ROADWAY as a public road or ALDOT

determines, after transfer, that the ROADWAY is required for the safe and proper operation of the state highway system, title to the ROADWAY shall automatically revert to ALDOT. Upon notice and request the CITY/COUNTY shall execute a quitclaim deed to ALDOT.

By entering into this AGREEMENT, the CITY/COUNTY is not an agent of the State, its officers, employees, agents or assigns. The CITY/COUNTY is an independent entity from the State and nothing in this AGREEMENT creates an agency relationship between the parties.

IN WITNESS WHEREOF, the parties hereto cause this AGREEMENT to be executed by those officers, officials and persons thereunto duly authorized, and this AGREEMENT is deemed to be effective upon its execution by all the parties.

THIS SECTION INTENTIONALLY LEFT BLANK.

SIGNATURE LINES FOLLOW ON NEXT PAGE.

SEAL

ATTEST:

CITY/COUNTY

_____
Clerk (Signature)

BY: _____
Chairman/Mayor (Signature)

_____
Type name of Clerk

_____
Type name of Chairman/Mayor

RECOMMENDED FOR APPROVAL:

Date: _____

_____
(Type Name)
Region Engineer
Alabama Department of Transportation

_____
Ronald L. Baldwin, P.E.
Chief Engineer
Alabama Department of Transportation

THIS AGREEMENT HAS BEEN LEGALLY REVIEWED AND APPROVED AS TO FORM AND CONTENT:

BY: _____
Jim R. Ippolito, Jr.
Chief Counsel
Alabama Department of Transportation

APPROVED:

ALABAMA DEPARTMENT OF TRANSPORTATION

_____
Transportation Director, John R. Cooper

Date: _____

RESOLUTION NUMBER _____

BE IT RESOLVED by the City Council/Commission of _____, Alabama that the City enter into an Agreement with the State of Alabama Department of Transportation for:

> The transfer of ownership and maintenance of [insert road description here from beginning of route to end] from ALDOT to the City; [insert additional language as needed];

Which Agreement is before this Council, and that the agreement be executed in the name of the City, by the Mayor for and on its behalf and that it be attested to by the City Clerk and the seal of the City affixed thereto.

BE IT FURTHER RESOLVED, that upon completion of the execution of the Agreement by all parties, that a copy of such Agreement be kept of record by the City Clerk.

Passed, adopted and approved this _____ day of _____, 20__.

ATTESTED:

_____	_____
City Clerk	Mayor, City Council

I, the undersigned qualified and acting clerk of _____, Alabama, do hereby certify that the above and foregoing is a true copy of a resolution lawfully passed and adopted by the City Council of the City named therein, at a regular meeting of such City Council held on the _____ day of _____, 20__, and that such resolution is of record in the Minute book of the City.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City on this _____ day of _____, 20__.

_____
City Clerk

SEAL

RESOLUTION NUMBER _____

BE IT RESOLVED by the County Commission of _____ County, Alabama, that the County enter into an Agreement with the State of Alabama Department of Transportation for:

> The transfer of ownership and maintenance of [insert road description here from beginning of route to end] from ALDOT to the County; [insert additional language as needed];

Which Agreement is before this Commission, and that the agreement be executed in the name of the County, by the Chairman of the Commission for and on its behalf and that it be attested to by the County Clerk and the seal of the County affixed thereto.

BE IT FURTHER RESOLVED, that upon completion of the execution of the Agreement by all parties, that a copy of such Agreement be kept of record by the County Clerk.

Passed, adopted and approved this _____ day of _____, 20__.

ATTESTED:

_____	_____
County Clerk	Chairman, County Commission

I, the undersigned qualified and acting clerk of _____ County, Alabama, do hereby certify that the above and foregoing is a true copy of a resolution lawfully passed and adopted by the County Commission of the County named therein, at a regular meeting of such Commission held on the _____ day of _____, 20__, and that such resolution is of record in the Minute book of the County.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the County on this _____ day of _____, 20__.

_____
County Clerk

SEAL

SECTION 3

DESIGN

C O N T E N T S

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: DESIGN CRITERIA

All plans, specifications, and estimates (PS&E's) must conform to the current approved edition of AASHTO's "A Policy on Geometric Design of Highways and Streets" (Green Book). Deviations from controlling criteria in this policy will require the processing of design exceptions.

Design exceptions for each project shall be reviewed by the Division Engineer and submitted to the State Design Engineer for his review and further processing as deemed appropriate.

RECOMMENDED FOR APPROVAL: William F. Lane
STATE DESIGN ENGINEER

APPROVAL: T M Bailey
CHIEF ENGINEER/DEPUTY DIRECTOR

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

11/28/2012
DATE

Rev. 11/2012

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: COMPUTER AIDED DRAFTING AND DESIGN (CADD) STANDARDS TO BE FOLLOWED IN THE PREPARATION OF CONTRACT PLAN ASSEMBLIES

The Alabama Department of Transportation Data Management Board has approved that all new projects begun after the date of this Guideline have contract plan assemblies created that adhere to the Alabama Department of Transportation CADD standards. These standards automate the creation, organization and appearance of Alabama Department of Transportation Contract Plan documents in both electronic format and the format as plotted to paper. Current CADD standards are available in the form of a web-based workspace called "NetSPEX Designer" that works in conjunction with InRoads and InXpress, the ALDOT civil engineering design system, and MicroStation, the ALDOT computer aided drafting system. The standards control seed files, reference files, cell libraries, font libraries, design element attributes such as color, weight, level and linestyle, file naming conventions, standard sheet formats, access to automated procedures and more.

Access to the Alabama Department of Transportation CADD standards is available through the Design Bureau Engineering Support Section's Internet web page at http://www.dot.state.al.us/Docs/Bureaus/Design/Roadway/Engineer+Support/EngSupp.htm or Intranet web page at http://csiis5/C8/Engineering%20Support%20Section/default.aspx. These web pages will contain the latest production version of the CADD standards, documentation concerning download and installation, a history of any updates and/or changes and a listing of contact personnel for any support issues. It shall be the responsibility of the designer to ensure contract plan compliance with the standards.

RECOMMENDED FOR APPROVAL: _____
DESIGN BUREAU CHIEF

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 1/11/06
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: PLAN PREPARATION AND ABSORBED ITEMS

The following guidelines should be followed in the preparation of all plans let by the Alabama Highway Department in all lettings after February 1987:

- Eliminate the use of the term "absorbed in other items" on project plans for payment designation purposes.

- Whenever practical, quantities for all items of work should be determined and assigned pay item number and placed on Summary Sheet.

- When it is unimportant to the contractor to know the exact quantity involved in an item of work, or it is impractical to quantify numerous small work items, it is permissible to include these items with another specific item. A note should clearly designate that such an item is a subsidiary obligation of a related work item, leaving no doubt with the contractor that pay for a specific item includes pay for the subsidiary item.

RECOMMENDED FOR APPROVAL: _____J.F. Carraway_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ ____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: PROJECT NOTES PLACEMENT

In order to standardize the placement of special or general plan notes in the construction plans, the following note placement shall be used:

Number all notes according to the following schedule:

100-199	GN-2 Notes
200-299	Typical Section Notes
300-399	Summary of Quantity Sheet Notes
400-499	Plan Sheet Notes (Plan/Profile, Paving Layout)
500-599	Signal Sheets
600-699	Electrical Sheets
700-799	Traffic Control Sheets
800-899	Utility Sheet Notes
900-999	Any notes that apply to other specific sheets
1000-1099	Sign Notes
1100-1199	ITS Plan Notes

All numbered notes are to be placed under the appropriate category on a special "Project Note Sheet."

The project note sheet or sheets are to be placed after the typical section sheet(s) in the plan assembly.

RECOMMENDED FOR APPROVAL: _____
STATE DESIGN ENGINEER

APPROVAL: _____
CHIEF ENGINEER/DEPUTY DIRECTOR

APPROVAL: _____ 5/11/12
TRANSPORTATION DIRECTOR DATE

Rev. 5/2012

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: PLAN REVISIONS

1) After all comments from the Construction Bureau and FHWA have been addressed, the plans shall be transmitted to the Bureau of Office Engineer a minimum of eight weeks in advance of the scheduled letting date (10 weeks for January).

2) After plans are submitted to the Bureau of Office Engineer, flagging will not be required prior to the letting authorization date (four weeks prior to the scheduled letting date). The full-size prints of each revised sheet during this phase shall be furnished to the Bureau of Office Engineer for inclusion in the plan assembly, and the originals of these sheets shall be replaced and discarded. **Note: If revisions are made after construction review and prior to or after the Bureau of Office Engineer submittal, the lead should make Construction Bureau aware of these changes as soon as possible to enable them to accurately determine if any changes need to be made to work time, required special provisions, DBE goals, etc.**

3) After the authorization date, the LEAD will contact the Bureau of Office Engineer, Plans & Proposals Section, prior to submitting any revisions. **All bureaus, regions, etc., involved with providing flagged revisions, shall contact the lead on the project to ensure proper coordination of the submittal and the correct flag number within a change. Any incomplete or incorrect submittals will be rejected for proper correction.**

   a) All revisions within a change will have the same flag number. The numbered flag will be placed next to each revision on each affected sheet and in the lower right hand corner of the sheet with a description of the revision(s), the date of the revision(s), and the initials of the person making the revision(s). The description of the revision(s) should be detailed to explain the change(s) made; for example: quantities, items added or deleted, revised descriptions, note changes, detail changes, etc. Ensure that revised sheets are accurate and include previous data entered by the lead or the Bureau of Office Engineer. For example, a revised summary of quantities sheet should include the following data: construction fuel item description should include the dollar amount (e.g., $125,000.00); trainee hours should include the total number of hours, etc.

   b) Each set of revisions will be flagged accordingly on the Index to Sheets next to the corresponding sheet number(s), and in the lower right hand corner of the Index to Sheets with an annotation indicating which sheet(s) was revised, added or deleted, along with the date of the revisions and the initials of the person making the revisions.

c) The revised full-sized prints will be furnished to the Bureau of Office Engineer, Plans & Proposals Section, along with a letter explaining the revisions and requesting that the Bureau of Office Engineer furnish all prospective bidders with the revised plan sheets. The submittal shall include all flagged sheets including the Index to Sheets. If multiple ALDOT entities such as Bridge Bureau, Design Bureau, etc., are involved with providing flagged revisions, those entities shall coordinate with the lead the delivery of the revised sheet(s) and letter. The lead may provide the flagged revisions and the letter to a designated ALDOT entity in a manner so that all documents are furnished to the Bureau of Office Engineer, Plans & Proposals Section, as one complete submittal.

4) If revisions are required after the project is let to contract, follow through with the flagging process as outlined in section three ensuring coordination with the lead. Ten (10) half-size and seven (7) full-size prints of the revised sheets, including the flagged Index to Sheets, will be furnished to the State Construction Engineer with a letter describing the revisions, the reasons for them, and requesting the changes be distributed accordingly. In addition, the flagged, full-size sheets and a copy of the letter will be furnished by the lead to the Bureau of Office Engineer, Plans & Proposals Section, for inclusion in the original plan assembly to be stored in the Records Management Section as the permanent official record set. *Note: The Bureau of Office Engineer, Records Management Section, can be contacted to make available software to enable all users to view or print the official record set of plans.*

5) If a project has been withdrawn or rejected from a letting and has flagged revisions, the lead shall: remove all flags, provide any other corrections, and resubmit revised plan sheets to the Bureau of Office Engineer, Plans & Proposals Section, in a timely manner in order to meet the revised letting date.

RECOMMENDED FOR APPROVAL: Clay P. McBrien
STATE OFFICE ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

12-12-16
DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: THREE R PROJECTS, A GUIDE FOR PROPOSED 3-R IMPROVEMENTS

I. Roadway Widths

1. The combined shoulder and pavement width shall conform to the current ALDOT approved Edition of AASHTO'S "A Policy on Geometric Design of Highways and Streets".

2. A minimum of 24' (7.2 m) pavement width shall be constructed on all projects.

3. A portion of the shoulder width may be utilized to provide for 24'(7.2 m) pavement where AASHTO design recommends a 22'(6.6 m) pavement for low volume highways.
   Shoulder widths may be waived at locations with restricted right-of-way or other unusual limiting conditions.

4. Bridges will not be widened or replaced with 3-R Funds. A minimum bridge width of 22'(6.6 m) will be acceptable where the pavement is widened to 24'(7.2 m). Narrow bridge signs will be required for bridges with a deck width less than 24'(7.2 m) wide. Bridge improvements will be accomplished with BR Funding in a later contract.
   Guardrail will be upgraded at existing bridge ends and across the bridges where beam guardrail can be utilized.

5. Intersection improvements will be considered where there is a problem.
   Turn lanes may be constructed where the existing right-of-way will permit.

6. Channelization should be considered at business establishments where there is a heavy concentration of accidents.
   Curb may be used to provide channelizing islands to prevent vehicles from parking near the edge of pavement and restrict the entrance and exit conditions.
   Curb will not be used to curb off the entire right-of-way.

II. Alignment

1. A waiver to the requirements for the adjustment of the vertical and horizontal alignment that do not conform to the AASHTO criteria for the design speed of the highway will be requested, unless the accident data indicates a high concentration of accidents attributed to the alignment. Approval for this waiver will be requested from the FHWA on NHS projects or from the Chief Engineer on non-NHS projects.

   Consideration will also be given to providing signing for a reduced speed where the accident data reflects a problem and there is not sufficient right-of-way to correct the alignment.

III. Area Beyond Roadway Width

1. Steep front slopes, approved by the Materials and Tests Bureau, will be allowed to provide the roadway width as recommended in the AASHTO Manual.

2. Crossdrain pipe and culverts will only be extended as required to provide for the roadway width. Headwalls will be retained on existing crossdrain structures that will not require adjustment to obtain the roadway width.

3. Sidedrain pipe will be relocated as required to obtain the roadway width, and slope paved headwalls provided. Headwalls will not be replaced on existing sidedrain pipe that will remain in place. Consideration will be given to replacing large vertical headwalls that are close to the roadway and are a potential hazard.

4. Since the purpose of the 3-R projects is to provide a standard pavement and shoulder width for as many miles of roadway as possible, consideration will not be given to removing <u>all</u> obstacles within the clear zone.

REQUIREMENTS FOR 3-R SCOPE OF WORK REVIEWS

I. The Divisions will set up the Preliminary Engineering Funds for the project to be reviewed.

II. The Divisions will furnish the Design Bureau with a summary of the existing conditions and proposed improvements for the section to be reviewed.

Rev. 2/2012

The following items will be required:

Existing Conditions

1. An area map of the section of highway to be reviewed.
2. The design speed of the section to be reviewed.
3. Number and location of the existing horizontal and vertical curves that will not accommodate the design speed. The design speed of the existing sub-standard curves should also be included.
4. The accident data and collision diagram for the section of highway to be reviewed.
5. The width and type of existing pavement. The general condition of the existing pavement should also be included.
6. The width and type of existing shoulders.
7. A brief resume of the problem areas to be reviewed.
8. The width and condition of the existing bridges. The bridges should be identified by milepost, railroad or stream crossings.
9. The present traffic figures for the section of highways to be reviewed. The percentage of trucks should be included as a part of the traffic information.
10. A general statement concerning the length of the existing culverts and crossdrain pipe on the section to be reviewed. The location of the existing sidedrain pipe and sidedrain pipe headwalls in relation to the edge of pavement should be included.

Proposed Improvements

1. The proposed resurfacing and widening of the existing pavement. The resurfacing and widening layers should be as recommended by the Bureau of Materials and Tests. The justification for the proposed pavement should be included.
2. The proposed width and surfacing for the proposed shoulders.
3. The treatment proposed for the existing crossdrain pipe and culverts. The proposed relocation of sidedrain pipe and the replacement of sidedrain pipe headwalls should be included.
4. The proposed improvements for sub-standard vertical and horizontal curves or request a waiver. Justification should be included when waivers are requested.
5. The proposed improvements for intersections.
6. The proposed treatment for guardrail on bridges or at bridge ends.
7. The proposed channelization of traffic at business establishments where the accident data indicates there is a hazard.
8. Include recommendations for eliminating any unusual condition which may be considered extremely hazardous. Any item of this nature must be supported by the available accident data.

III. The Scope of Work as prepared by the Divisions shall be furnished to the Design Bureau to allow ample time for the scheduling of the Scope of Work Review, approval by the FHWA, if applicable, plan preparation, P.S. & E. Inspection, and have the plans completed 12 weeks in advance of the scheduled letting date.

IV. Representatives from the FHWA, if applicable, Design Bureau, Division, and Bureau of Materials and Tests will be present for the Field Review.

RECOMMENDED FOR APPROVAL: _____
STATE DESIGN ENGINEER

APPROVAL: _____
CHIEF ENGINEER/DEPUTY DIRECTOR

APRPOVAL: _____ _____
TRANSPORTATION DIRECTOR DATE

Rev. 2/2012

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: INTERSTATE 4R SAFETY IMPROVEMENTS

The following safety work should be included with the 4R resurfacing work.

Delineators must be in place, in accordance with the MUTCD, within the project limits, before the project can be accepted. This includes all ramps within the project limits regardless of whether work is being done on the ramps or not. The delineators may be included in the 4R projects or they must be installed by maintenance forces.

Guardrail and guardrail approach end treatment should be upgraded. This upgrading work may be deferred pending a large project for general safety upgrading. If the 4R project contains guardrail within the area of shoulder work that would necessitate moving guardrail, too low guardrail or too narrow shoulders, the guardrail must meet the latest standards and be accomplished within the 4R project. If a large safety project is being considered, a written schedule will be required at the time of the 4R project authorization request stating when the guardrail and other deferred work will be upgraded.

All curb within the shoulder area must be removed in conjunction with the 4R project. All curb, except safety curb, outside of the shoulder area should also be removed as a part of the 4R work, or be included in a scheduled major safety upgrading project.

Other features, inlets, etc., needing upgrading may be included in the larger general safety project unless they are identified by State accident records as being a cause of accidents. If any feature is identified as an accident or operational problem, it must be included in the 4R project.

The standard acceleration lane is 390 m which includes a 300 m parallel lane 3.6 m wide and a 90 m taper. Conformance to this standard will be determined during the Scope of Work review. Acceleration lanes that do not meet this standard should be upgraded.

The establishment of the new acceleration lane will basically be a bituminous operation. Very little, if any, grading work will be required. The paved shoulder will be used as the acceleration lane, using a narrow trench to establish any extra width needed.

Bridges will be considered on a site by site basis, based on accident history and other safety considerations. Consideration of the need for widening of bridges in association with construction of new acceleration lanes should be looked at during the scoping review, but any necessary bridge work will be by separate project.

In advance of each scoping review, the accident records for the particular project should be available. Particular emphasis should be given to the accident records on those bridges on the project that come at the end of existing acceleration lanes.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 4/14/95
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: USE OF ANCHOR LUGS AT BRIDGE/ROADWAY JOINING LOCATION ON JOINTED CONCRETE PAVEMENTS

All 4R rehabilitation projects involving jointed concrete pavement, new concrete pavement projects and bridge rehabilitation projects involving girder end repair where damage has been caused by expanding concrete pavement shall include anchor lug installation as a part of the project. The anchor lug design shall be considered as a part of the scoping reviews. Where structures are separated by 400′ (122 meters) or less, consideration may be given to using only one unit between the two structures.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF/ DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER/DEPUTY DIRECTOR

APPROVAL: _____ 8/11/2010
TRANSPORTATION DIRECTOR DATE

Rev. 6/2010

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: PRELIMINARY DESIGN OF EARTHWORK

The following method should be utilized in determining preliminary earthwork quantities.

1. Each soil type in the cut section or borrow pit will be assigned a shrinkage/swell factor.
2. Shrinkage/swell factor will be based on unclassified excavation.
3. Earthwork computations utilizing these factors will be accomplished by shrinking or swelling the raw volume of material in the cut or borrow pit and distributing this adjusted volume to the embankment areas.
4. Attached to this guideline is the method to be used in compiling the factors and the schedule for submittals.

Method for Implementation

For the method of earthwork distribution to be adhered to see Exhibit A. This method of earthwork distribution is desirable; however, should a project be initiated which does not lend itself to the method described herein, then other methods of formatting these results shall be developed and approved by the Design Bureau.

The above described method will be implemented when preliminary plans are developed to include the following:

a. Title Sheet
b. Typical Section Sheets
c. Plan and Profile Sheets, including all topo
d. Grades established on main roadway and connecting roads
e. Paving Layout Sheets, if needed
f. Cross Sections

Following development of an initial profile, preliminary prints are then to be forwarded to Materials and Tests Engineer with a specific request for preliminary shrinkage or swell values based on knowledge and judgement of the area under consideration.

After earthwork has been preliminarily balanced based on above factors, transmit prints to Materials and Tests Engineer for soil report (borings), soils profile showing shrinkage/swell values and special studies, if any.

A more rigorous attempt at balancing earthwork will then be made after receipt of the soils information utilizing the shrinkage/swell values for the individual layers. If significant grade changes are made in this balancing effort such that "new" cut areas are required or if cut depths have changed to be below those bored for the soils profile, a set of plan, profile, and cross sections should again be transmitted to the Materials Bureau advising them of the changes.

The design plan assembly up through the P.S. & E. Inspection will include the soils profile information, cross sections depicting the assumed material layer elevations, and an earthwork summary that shows how each distinguished material layer was shrunk or swelled in order to obtain the earthwork quantities. After the P.S. & E. Inspection, this information will be removed from the plan assembly but will be retained in the file for further reference.

The as-let plan assembly will contain the soils boring log information, tabulated volumes of cut/fill and topsoil on cut and fill, and volume of unsuitable material. The soils profile will not be included. The cross sections will show the proposed finished grade template, subgrade and any unsuitable material layers. The cross sections will not show any other assumed elevations of material layers or rock layers.

The earthwork summary will show the quantity of unclassified excavation, borrow excavation, muck excavation, topsoil, and topsoil from stockpiles. The assumed shrinkage/swell values will not be included in the as-let plans. The Designer will need to retain the files regarding earthwork quantity calculation until after the construction is complete.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 12/19/96
TRANSPORTATION DIRECTOR DATE

EXHIBIT A

METHOD FOR EARTHWORK DISTRIBUTION

	0+00 to 1+00	1+00 to 2+00	2+00 to 3+00	3+00 to 4+00	TOTAL
Cut	862	1258	1781	8750	12651 m³
(-) T. S. on cut	88	150	170	50	458 m³
(-) Muck on cut		178			178 m³
Available cut	774	930	1611	8700	
*(-) Less shrinkage or (+) plus swell	-25%	-15%	+30%	+10%	
	-194	-140	+483	+870	
TOTAL EXCAVATION (available for fill sections)	580	790	2094	9570	
TOTAL EMBANKMENT	1848	1678	3629	6553	
	674 borrow			borrow	*674 m³
Fill	1560	1143	3001	6151	
(+) Muck beneath fill		80	250		330 m³
(+) T. S. beneath fill	288	455	378	402	1523 m³
Stations	0+00	1+00	2+00	3+00	4+00

Begin Project Station 0+00

End Project Station 4+00

580 594 790 888 2094 1535 6553

Rev. 12/96

3-11.2

PAY ITEMS

14174 m³ Unclassified Excavation
508 m³ Muck Excavation
*899 m³ Borrow Excavation
1981 m³ Topsoil from Stockpiles

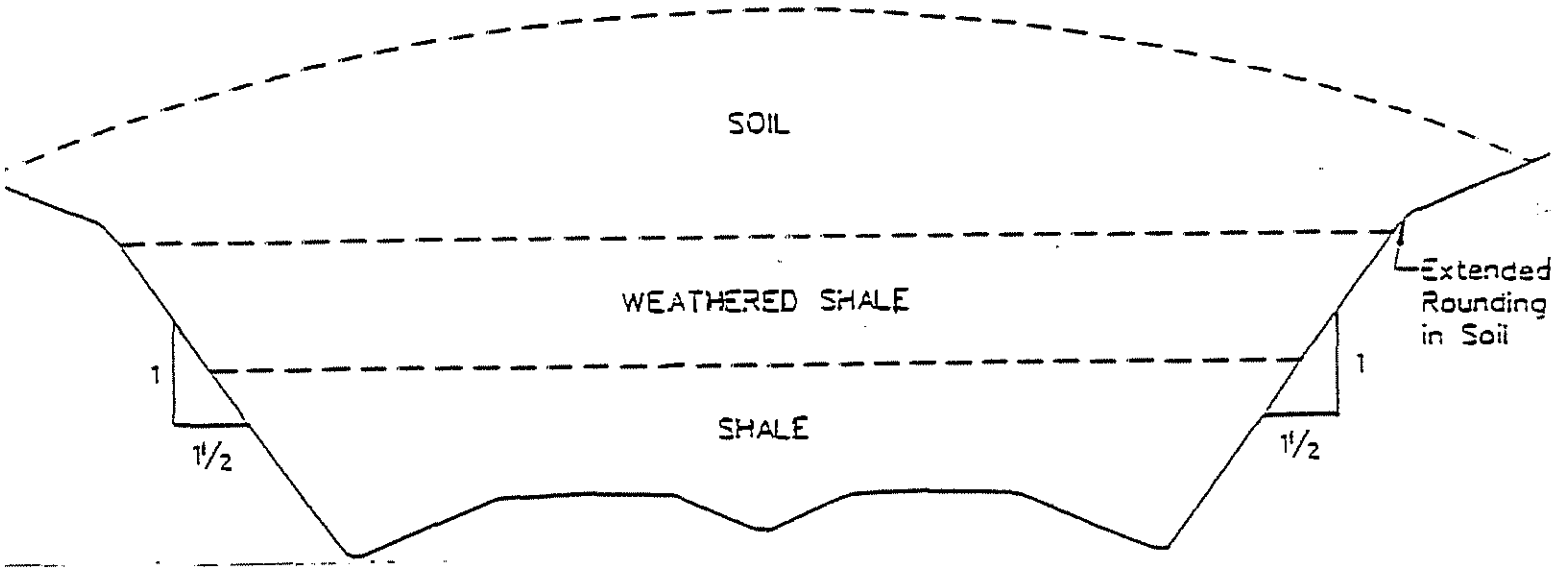
*From Bureau of Mate[illegible] and Tests
*See Sheet Number 3-11.3

EXHIBIT A

EARTHWORK SUMMARY SHEET IN THE PLANS

Unclassified Excavation:	Topsoil beneath fill	=	_____	m^3
	Cut _____	=	_____	m^3
Total Unclassified Excavation:			_____	m^3
Borrow Excavation:			_____	m^3
Muck Excavation:	Muck on cut	=	_____	m^3
	Muck beneath fill	=	_____	m^3
Total Muck Excavation:			_____	m^3
Topsoil from Stockpiles:	Topsoil on cut	=	_____	m^3
	Topsoil beneath fill	=	_____	m^3
Total Topsoil from Stockpiles:			_____	m^3

EXAMPLE



Given: Soil Shrinks 20%
Weathered Shale Swells 5%
Shale Swells 15%

Figure 1

Procedure

1. Prepare sufficient cross-sections as in figure 1 to represent entire cut.
2. Estimate volume in entire cut. Subtract topsoil on cut to obtain available cut.
3. Utilizing soil boring log, estimate volumes of soil, weathered shale, and shale.
4. Obtain representative shrinkage/swell values from soils profile and materials report.
5. Apply formula to find total material available for use in embankment.

Entire volume in cut		100,000 m^3
Topsoil on Cut	=	5,000 m^3*
*stockpile for later use		
Soil Volume	=	40,000 m^3
Weathered Shale Volume	=	25,000 m^3
Shale	=	30,000 m^3

Total Material Available for Embankment

= Soil Volume (1 − % shrink) + Weathered Shale (1 + % swell) + Shale (1 + % swell)

= 40,000 (1 − .20) + 25,000 (1 + .05) + 30,000 (1 + .15)

= 32,000 + 26,250 + 34,500

= 92,750 m^3 available for embankment

BORROW EXCAVATION

Note: Shrinkage/Swell factors as obtained from Bureau of Materials and Tests.

Note: Method for determining borrow excavation needed from borrow pits.

$$X - AX = B$$

$$X = \frac{B}{1-A}$$

X = Amount needed from borrow pits

*A = Shrinkage/Swell factor (input swell as negative)

B = Absolute amount of fill needed

*Shrinkage Condition

Given A = 25%

B = 674

Find X

$$X - AX = B$$

$$1X - .25X = 674$$

$$.75X = 674$$

$$X = \frac{674}{.75} = 899 \text{ m}^3$$

*Swell Condition

Given A = 25%

B = 100

Find X

$$X - AX = B$$

$$1X - (-.25X) = 100$$

$$1X + .25X = 100$$

$$1.25\ X = 100$$

$$X = \frac{100}{1.25} = 80 \text{ m}^3$$

Method of Determining Shrinkage/Swell Factors For Use in Earthwork Quantity Calculations

Introduction

When soil is excavated, hauled, and compacted into an embankment, the final volume of the compacted soil is usually less than when it was in-situ or in its natural state. This difference in volume is usually defined as "shrinkage". In estimating earthwork quantities, it is necessary to make allowances for this factor. The amount of shrinkage varies with the soil type. Shrinkage factors of 15 to 20 percent are typical, but shrinkage may be as high as 40 or 50 percent for some soils.

Rock will swell when excavated and broken and will occupy more space than rock in solid form due to the increase in void spaces. Increases up to 25 percent of the original volume are common, but swell may be as high as 40 percent for some rocks.

In short, the shrinkage/swell factor is the value (expressed as a percentage) which compensates for variation in density of in-situ (in-place) material from cut (or borrow pit) to compacted embankment.

The shrinkage/swell values can be determined by measurements for each different type of material found on the project by laboratory tests such as the shrinkage ratio, shrinkage limit, and field moisture equivalent. These tests are used to calculate the natural field density of each type soil encountered in cut sections or borrow areas. This natural field density is then compared with the Proctor density to obtain the shrinkage/swell value for that particular soil type. However, this detailed method is seldom feasible and representative values or estimated values are used. The following is the recommended method for utilizing shrinkage/swell values in earthwork quantity calculations.

Procedure

1. Obtain soil profile - This soil profile should include sufficient borings to construct full soil cross-sections at maximum intervals of 150 m through cut sections. This will be done by boring at the approximate locations of the left ditch, centerline, and right ditch. Additional borings will be taken at 60 m intervals so that the soil/rock line may be approximated. In borrow areas, the boring grid should be such that soil cross-sections can be obtained.

2. Using the above soil cross-sections and borings the Division Materials Engineer will assign a shrinkage/swell value to each significant, identifiable material type on the project. These material types should be grouped with other materials that have similar shrinkage/swell values. The material types should be distinguished from each other when their individual shrinkage/swell value will have a significant impact on the earthwork quantity calculations.

The Division Materials Engineer will prepare a soils profile with the assumed shrinkage/swell values for the use of the Designer and also will prepare the soils boring log for inclusion into the plans.

Obviously a large number of grading projects, especially those in the Sixth, Seventh, Eighth, and Ninth Divisions, will contain no rock. It is felt that the shrinkage factors for soils in this case can best be estimated from experience and available historical data. Each Division Materials Engineer should have a record of the estimated shrinkage factor in the soils report for individual projects. This value should be compared to the actual quantities used on a project and any necessary corrections should be made. When comparing these quantities, care should be taken to determine if the slopes and other aspects of the earthwork shown in the plans were the same as those actually constructed. This will allow for a much better estimate of a shrinkage factor for nearby projects in the future.

Extreme caution should be exercised when re-evaluating the shrinkage factors of the various soil types present in an area based on previous construction projects. In the past, discrepancies have arisen between estimated quantities of earthwork for distribution and actual quantities distributed due to use of erroneous shrinkage/swell factors.

The shrinkage/swell factor that the Division Materials Engineer reports in the soils write-up is based on unclassified excavation.

References for Calculation of Shrinkage and Swell Factors of Earthwork

1. Kentucky Department of Highways, Division of Materials, "Manual of Instruction for Soils Consultants", March, 1969, Section V, Procedure for Computing the Soil Shrinkage Value.
2. Ritter, L.J., Jr., and Paquette, Highway Engineering, 3rd Edition, The Ronald Press Company, 1979, page 336.
3. Woods, K.B., Berry, D.S., and Geote, William H., Highway Engineering Handbook, 1st Edition, McGraw-Hill Book Company, 1960, p. 14-4.
4. AASHTO, "Manual on Foundation Investigations 1978", AASHTO Copyright 1967 and revised April, 1978, Part V, Compiling Information.
5. Kentucky Bureau of Highways, "Geotechnical Manual", February 1978, Chapter 64-03.07 - Geotechnical Investigation and Report Development.

Appendix A

Range of Shrinkage/Swell Factors for Various Soil/Rock Types

	% Shrinkage	% Swell
Massive, Hard, durable sandstone, limestone and metamorphic, and igneous rocks	_____	25-35%
Unweathered shale	_____	15-20%
Weathered shale, metamorphic and igneous rocks (rippable)	_____	5-15%
Friable sandstone (breaks up under construction equipment)	_____	0-10%
Chert and cherty clay (depends greatly on chert content)	0-10%	0-10%
Soil*	10-25%	

* It is felt that the best method to determine soil shrinkage methods is to consult already available data. The shrinkage factor recommended for a project can be checked by comparing estimated plan earthwork quantities with the as-constructed quantities. This comparison should be made for various areas in a Division and the originally recommended factor can be adjusted (if necessary) for future projects in that area. Actually, this comparative procedure should also be used for projects where rock is encountered.

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: REMOVAL OF OLD FILL MATERIAL ON RELOCATED ROADWAYS

The practice of requiring the contractor to initially construct steep fill slopes on relocated roadways and later flatten them using the material from the old fill after traffic has been removed, may be costing the State unnecessary dollars. It may be more economical, at least in some cases, to construct the new fill, where it does not interfere with traffic, to completion at the outset, and to waste the material from the old roadbed.

On projects of this type, it is requested that the disposition or use of the old fill material to be left to the discretion of the contractor so long as all other construction requirements are met.

RECOMMENDED FOR APPROVAL: J. F. Carraway
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: Tom Espy, Jr.
CHIEF ENGINEER

APPROVAL: Royce G. King 5/20/88
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: CONTINGENCY PAY ITEMS IN LIMESINK PRONE AREAS

The U.S. Geological Survey has completed a research project with the Alabama Highway Department in which the known sinkholes (limesinks) and sinkhole prone areas in Alabama were delineated. This project resulted in the publication of 40 county maps showing this information. The counties for which sinkhole maps have been prepared are shown on the attached index map. These counties can be divided into two groups, a northern group and a southern group. The bedrock underlying the sinkholes in the northern group will probably occur relatively close to the surface, while in the southern group this will not often be the case due to the differences in the geologic setting between the two areas.

With the individual county sinkhole maps it is possible to determine at an early stage in the planning of any given project that what the likelihood is of encountering sinkholes. While these maps obviously do not show every sinkhole in the state they can be used as a guide to areas where such features will likely occur.

It is therefore recommended that whenever a proposed project is within the northern area where sinkholes may occur, individual county sinkhole maps should be consulted to determine a need for contingency pay items to be included in the contract for that project for correction of sinkholes; as per Section 224, Standard Specifications for Highways and Bridges, and the Special Limesink Treatment drawing prepared by this Bureau. In this way if sinkholes are encountered during the construction of a project the pay items will already have been established and construction will not be stopped or slowed down more than necessary.

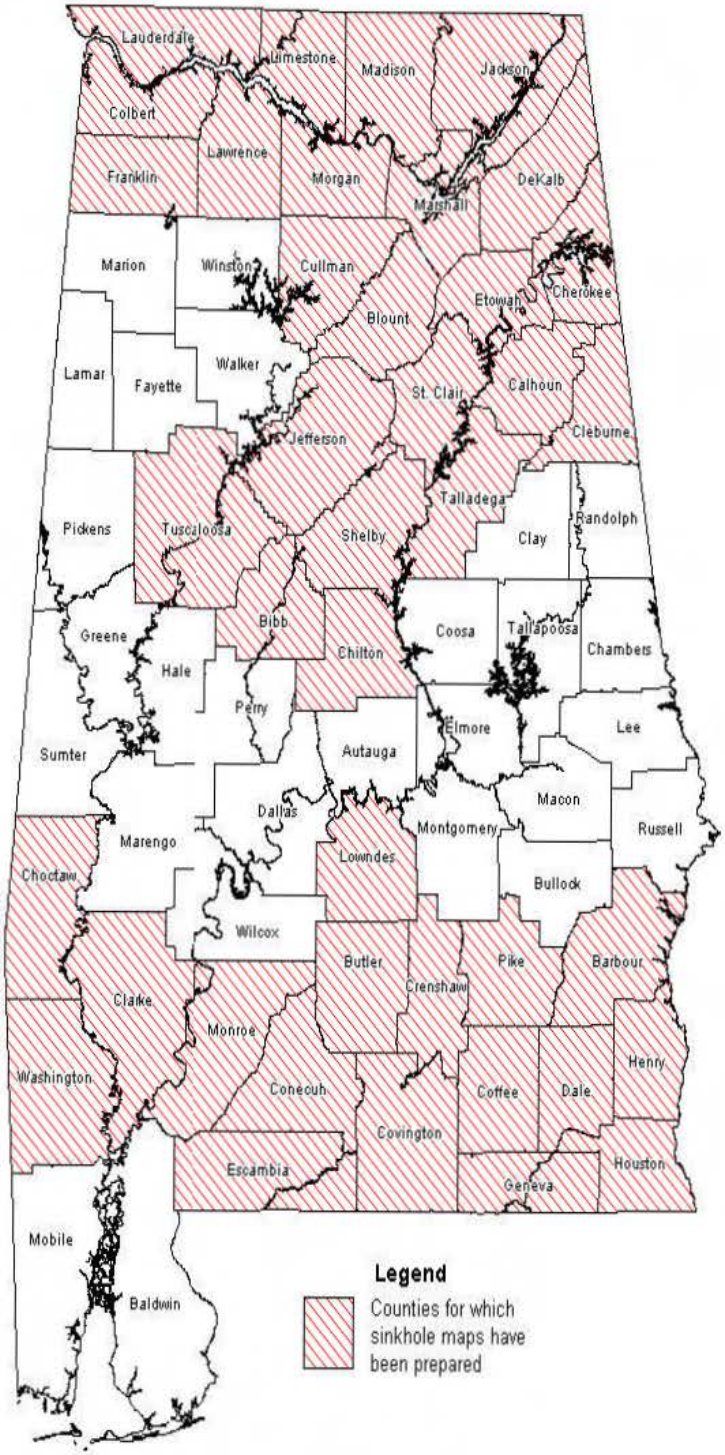
This will in no way bypass or replace the existing policy of reconnaissance of sinkholes encountered during surveying or construction of a project by personnel of the Geotechnical Section, but is merely to aid in contract formulation.

RECOMMENDED FOR APPROVAL: _____Larry Lockett_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

Index to Sinkhole Maps



ALABAMA
DEPARTMENT OF TRANSPORTATION
GUIDELINES FOR OPERATION

SUBJECT: UTILITY RELOCATION

The Department often participates in the construction of highways, roads and streets that are not part of the state highway system. If utilities are present on these projects and are located under the roadway prism, the Department may choose to allow those utilities to remain in their existing locations, if the construction of the highway project would not damage the utilities and the relocation costs are not deemed to be a cost effective use of highway funds.

The Region Engineer will determine whether existing utilities require relocation and recommend to the State Utilities Engineer for approval the retention of utilities if warranted.

If it is determined by the Department that the utilities should remain in place, the local highway agency may choose to relocate the utilities with their funds or their attributable federal funds.

RECOMMENDED FOR APPROVAL: Steven E. Walker
BUREAU CHIEF

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

6/15/15
DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: CALCULATION OF PLAN QUANTITIES FOR TACK COAT

Pay Item 405A, Tack Coat

For maintenance resurfacing projects, the plan quantity for Pay Item 405A, Tack Coat, should be calculated at the rate of 0.10 gallons per square yard. For new construction and when tack will be placed on new, freshly laid pavement, the plan quantity should be calculated at the rate of 0.08 gallons per square yard. These rates should be utilized when the use of emulsified asphalt for tack is anticipated. If the contractors in the vicinity of the project historically use PG asphalt binder for tack, these rates should be reduced to 0.06 gallons per square yard and 0.05 gallons per square yard, respectively.

Pay Item 420B, Open Graded Friction Course Tack Coat

The plan quantity for Pay Item 420B, OGFC Tack Coat, should be calculated at the rate of 0.18 gallons per square yard.

RECOMMENDED FOR APPROVAL: _____
STATE CONSTRUCTION ENGINEER

RECOMMENDED FOR APPROVAL: Steven E. Walker
STATE DESIGN ENGINEER

APPROVAL: _____
DEPUTY DIRECTOR, OPERATIONS

APPROVAL: _____ Sept. 18, 2017
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: SHOULDER TREATMENT

The purpose of this is to set forth guidelines on shoulder treatment on the State Highway System of Alabama other than Interstate.

There shall be three (3) acceptable methods of treating highway shoulders. They are:

1. Pave 8' (2.4 m) and stabilize the remaining shoulder width.

2. Pave 4' (1.2 m) and stabilize the remaining shoulder width.

3. Stabilize full width of shoulder.

CONSIDERATION MAY BE GIVEN TO METHOD ONE ON:

a. Highway projects which are a part of a general route improvement where segments of that route have been constructed with paved shoulders on both sides of that project, but not necessarily adjacent to that project.

b. Specially funded projects which are not in financial competition with other projects in Alabama.

c. On any two-lane project with a current ADT greater than 2500 except for bridge replacement projects, 3-R projects, or other spot improvements on highways which currently do not have paved shoulders.

d. On any four-lane project with a current ADT greater than 5500 except for bridge replacement projects or other spot improvements on highways which currently do not have paved shoulders.

e. Highway projects traversing topographic conditions that will encourage high use of shoulders, regardless of current ADT.

f. Non-Interstate highway projects involving full access control.

On all projects with paved shoulder widths greater than 4' (1.2 m) consideration shall be given to providing on the outside shoulder a surface textured treatment only to the inner portion of the

paved shoulder. Where scoring is used to provide a textured surface, a single pass of the machine on the inner edge of the shoulders will be sufficient. On shoulders where a "G" treatment is used, its width should be 4' (1.2 m).

CONSIDERATION MAY BE GIVEN TO METHOD TWO ON:

a. Any two-lane project with a current ADT greater than 1800 except for bridge replacement projects, 3-R projects, or other spot improvements on highways which currently do not have paved shoulders.

b. Any four-lane project with current ADT greater than 4000 except for bridge replacement projects or other spot improvements on highways which currently do not have paved shoulders.

c. Any two-lane or four-lane project which does not meet the ADT requirements above but which has 18% or greater trucks.

METHOD THREE SHALL BE USED ON ALL OTHER PROEJCTS NOT USING ONE OR TWO:

With the above methods, the following is understood.

1. Turf shoulders established on compacted granular soil are considered stabilized shoulders.

2. On four-lane highways where paved shoulders are warranted, the inside shoulders may be paved a width of 4' (1.2 m).

3. On highways which have more than four traffic lanes, other than auxiliary lanes, Consideration may be given to paved shoulders.

RECOMMENDED FOR APPROVAL: _____
STATE DESIGN ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 6/13/2016
TRANSPORTATION DIRECTOR DATE

Rev. 5/2016

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: HYDRAULIC DATA FOR PAVEMENT REHABILITATION AND WIDENING PROJECTS

It will not be necessary to show the hydraulic data or analyze the existing drainage structures that are to be extended on resurfacing projects. Unless there is a history of flooding or some indication that the existing structure is undersized. Consideration should be given to replacing structures that have a history of flooding the roadway or the adjacent properties. The standard hydraulic data should be shown on the plans for structures to be replaced.

Widening projects, other than incidental widening such as a turn lane or shoulders, should be checked for hydraulic adequacy. If the original analysis is available, the check would be limited to determining if the factors used are still valid.

The Divisions should furnish a letter for widening and resurfacing projects, advising the Design Bureau that the drainage for a project has been reviewed. The location and proposed improvements for inadequate drainage structures should be specified in the letter. If there are no existing drainage problems or history of flooding, it should be indicated in the letter.

RECOMMENDED FOR APPROVAL: Don T. Arkle
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: Ray D. Bass
PRE-CONSTRUCTION ENGINEER

APPROVAL: M. Roberts 3/30/94
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: LONGITUDINAL EDGE DRAINS

Longitudinal aggregate filled underdrains should be used only where conditions warrant, not as a general rule on all projects.

RECOMMENDED FOR APPROVAL: _____Larry Lockett_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: OUTLET DRAINS AT BRIDGE ENDS

CCS-PI pipe should be used for shoulder drain outlets at bridge ends instead of concrete flumes where sealed bridge end joints are used.

RECOMMENDED FOR APPROVAL: _____J.F. Carraway_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

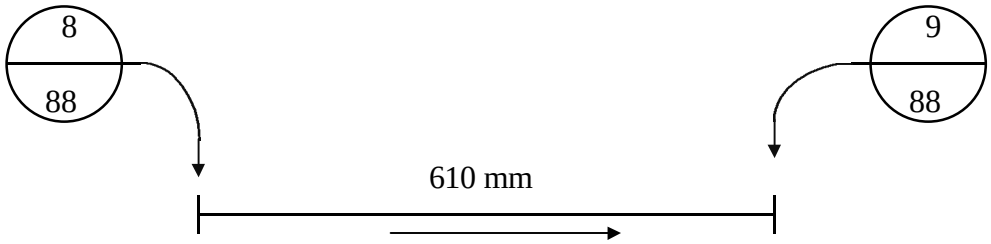
HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: DRAINAGE WRITE-UP LOCATION FOR PLAN PREPARATION

The following guideline is to be used in placing drainage information on plans in urban areas or areas where placing topo and drainage requirements together tend to clutter and make the sheets difficult to read.

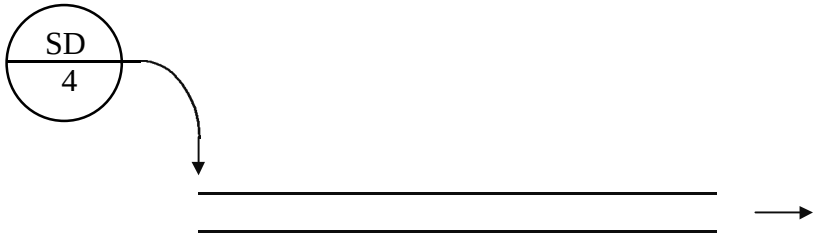
"Drainage structure write-ups are not to be shown on Plan, Profile, Paving Layout, Special Detail and Utility Sheets. The drainage structure write-ups should be shown on the Drainage Section sheets. Symbols for the drainage structure should continue to be shown on all appropriate sheets, showing size and direction of flow and using index numbers for each end, with index numbers assigned by direction of flow.



EXAMPLE

The top number (Example 8 or 9) is the Drainage Structure Index Number and the bottom number (Example 88) is the Drainage Section Sheet Number. The numbers on the Drainage Section Sheets should reflect the Drainage Structure index number in the upper-half of the circle and the Plan-Profile Sheet number in the lower-half of the circle."

"Side Drain Pipe should not be written up on Plan, Profile, Paving Layout, Special Detail or Utility Sheets. They should be indexed on these sheets and all information concerning their disposition should be shown in a box sheet.



SIDE DRAIN EXAMPLE

The top letters (Example SD) are for the Side Drain and the bottom number (Example 4) is the Drainage Structure Index Number."

RECOMMENDED FOR APPROVAL: _____Don T. Arkle_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Ray D. Bass_____
PRE-CONSTRUCTION ENGINEER

APPROVAL: _____M. Roberts_____ _____8/18/93_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: PRECAST AND CAST-IN-PLACE BOX CULVERT ALTERNATES

Alternate designs for precast box culverts will be offered for all sites with the following requirements:

1. Bridge size culverts – Alternates for precast culverts will be permitted. Precast culverts may be excluded if after the site inspection by the Bridge Bureau it is determined using precast will be undesirable. A letter of justification for exclusion of the precise alternate will be required for approval by the Chief Engineer's Office.

2. For culverts less than bridge size – A precast alternate will be permitted. The designer may exclude the precast alternate if, at the plan in hand inspection, the precast alternate is deemed to be undesirable. A letter to exclude the alternate must be prepared and approved by the Chief Engineer's Office.

3. The exclusion of the precast alternate approval letter must document and show it undesirable based on the following considerations:

   a. Soil erodability
   b. Stream bed slope
   c. Water velocity
   d. Culvert skew
   e. Fill height
   f. Size opening required
   g. Availability

4. Precast culverts may be <u>designated</u> when traffic handling situations might govern.

RECOMMENDED FOR APPROVAL: Steven E. Walker
BUREAU CHIEF / DIVISION ENGINEER

APPROVAL: Al W Vaughn
CHIEF ENGINEER

APPROVAL: D M Tyson
TRANSPORTATION DIRECTOR

3/31/06
DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: SELECTION OF TYPE OF ROADWAY PIPE

It shall be the intent of the Alabama Department of Transportation to use only concrete pipe for roadway pipe installations, including pipe extensions on all roads which comprise the State Highway System. Where "stack pipe" is required to connect inlets to junction boxes, 14 gauge, CCS, roadway pipe will be used. Where "wrap-around" pipe is required to handle median drainage down the fill slopes, 14 gauge, CCS paved invert roadway pipe will be used.

For round storm sewer system pipes, Exhibit A provides the Alabama Department of Transportation determination of the hydraulic equivalency of alternate pipe materials. The design shown in the plans will be based on concrete pipe. If an alternate pipe type is allowed by specification, the size of the alternate pipe type supplied shall be determined based on the hydraulic equivalency in the Exhibit.

For projects on which alternate pipe types are allowed, sampling will be conducted at each location where cross-drain pipes are proposed. This sampling shall be carried out by Area personnel as early in the planning stages as is practical. The sample shall consist of 1 liter of water (if water is available at the site), and approximately 4 liters of soil (taken from the edge of the stream, or the lowest elevation if area is dry). These items must be transported to the Bureau of Materials and Tests the day they are collected.

The samples will be analyzed for conductivity, resistivity, pH, chlorides and sulfates. Results will be forwarded to the Area Materials Engineer. This information will then be included in the materials write-up for the project along with pipe type as determined by the limits set forth herein.

An investigation will be conducted by Area personnel of existing drainage structures in similar geological areas to determine their age and condition. This should include evaluations of potential abrasion, pollution and other physical factors which might affect the drainage structure. Written documentation of this investigation should be included in the materials write-ups for the project.

Analyses of the soil and water shall be conducted by the following:

PARAMETER	TEST METHOD	
	Soil	Water
Resistivity	AASHTO T 288	None
pH	AASHTO T 289	EPA Test Method 150.1
Chloride	AASHTO T 291	EPA Test Method 325.3
Sulfate	California DOT 417	EPA Test Method 375.4
Conductivity	None	EPA Test Method 120.1

Criteria for roadway pipe:

Pipe Type	pH	Resistivity	Chloride	Sulfate	Abrasion Resistance
Galvanized steel or Aluminum	>10	>3000Ω•cm	<50 mg/L	<100 mg/L	Mild
Bituminous Coated Galvanized Steel or Aluminum	5-10	>3000Ω•cm	<50 mg/L	<100 mg/L	Moderate
Bituminous Coated Galvanized Steel with Paved Invert	5-10	>3000Ω•	<50 mg/L	<100mg/L	Moderate to Good
Aluminized Steel	5-9	>1500Ω•cm	<50 mg/L	<100 mg/L	Moderate
Plain Concrete or Reinforced Concrete	May be used in all situations. If pH is below 4, a special coating is required.				

In areas with apparent abrasion or erosion of the structure due to water laden with sand, gravel or stone, protection should be provided such as a paved invert or other method. Also, reduction of the bedload upstream of the structure should be considered.

On low volume (250 ADT or less) secondary roads, uncoated structural pipe may be allowed for use in the limits for coated pipe.

Note: On-site historical information and other data may also be used in this determination.

RECOMMENDED FOR APPROVAL: Steven E. Walker
STATE DESIGN ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____
TRANSPORTATION DIRECTOR

August 24, 2017
DATE

Rev. 7/2017

EXHIBIT A

HYDRAULICALLY EQUIVALENT ROUND STORM SEWER SYSTEM PIPE SIZES

	Concrete Pipe	HDPE Type S Pipe	HDPE Type S Pipe	HDPE Type C Pipe	Corrugated Metal (CMP)							PVC Pipe	Concrete Pipe
										Structural Plate			
							(Steel)	(Alum.)	Spiral Rib	(Steel)	(Alum.)		
Corrugations in.		Fill Hts<= 10'	*Fill Hts > 10'*		*2-2/3 x 1/2*	*3 x 1*	*5 x 1*	*6 x 1*	*All*	*6 x 2*	*9 x 2-1/2*		
Design N Value	*0.012*	*0.014*	*0.015*	*0.025*	*0.025*	*0.028*	*0.026*	*0.025*	*0.014*	*0.035*	*0.035*	*0.011*	*0.012*
Pipe Sizes in.	12	15	15	18	18				15			12	12
	15	18	18	24	24				18			15	15
	18	24	24	30	24	30			24			18	18
	24	30	30	36	36	36	36		30			24	24
	30	36	36	42	42	42	42		36			30	30
	36	42	42	54	48	54	54	48	42	60	60	36	36
	42	48	48	60	60	60	60	60	48	66	66	42	42
	48	54	60		66	66	66	66	54	78	78	48	48
	54	60			72	78	78	72	60	84	84		54
	60				84	84	84	84	66	96	96		60
	66					96	90	90	72	102	102		66
	72					102	102	96	78	114	114		72
	78					108	108	108	84	120	120		78
	84					120	114	114	90	132	132		84
	90					126	126		96	138	138		90
	96					132	132		102	150	150		96
	102					144	138		114	156	156		102
	108								120	168	168		108
	114								126	174	174		114
	120								132	180	180		120
	126								138	192	192		126
	132								144	198	198		132
	138									210	210		138
	144									216	216		144
	150									228	228		150
	156									234	234		156
	162									246	246		162
	168									252	252		168
	174									264	264		174
	180									270	270		180
				For cross drain pipes do an analysis with the N Factor given									
				Concrete pipe with the socket end left on (not cut off) will have a much lower entrance head loss than thin walled pipe.									
				Flowlines cannot be changed to obtain cover if an equivalent sized pipe is selected.									
				Some pipe sizes are not shown because a smaller pipe size is equivalent to the concrete pipe.									
				Flowline changes will require a redesign of the system.									

Pipe sizes on a horizontal row will carry at least as much flow as the concrete pipe size, but not as much flow as any pipes on the next lower horizontal row.

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: TITLE SHEET SIGNATURE BLOCKS

The title sheet for all plans shall include a signature block including "Submitted for Approval" by the Chief of the lead agency. This signature block is in addition to the current required signature blocks for the Chief Engineer and the Transportation Director.

RECOMMENDED FOR APPROVAL: _____
STATE DESIGN ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 6/13/2016
TRANSPORTATION DIRECTOR DATE

Rev. 5/2016

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: SPECIAL DRAWINGS TO BE USED FOR END TREATMENT ON CROSS DRAIN AND SIDE DRAIN PIPE

GUIDELINE ON CROSSDRAIN PIPE FOR CONSTRUCTION AND MAINTENANCE

For pipe ends within the clear zone, use slope paved headwalls with beveled end cut. When slope paved headwalls are used, a grate will be required for pipe greater than 30" (750 mm) in diameter. Slope paved headwall or flared end sections, without grates may be used in the clear zone when they are shielded from traffic by physical barriers.

For pipe ends outside the clear zone, alternate end treatments of slope paved headwall or flared end sections will be allowed. Grates will not be required regardless of size of pipe. Conventional headwall end treatment may be used in special cases.

GUIDELINE ON SIDEDRAIN PIPE FOR CONSTRUCTION AND MAINTENANCE

For pipe locations within the clear zone, use slope paved headwalls with beveled end cut. Grates will be required for pipe within the clear zone that are greater than 24"(600 mm) in diameter. For pipe locations outside the clear zone, alternate end treatments of slope paved headwall or flared end sections will be allowed. No grates will be required for pipe located outside of the clear zone.

On two lane roadways the same end treatment will be given to both ends of pipe.

On four lane roadways place grates on traffic approach end only.

A maximum 6:1 slope will be used on pipe cuts within the clear zone. For the purpose of maintenance permits, the slope may be steepened to 3:1 on routes constructed to earlier design standards where constructing a slope of 6:1 would be impractical due to existing slope or ditch and elevation conditions at and around the proximity of a driveway.

The chart below indicates the complete range of usage of all of the drawings available for pipe end treatment on cross drain and side drain pipe.

CONDITION

Special Drawing No.	Side Drain Inside Clear Zone	Side Drain Outside Clear Zone	Cross Drain Inside Clear Zone	Cross Drain Outside Clear Zone	MEDIAN CROSSOVER (4 LANE+)
FE-619	(6) (8)	(2)	(6)	(2)	
HW-614-B			(3)	(2)	
HW-614-SP	(5)	(2)	(1)		(7)

(1) May be used on roadway pipe under intersecting side roads using sidedrain requirements.
(2) No grates required.
(3) Grates required for pipe greater than 30"(750 mm) in diameter.
(4) For use in special cases.
(5) Grates required for pipe greater than 24"(600 mm) in diameter.
(6) May be used inside clear zone when shielded from traffic by physical barriers. No grates will be required, regardless of pipe size.
(7) Grates required for pipe larger than 24"(600 mm) in diameter, pipe end treatment slopes shall be 1:10 regardless of pipe size.
(8) May be used inside clear zone for maintenance permits where 3:1 slope is allowed as previously stipulated. Grates required for pipe larger than 24" (600 mm) in diameter.

RECOMMENDED FOR APPROVAL: _____
CHIEF, DESIGN BUREAU

RECOMMENDED FOR APPROVAL: _____
MAINTENANCE ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 7/27/2004
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: BRIDGE VERTICAL CLEARANCE FOR HIGHWAY GRADE SEPARATIONS NEW CONSTRUCTION AND CRITERIA FOR RAISING EXISTING BRIDGES

NEW CONSTRUCTION

Interstate System and State Routes

The preferred minimum vertical clearance shall be 17'-0'' from edge of travel lane to edge of travel lane and in no case shall be less than 16'-3'' from edge of paved shoulder to edge of paved shoulder. Designs proposing a vertical clearance of less than 16'-3'' over the travel lanes shall have the approval of the Chief Engineer.

City Streets and County Routes

The preferred minimum vertical clearance shall be 17'-0'' from edge of travel lane to edge of travel lane and in no case shall be less than 14'-3'' from edge of paved shoulder to edge of paved shoulder. Designs proposing a vertical clearance of less than 14'-3'' over the travel lanes shall have the approval of the Chief Engineer.

Sign Bridges and Pedestrian Overpasses:

The minimum vertical clearance shall be 18'-0'' from edge of paved shoulder to edge of paved shoulder. Designs providing less than 18'-0'' minimum vertical clearance shall have the approval of the Chief Engineer.

RAISING EXISTING BRIDGES

Existing Bridges over Interstate Routes

When projects exist for pavement rehabilitation and/or adding lanes, bridges within the project limits shall be raised when the resulting minimum vertical clearance is less than 16'-0'' at the edge of paved shoulder, inside or outside, or less than 16'-0'' across the width of the travel lanes.

Rev. 4/2014

Bridges shall be raised to achieve a minimum of 17'-0'' vertical clearance across the travel lanes and a minimum of 16'-3'' vertical clearance at the edge of paved shoulder after completion of pavement rehabilitation and/or lane addition(s).

Existing Bridges over the State System

When projects exist for pavement rehabilitation and/or adding lanes, bridges within the project limits shall be raised when the resulting minimum vertical clearance is less than 16'-0'' across the width of the travel lanes.

If feasible, bridges shall be raised to achieve a minimum of 17'-0'' vertical clearance across the travel lanes after completion of pavement rehabilitation and/or lane addition(s). At a minimum, bridges shall be raised to maintain at least the minimum vertical clearance that existed across the travel lanes prior to pavement rehabilitation and/or lane addition(s). Exceptions to this policy shall have the written approval of the Chief Engineer.

Bridges over City Streets and County Roads

When projects exist for pavement rehabilitation and/or adding lanes, bridges inside the project limits shall be raised when the resulting minimum vertical clearance is less than 14'-0'' across the width of the travel lanes.

If feasible, bridges shall be raised to achieve a minimum of 14'-3'' vertical clearance across the travel lanes after completion of pavement rehabilitation and/or lane addition(s). At a minimum, bridges shall be raised to maintain at least the minimum vertical clearance that existed across the travel lanes prior to pavement rehabilitation and/or lane addition(s). Exceptions to this policy shall have the written approval of the Chief Engineer.

Sign Bridges and Pedestrian Overpasses:

When projects exist for pavement rehabilitation and/or adding lanes, bridges inside the project limits shall be raised when the resulting minimum vertical clearance over the travel lanes is reduced.

Bridges shall be raised to maintain at least the minimum vertical clearance that existed across the travel lanes prior to pavement rehabilitation and/or lane additions.

Rev. 4/2014

RECOMMENDED FOR APPROVAL: John F. Blake
BRIDGE ENGINEER

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: Thomas F. Coogan
TRANSPORTATION DIRECTOR

4-10-14
DATE

Rev. 4/2014

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: BRIDGES TO REMAIN IN PLACE ON THE INTERSTATE SYSTEM

Bridges less than 200′ (60 m) will carry full roadway section across bridge. i.e. 12′ (3.6 m) travel lanes and 10′ (3 m) shoulder on right and 6′ (1.8 m) shoulder on left (minimum).

Bridges of any length with aluminum rail and 1′ (280 mm) curb will be replaced by bridges carrying full roadway section and having concrete safety barrier rails.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER/DEPUTY DIRECTOR

APPROVAL: _____ 8-11-2010
TRANSPORTATION DIRECTOR DATE

Rev. 6/2010

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: SLOPE PROTECTION AT BRIDGE ENDS

River/Stream Crossings & Relief Bridge Structures

Riprap will be used as slope protection under bridges at these locations.

Railroad Overpasses

Concrete slope paving will generally be used as slope protection under all railroad bridges. Any proposed alternates to concrete slope paving must receive prior approval of the railroad company.

Other Grade Separation Bridge Structures

Generally the method of slope protection will be either slope paving, riprap or crusher-run aggregate at these locations.

Representatives of the Design Bureau, Division, and Bridge Bureau will determine the type of slope protection to be used under each bridge during the Plan-In-Hand and/or PS & E project review.

The determination is to be based on soil type on the slopes, drainage conditions at the bridge structure, and site location.

Concrete slope paving should be used for slope protection at these locations in urban areas or areas with the potential to become urbanized during the life of the structure.

RECOMMENDED FOR APPROVAL: _____Don T. Arkle_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Ray D. Bass_____
CHIEF ENGINEER

APPROVAL: _____Jimmy Butts_____ _____4/14/95_____
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: STEEL TEST PILES AND LOADING TESTS

Steel test piles and loading tests should be eliminated from bridge projects where the core borings indicate that piling can be driven to refusal on rock within reasonable depth. The bridge foundation report will have guidelines and shall be consulted.

RECOMMENDED FOR APPROVAL: Wm. J. Hartzog
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: Tom Espy, Jr.
CHIEF ENGINEER

APPROVAL: Royce G. King 5/20/88
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: USE OF BRIDGE JOINT SEALS

Bridge joint seals should not be used as a general rule. They may be used in special cases where deemed necessary by the designer.

RECOMMENDED FOR APPROVAL: _____Wm. J. Hartzog_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: HAZARD MARKERS AT BRIDGE ENDS

Hazard markers will not be required at full width bridges.

RECOMMENDED FOR APPROVAL: _____J.F. Carraway_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: BRIDGE END SLABS

All projects on the State Highway System having asphalt pavement shall include bridge end slabs for all newly constructed bridges.

In order to eliminate the problems of maintaining the bridge end slabs after they have settled, the slabs shall be constructed approximately 3″ (75 mm) below the bridge deck finished grade and overlaid with asphalt. Any future settlement may be corrected by applying additional asphalt leveling.

An exception to this guideline may be considered upon submission of a written request to the State Design Engineer

RECOMMENDED FOR APPROVAL: _____
STATE DESIGN ENGINEER

APPROVAL: _____
CHIEF ENGINEER/DEPUTY DIRECTOR

APPROVAL: _____ 8-11-2010
TRANSPORTATION DIRECTOR DATE

Rev. 6/2010

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: MARKING OF MEDIAN CROSSOVERS AND SPEED CHANGE LANES

In accordance with provisions contained in Special Drawings 623-N Spec and LTL-623, the proper marking method is as follows:

1. At turnouts and driveways, the spacing of edgeline marking is to be continuous and is not to be broken.

2. At median crossovers, the placing of yellow edgeline marking is to be extended across the median opening using normal width Dotted Line Yellow Traffic Stripe pattern of 2ft./4ft. segment to gap ratio.

3. The extension of edgeline to channelizing line on speed change lanes is to be installed using normal width Dotted Line White Traffic Stripe pattern of 2ft./4ft. segment to gap ratio for both right and left turn lanes for either 2-lane or multi-lane facilities.

4. At crossroad intersections, the placing of corner radius control line from the nose of the median to the centerline of the crossroad is to be installed using normal width Dotted Line Yellow Traffic Stripe pattern of 2ft./4ft. segment to gap ratio.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 8/1/07
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: MATERIALS FOR TRAFFIC STRIPE, MARKINGS AND LEGENDS

PERMANENT TRAFFIC STRIPE, MARKINGS AND LEGENDS

All traffic stripe used for centerlines and edgelines shall be five inches (5") wide.

Pavement marking materials such as Class 2 Standard Thermoplastic meeting the requirements of Section 856 of the Department Specifications and Class 3 Tape or Class W Warranted Traffic Marking material as approved on List V-4, Permanent Traffic Materials, of the Alabama Department of Transportation's Materials, Sources, and Devices with Special Acceptance Requirements should be used for all traffic stripe, markings and legends on two-lane roadways with an AADT volume of 2,500 or greater and on all roadways of four lanes or more. Only roadways that are not anticipated to be resurfaces within five years from the time of application should be considered. On other roadways (where striping cycles are frequent) these type marking materials may be considered for centerlines on an individual project basis. On two-lane roadways with an AADT volume of less than 2,500, Class 2T Thin Film Spray Applied Thermoplastic meeting the requirements of Section 856 of the Specifications should be used for both centerlines and edgelines. Class 1 Paint may be used on low volume roadways in the range of 1200 ADT or less and for maintenance of traffic striping, markings and legends. Class 1H High Build Paint is intended for the use solely by State forces and should not be included in contracts.

Class W Warranted Traffic Marking Material as approved on List V-4, Permanent Traffic Marking Materials, of the Alabama Department of Transportation's Materials, Sources, and Devices with Special Acceptance Requirements should be used for all traffic stripe, markings and legends on all concrete pavement and concrete bridge decks. On contract work involving bridge replacements where approach work is less than 1000 ft Class W should be used on the bridge deck and approaches.

Pavement markings and Legends at rail/highway crossings shall be Class 2 Standard Thermoplastic, Type 3 Tape, or Class W Warranted Traffic Marking Material unless the Engineer determines the condition of the pavement is unsatisfactory for the use of these materials, in which case Class 2T Thin Film Spray Applied Thermoplastic should be applied.

TEMPORARY MARKINGS

In situations where temporary traffic stripe is to be place on the final wearing layer and the permanent traffic stripe will not be placed in the exact location of the temporary traffic stripe, removable marking tape shall be used for the temporary traffic stripe. Class 1 Paint shall be used for temporary striping when the striping will be overlaid with pavement layers or when the permanent traffic striping will be placed in the exact location of the temporary traffic stripe. Class 1 Paint shall not be applied to concrete surfaces.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER/DEPUTY DIRECTOR

APPROVAL: _____ _____
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: SALVAGE MATERIALS FROM CONSTRUCTION PROJECTS

During the project PS & E Inspection, decisions should be made concerning retainage of salvage materials. The following documentation must be on record with the Office Engineer before submission of plans for final processing.

1. If the proposed salvage material was placed with Federal-Aid funds, FHWA must make a field survey of the items and make an evaluation of the salvage value of the material.

2. If the salvage value of the item is in excess of $5,000.00:

   a. FHWA will be given credit for the salvage value and the State controls the disposition of the salvaged material, or

   b. The salvaged material will be placed in an inventory account and charged out and used. Salvage material can be reused on other projects eligible under the provisions of Title 23 U.S.C. The storage area and inventory method must be agreed to in writing by FHWA personnel. The reuse of this material must be documented on the project on which it is to be used.

3. If the salvage value of the item is $5,000.00 or less, no further actions are required. A written confirmation of the estimate must be obtained from FHWA.

4. If the proposed salvage material was placed using only State funds and such is validated, the State can dispose of or reuse the material at its discretion.

If the appropriate documentation is not on record with the Office Engineer, all reference to salvaged materials will be removed in order to obtain authorization for letting.

RECOMMENDED FOR APPROVAL: _____D.W. Vaughn_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____11/11/88____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: CONTINGENCY ADD-ONS TO ESTIMATED PLAN QUANTITIES

Effective with the December 9, 1988 Highway letting, percentage add-ons to estimated plan quantities shall be eliminated.

This directive applies to pay items such as, but not limited to, reinforcing steel, structural steel, concrete, earthwork items, base and paving items, etc., on which it is customary to increase the estimated (computed) quantities by two to ten percent.

It will be permissible to include certain items on the plans as "contingency item" when there is a good possibility that such items will be needed on construction. When such items are included, sufficient quantities shall be provided so that reasonable unit bid prices will be obtained.

RECOMMENDED FOR APPROVAL: _____J.F. Carraway_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____7/29/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: BACKGROUND MATERIALS FOR GROUND MOUNTED AND OVERHEAD GUIDE SIGNS

The following Guideline for Operation, relative to the background materials to be used on Ground Mounted and Overhead Roadways Signs, shall be implemented and followed as appropriate until rescinded.

GROUND SIGN INSTALLATIONS

All Ground Mounted and Overhead Freeway, Expressway and major At-Grade Intersection guide sign panels shall be designed and fabricated to Class 2 Specification Requirements (Article 710.01) using Type "B" reflective sheeting material for the sign background and Type "B" reflective sheeting material for the sign copy (Article 880.02). The "EXIT ONLY" panel used in conjunction with Overhead Guide Signs shall be fabricated to Class 2 A Specification requirements (Article 710.01) using Type "B" reflective sheeting material for the sign background. The sign copy shall be Cut-Out Applied Copy [Item 880.03(a)5)].

The use of lighting on overhead guide sign structures shall not be required.

RECOMMENDED FOR APPROVAL: Ray D. Bass
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: Tom Espy, Jr.
CHIEF ENGINEER

APPROVAL: Perry A. Hand 4/22/92
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: DESIGN OF TCP'S WHERE THERE IS A DIFFERENCE IN ELEVATION AT CENTERLINE DUE TO RESURFACING

On resurfacing projects a difference in elevation of approximately 2″ (50 mm) at the centerline may be allowed without additional traffic control as long as the edge is tapered or rounded to eliminate a vertical dropoff. Special conditions may exist where protection should be provided where the difference is less than 2″ (50 mm).

A difference of more than 2″ (50 mm) will require additional traffic control devices.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER/DEPUTY DIRECTOR

APPROVAL: _____ 8/11/2010
TRANSPORTATION DIRECTOR DATE

Rev. 6/2010

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: DESIGN FLOOD FREQUENCIES FOR BRIDGE OPENINGS AND SCOUR EVALUATIONS

The design flood frequencies given in the table below are standard criteria for the design of bridge openings and scour evaluations. The design flood frequency may be based on a smaller or larger flood frequency (less or greater than the Q25 or Q50) if site conditions warrant a lower or higher standard. Selection of the design flood frequency includes consideration of construction cost, possible damages to the highway and surrounding property caused by flooding, potential hazard and inconveniences to the traveling public, alternate routes, emergency and evacuation routes, and economic or budgetary constraints.

Design Flood Frequencies for Bridge Openings and Scour Evaluations

TYPE OF ROAD		FLOOD FREQUENCY FOR DESIGNING BRIDGE OPENING [1]	FLOOD FREQENCY FOR EVALUATING BRIDGE SCOUR [2]	
			Design Flood	Check Flood
Interstate		Q50	Q100	Q500
State Routes		Q50	Q100	Q200
Collector - County/Municipality [3]	ADT [4]			
	1-99	Q1.5 to Q25 [5]	Q50	Q100
	100-399	Q10 to Q25 [5]	Q50	Q100
	400-	Q25	Q50	Q100
Local - County/Municipality [3]	ADT [4]			
	1-99	Q1.5 to Q25 [5]	Q50	Q100
	100-399	Q10 to Q25 [5]	Q50	Q100
	400-	Q25	Q50	Q100

Note 1: Design flood equal to or greater than the 25-year flood will require at least 2 feet of freeboard when setting low chord or minimum finish grade elevation of Bridge. Freeboard requirement does not apply to bridge culverts.

Note 2: In case of road overtopping less than Q-Design, use worst case scenario for evaluating scour.

Note 3: If County/Municipality requests a bridge opening design using a Q50, the design flood for evaluating bridge scour should be Q100 and Q200 for the check flood or the worst case scenario if road is overtopped.

Note 4: Average Daily Traffic – Projected 20-year volume.

Note 5: Design flood should be commensurate with the type of road and risk the County/Municipality desires.

RECOMMENDED FOR APPROVAL: John F. Blake
STATE BRIDGE ENGINEER

APPROVAL: Ronald Z. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

11/18/13
DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: AIRPORT FENCING

Metal access right-of-way fencing sometimes interferes with airport traffic control radar.

In order to avoid this potentially dangerous situation, highway fencing in the vicinity of some airports should be nonmetallic. The Federal Aviation Administration should be contacted whenever a highway is adjacent to an airport in order to ascertain if metallic fencing will be a problem.

RECOMMENDED FOR APPROVAL: _____J.F. Carraway_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King___ _____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: MAILBOX RELOCATIONS

The only plan requirement relative to mailboxes is GN Note No. 139-A. This note covers only mailboxes which are in conflict with the actual construction. It does not give the authority to require the Contractor to correct a hazardous mailbox support or to move a mailbox further from the roadway.

Consideration should be given to this matter during plan development. If it is the intent to require the Contractor to correct hazards or relocate mailboxes, a listing of the locations and details of the work should be included on the plans.

RECOMMENDED FOR APPROVAL: _____Wm. J. Hartzog_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: DETOURS FOR BRIDGE REPLACEMENT PROJECTS

During the scope of work review for bridge replacement projects, the first item to be considered will be a determination of detour provisions for traffic during replacement of the bridge. This determination is to be compiled, submitted to the Design Engineer, and approved by the Design Engineer prior to proceeding with plan development. If stage construction of the replacement bridge or a detour bridge is recommended, the recommendation should be forwarded to the Bridge Engineer for concurrence. For each bridge project where an on-site detour is considered the preferred alternative, the Design Engineer will submit such recommendation, along with supporting justification, to the office of the Chief Engineer for review and final approval by the Transportation Director. This can be handled with the document prepared for submission to the Federal Highway Administration for BR funding limits.

Detour alternatives to consider:

1. The most economical detour is closure of the road to traffic with no provision for detours. Another alternative is to close the road and provide detours on other routes. This may include the State System only, the County System only, or a combination of the two systems. If a county route is utilized as a detour as a matter of practicality, arrangements are to be made with the county relative to utilization of the county road since there will be complaints from the county in the event the county road is damaged. In this situation, arrangements relative to either resurfacing of the county road prior to utilization as a detour or following utilization as a detour, or patching of the county road following utilization as a detour, should be arranged with the county and put in writing in the form of an agreement between this Department and the respective county.

2. A paved detour shall be provided at locations where on-site detour roads are justified.

3. Detours parallel to the existing facility should be constructed just above ordinary high water and in many cases pipe can be used for drainage in circumstances where drainage is minimal except during heavy rains. The detour may require closing to traffic during periods of heavy rain.

4. Speeds through detour areas can be reduced, thus reducing the length of detours. Traffic can be brought to a "stop condition" if necessary. Sight distance requirements should be in accordance with the reduced speeds.

5. Maximum use should be made of culverts. The use of culverts can provide one-way detours or one lane of traffic either side of the roadway and construction of the culvert in the middle of the roadway once the two ends are constructed. These are situations which will have to be evaluated and initiative shown in design of each project depending upon local circumstances.

6. In the event a road is closed to traffic and off-site detours are used or in the event a road is closed to traffic and no off-site detour is provided, consideration should be given for the use of incentive/disincentive provisions in accordance with the Department's Guidelines for Operation number 4-7.

7. Another alternate is to construct the bridge in stages and utilize part of the old bridge for detour traffic while constructing the first stage of the new bridge. Traffic can be carried on the first stage construction while removing the existing bridge and completing the subsequent construction.

8. When an on-site detour is necessary, consideration should be given to a minimum base build-up of approximately 50 percent of that required for the main line. The paved surface of this detour should include a wearing type surface to help waterproof the underlying material.

The order of preference for providing detours on Bridge Replacement projects shall be:

1. Close the road to traffic with no detour provision.

2. Close the road and provide off site detour. (Dependent on availability of a suitable detour route.)

3. Provide on site detour on existing R.O.W. using multiple lines of pipe.

4. Provide on site detour on existing R.O.W. using stage construction on the new bridge or culverts.

5. Provide on site detour using a temporary detour bridge.

RECOMMENDED FOR APPROVAL: W. Fred Conway
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: Ray D. Barr
CHIEF ENGINEER

APPROVAL: Tom Butt
TRANSPORTATION DIRECTOR

5/17/95
DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: TRANSPORTATION LANDSCAPE AND ENVIRONMENTAL DESIGN INCLUDING RELATED PERMITS

The Planning, Design, Plan Development, Public Project Development, and Maintenance of Landscape and Environmental factors for transportation facilities shall be in accordance with the current guidelines and recommendations of the AASHTO Operating Committee on Roadside Development, the current edition of "A Guide for Transportation Landscape and Environmental Design", as published or issued by AASHTO, and attached exhibit "A". All work and submittals pertaining to these guidelines must be reviewed by the State Landscaping Architect. In all cases, safety shall be the overriding criteria for development.

RECOMMENDED FOR APPROVAL: _____Mitchell Kilpatrick_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____J.D. Brown_____
CHIEF ENGINEER

APPROVAL: _____M. Roberts_____ _____9/26/94_____
TRANSPORTATION DIRECTOR DATE

EXHIBIT "A"

RECOMMENDED FOR APPROVAL
BY: _____
DATE _____

ALABAMA DEPARTMENT OF TRANSPORTATION
SITE-LANDSCAPE DEVELOPMENT PLAN CHECK LIST

PERMIT/PROJECT NUMBER _____
PERMIT/PROJECT NAME/LOCATION _____
PROJECT ENGINEER _____
CHECKED BY _____
DATE _____

I. GENERAL REQUIREMENTS

Y	N	N/A		
___	___	___	A.	Sheet size, borders, and trim lines standardized
___	___	___	B.	Title Block
___	___	___		1. Sheet title
___	___	___		2. Scale
___	___	___		3. Date
___	___	___		4. Sheet number
___	___	___		5. Job number
___	___	___		6. Drawn by
___	___	___		7. Checked by
___	___	___		8. Stamps (Engineers, Landscape Architect, Architects)
___	___	___		9. Signatures
___	___	___	C.	Agency or ALDOT logo and address
___	___	___	D.	North Point for accuracy
___	___	___	E.	Written and graphic scale
___	___	___	F.	Legend, notes, and labels identified
___	___	___	G.	Concurrence with specifications - both general conditions and construction specifications
___	___	___	H.	Verify that all interim plan changes are made on all sheets
___	___	___	I.	Check related sheets for consistent match lines, contours, buildings, roads, etc.
___	___	___	J.	Correct spelling
___	___	___	K.	Graphic clarity (line weights, readability)

II. LAYOUT PLAN

Y	N	N/A		
___	___	___	A.	Reliability of reference points
___	___	___	B.	Independent reference points provided for independent work items
___	___	___	C.	Floaters provided (No over dimensioning)
___	___	___	D.	Details referenced

___	___	___	E.	Materials identified
___	___	___	F.	Property lines with bearings and distances, easements, setbacks
___	___	___	G.	Boring locations identified
___	___	___	H.	Roads, parking and service areas
___	___	___		1. Centerline stations, bearings, distances, curve data, etc.
___	___	___		2. Intersection edge radii
___	___	___		3. Lot dimensions referenced to road centerline
___	___	___		4. Traffic marking locations
___	___	___	I.	Buildings and other structures
___	___	___		1. Strongly defined and labeled
___	___	___		2. Located by dimensions from base lines, bearings, or coordinates
___	___	___	J.	Dimensions
___	___	___		1. Check plan layout dimensions
___	___	___		2. Verify radius labels, charts, etc.
___	___	___		3. Check math on overall dimensions
___	___	___		4. Verify that all dimensions are tied to overall plan layout

III. GRADING PLAN

Y	N	N/A		
___	___	___	A.	Property lines, match lines, and construction limit lines shown
___	___	___	B.	Existing contours shown clearly marked with contour interval noted
___	___	___	C.	Bench mark located and described
___	___	___	D.	Proposed grading including:
___	___	___		1. High points, low points, ridges, swales, and flow lines
___	___	___		2. Spot elevations at all changes of gradient, walk ends and inlets
___	___	___		3. Spot elevations at top and bottom of all walls, steps, and ramps
___	___	___		4. Floor elevations for every access level of each structure
___	___	___		5. Existing buildings, structures, and trees to remain
___	___	___		6. Spot elevations at each building corner labeled
___	___	___		7. Protection of trees that will be affected by grading
___	___	___		8. Drainage in nonpaved areas greater than 1%
___	___	___		9. Swales at 1% or greater

Y	N	N/A		
___	___	___		10. Storm drainage catch basin rim elevations shown
___	___	___		11. Storm line inverts at proper grade and indicated on drawings
___	___	___		12. Slopes no greater than 3:1
___	___	___		13. Two (2) spots on curb straight run

IV. UTILITY SHEETS

Y	N	N/A		
___	___	___	A.	Sanitary sewer
___	___	___		1. Size indicated on all lines
___	___	___		2. Laterals shown
___	___	___		3. Cleanout locations shown (check for proper spacing)
___	___	___		4. All manhole tops and numbers indicated
___	___	___		5. All manhole inverts in existing ground or create false bottoms (profile only)
___	___	___		6. Station and elevations on profiles
___	___	___		7. Check flow line calculations
___	___	___		8. Verify minimum and maximum grades for pipe
___	___	___	B.	Lift Stations/Grinder Pumps
___	___	___		1. Calculation review
___	___	___		2. Sizing
___	___	___		3. Spec data
___	___	___	C.	Storm sewer
___	___	___		1. Inverts of headwalls and endwalls indicated
___	___	___		2. Throat elevations of yard inlets indicated
___	___	___		3. All manhole and curb/yard inlet tops and numbers indicated
___	___	___		4. Tabulation for all storm sewer structures. Indicate stations, tops, throats, (including number of) and inverts
___	___	___		5. Check to insure that overland relief has been provided at all inlets
___	___	___		6. Limits of pool elevation show at all headwalls
___	___	___		7. Pipe material conforms to jurisdictional requirements and is the most economical permitted
___	___	___		8. End conditions are the most economical permitted
___	___	___		9. Overall relief, overland relief available
___	___	___	D.	Storm water retention/detention
___	___	___		1. Verify retention pond and calculations
___	___	___	E.	Waterlines
___	___	___		1. Pipes labeled with size
___	___	___		2. Fittings, valves, blowoffs, and hydrants labeled
___	___	___		3. Easements on all pipes outside the right-of-way
___	___	___		4. Waterlines orientation from centerline
___	___	___		5. Waterlines at standard distance from centerline and other utilities (as required by jurisdiction)
___	___	___		6. Is there adequate horizontal distance between waterline and or other utilities
___	___	___		7. Distance of separation noted where less than standard
___	___	___		8. Is there adequate fire hydrant coverage
___	___	___		9. Hydrant distance to structure
___	___	___		10. Are sprinklers required
___	___	___		11. Is there adequate fire flow and pressure
___	___	___		12. Is a pressure reducing valve required

Y	N	N/A			
___	___	___		13.	Check both existing and future pressures
___	___	___		14.	Type of pipe meets jurisdictional criteria and is cost effective
___	___	___		15.	Do curves cause excessive joint deflections

V. LANDSCAPE SHEETS

___	___	___	A.		Plan data layout
___	___	___		1.	Plant locations
___	___	___		2.	Readability
___	___	___		3.	Plant list data sufficient
___	___	___		4.	Check plant totals
___	___	___		5.	Spelling
___	___	___		6.	Verify details
___	___	___	B.		Seeding
___	___	___		1.	Seed specification
___	___	___		2.	Coverage application
___	___	___		3.	Sod use
___	___	___		4.	Mulch application
___	___	___	C.		Irrigation
___	___	___		1.	Layout
___	___	___		2.	Head selection
___	___	___		3.	Pressure calculations
___	___	___		4.	Zone definition
___	___	___		5.	Materials specification
___	___	___		6.	Details

VI. DETAIL SHEETS

___	___	___	A.		Block plans - enlarged areas showing:
___	___	___		1.	Location of feature
___	___	___		2.	Grading of surface
___	___	___		3.	Plantings (see Landscape Sheet)
___	___	___		4.	Relation to supplemental plan
___	___	___		5.	Complete labels and dimensions
___	___	___	B.		Road alignment
___	___	___		1.	Existing topography plotted
___	___	___		2.	Begin/end station points identified
___	___	___		3.	Horizontal curves labeled and include: L, R, T, D, ARC, and correct
___	___	___		4.	Horizontal P.C. and P.T. station points shown and correct
___	___	___		5.	Intersection station points shown
___	___	___		6.	Vertical grade labeled
___	___	___		7.	Vertical P.C., P.I., P.T., station points shown and correct
___	___	___		8.	Vertical curve length shown
___	___	___		9.	Elevation at 50’ stations (25’ stations for curve) shown and correct

Y	N	N/A			
___	___	___		10.	Proposed gradient shown
___	___	___		11.	Elevation and stations referenced
___	___	___	C.	Construction Details	
___	___	___		1.	Title and scale
___	___	___		2.	Organization, line weight, graphic symbols correct
___	___	___		3.	Correctly dimensioned
___	___	___		4.	Material finishes shown or noted
___	___	___		5.	Material quality shown or noted
___	___	___		6.	Material type shown or noted
___	___	___		7.	Fastener connections shown or noted
___	___	___		8.	Cross references correct

VII. EROSION CONTROL

___	___	___	A.	Storm Water Permit	
___	___	___	B.	General Information	
___	___	___		1.	Compete Title
___	___	___		2.	Notes as required by jurisdiction
___	___	___		3.	Legend of standard symbols
___	___	___		4.	All items shown with standard symbols
___	___	___		5.	Siltation and erosion control narrative
___	___	___		6.	Detail sheets
___	___	___		7.	Are all siltation control devices detailed
___	___	___		8.	Are siltation control devices shown acceptable to the client and jurisdiction
___	___	___		9.	Silt traps designed for largest contributory area (may be an existing or proposed condition)
___	___	___		10.	Mechanical measures, i.e. silt traps, straw bales, etc.
___	___	___		11.	Evaluate temporary dams/berm for off-site ponding effects

VIII. SPECIFICATIONS

___	___	___	A.	General Information	
___	___	___		1.	Invitation to bid
___	___	___		2.	Instructions to bidders
___	___	___		3.	Supplementary instructions to bidders
___	___	___		4.	Bid and bid alternates
___	___	___		5.	Bid bond
___	___	___		6.	Agreement
___	___	___		7.	Performance and payment bond
___	___	___		8.	Noncollusion affidavit of prime bidder
___	___	___		9.	Statement of bidder’s qualifications
___	___	___		10.	Contractor’s affidavit release and waiver of claim
___	___	___		11.	Certificate of insurance

___	___	___		12.	Insurance requirements and indemnity agreement
___	___	___		13.	Certificate of nondiscrimination in employment
___	___	___		14.	Minority and women business enterprise provision and forms
___	___	___		15.	General conditions
___	___	___		16.	Supplementary general conditions
___	___	___		17.	Certificate of substantial completion
___	___	___		18.	Application and certificate for payment
___	___	___		19.	Consent of surety
___	___	___		20.	Wage decision
___	___	___		21.	Special Conditions
___	___	___	B.	Technical Specifications	
___	___	___		1.	Cross reference specification with plans
___	___	___		2.	Spelling, proof reading for clarity
___	___	___		3.	Subsurface and core boring information

IX. OTHER NOTES

The following notes are pertinent to this specific project.

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: ACCEPTABLE METHODS FOR ESTIMATING PEAK RUNOFF FOR AN UNREGULATED WATERSHED

URBAN AREAS:

a) The Rational Method for drainage basins up to 200 acres (81 hectares),

b) The USGS urban regression equations contained in Scientific Investigations Report No. 2010-5012, "Magnitude and Frequency of Floods for Urban Streams in Alabama, 2007,"

RURAL AREAS:

a) The Rational Method for drainage basins up to 200 acres (81 hectares),

b) The USGS small streams regression equations contained in the Scientific Investigations Report No. 2020-5032, "Magnitude and Frequency of Floods in Alabama, 2015"

c) The USGS regional regression equations contained in the Scientific Investigations Report No.2020-5032, "Magnitude and Frequency of Floods in Alabama, 2015. "

For accuracy and limitations of the urban and rural USGS regression equations, please refer to the specific reports.

RECOMMENDED FOR APPROVAL: Steven E. Walker
State Design Engineer

APPROVAL: _____
CHIEF ENGINEER

APPROVAL:

John R. Cooper
Transportation Director

7/28/2020
Date

Rev. 7/20

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: STORM DESIGN FREQUENCIES TO BE USED FOR INLET DESIGN

In order to confine the spread of water to a tolerable limit on the pavement of interstate and other major highways having curbed sections, the design spacing of inlets should be based on a 10-year storm frequency except for depressed sections and underpasses where storm water cannot escape by overtopping the curb and can only be removed through storm drains. In the latter situations, a 50-year storm frequency should be used for design.

RECOMMENDED FOR APPROVAL: _____J.F.Carraway_____
ASSISTANT CHIEF ENGINEER - ENGINEERING

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Perry A. Hand_____ _____8/11/92_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: CRITERIA FOR INLET SPACING IN SAG VERTICAL CURVES

Where significant ponding of storm water can occur at locations such as underpasses and sag vertical curves in depressed sections, it is desirable to place a flanking inlet on each side of the inlet required at the low point of the sag. The flanking inlets should be placed at locations to be determined for optimal performance based on how effectively they limit the spread of water in the sag and act in relief of the inlet at the low point. FHWA Hydraulic Engineering Circular No. 12 should be consulted for proper design procedures. It should be understood that flanking inlets are to be used only in the unusual circumstance where water cannot escape by overtopping the curb or an unusually long sag vertical curve where it might be difficult to determine the low point.

RECOMMENDED FOR APPROVAL: _____J.F. Carraway_____
ASSISTANT CHIEF ENGINEER - ENGINEERING

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Perry A. Hand_____ _____8/11/92_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: CLOGGING REDUCTION FACTORS FOR INLET DESIGN

During the design process, a clogging factor should not be used to reduce the effective perimeter or clear opening of inlets placed on grade. For inlets in sag verticals or on flat grades, some reduction for clogging may be justified where there are indications of a need. If a clogging factor is used in a particular project for inlets in sag verticals or on flat grades, this factor should be determined in consultation with maintenance personnel. In the absence of this maintenance information, a reasonable factor for use should be around 10%

RECOMMENDED FOR APPROVAL: _____J.F. Carraway_____
ASSISTANT CHIEF ENGINEER - ENGINEERING

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Perry A. Hand_____ _____8/11/92____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: **STANDARD OPERATING PROCEDURE FOR DETERMINING SPEED LIMIT(S) IN A WORK ZONE**

The "Standard Operating Procedure for Determining Speed Limit(s) in a Work Zone" shall be referenced and applied during the design phase of projects that require temporary traffic control.

This Standard Operating Procedure establishes the Alabama Department of Transportation's process and procedure for determining if the speed limit(s) in a work zone should be reduced based on the type of work being performed.

A copy of the "Standard Operating Procedure for Determining Speed Limit(s) in a Work Zone" is available on the Design, Construction, and Maintenance Bureau's Webpage.

RECOMMENDED FOR APPROVAL:

Steven E. Walker
STATE DESIGN ENGINEER

STATE CONSTRUCTION ENGINEER

APPROVAL:

CHIEF ENGINEER

DEPUTY DIRECTOR, OPERATIONS

APPROVAL:

TRANSPORTATION DIRECTOR

9-26-2019
DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: PAVING FOR TURNOUTS

As a general rule, paving for turnouts shall not exceed more than 3′ (1.0 m) beyond the normal edge of pavement. In special cases, where conditions warrant, longer paved turnouts may be provided.

RECOMMENDED FOR APPROVAL: William F. Adams
STATE DESIGN ENGINEER

APPROVAL: Neal Vaughn
CHIEF ENGINEER/DEPUTY DIRECTOR

APPROVAL: Dom Thomas
TRANSPORTATION DIRECTOR

8-11-2010
DATE

Rev. 6/2010

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: BORROW PIT LOCATIONS

Sheets which show the location of suggested borrow pits for a project should include a point of reference on the site with respect to the project. A distance should be given from a defined point on the project, such as a station number, to a defined point in the borrow area, such as a particular corner of the tract.

RECOMMENDED FOR APPROVAL: _____Ray D. Bass_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy.Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/24/89_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: EXTENSION OF CAST-IN-PLACE BOX CULVERTS

Cast-in-place box culverts shall not be extended with precast box culverts. This may be waived in the event there is supported documentation showing that it is beneficial to the Highway Department to extend cast-in-place box culverts with precast box culverts. If precast is used, the contractor shall be responsible for meeting the requirements of Special Provision 573(2).

RECOMMENDED FOR APPROVAL: _____W.F. Conway_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____8/16/90_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: LIMITING STORM DRAINAGE COSTS ON PROJECTS

One element of project costs that tends to increase in the design phase at a higher rate than other project elements is the highway drainage cost. In order to keep down the tendency for expanding these costs, the following guides should be followed.

- Drainage facilities upgrading in the project vicinity, but not vital to the project, shall be the responsibility of the controlling agency for that area. Such areas may include cities, counties, railroads, schools, private concerns, etc. The state may notify the appropriate agency of a deficiency found during the design process.

- Where the state highway right of way contains a deficient facility and its correction is not vital to the project under design, the situation will be duly noted and evaluated with regard to safety. Dependent upon the risk involved, a future project may be scheduled where appropriate.

RECOMMENDED FOR APPROVAL: _____J.F. Carraway_____
ASSISTANT CHIEF ENGINEER - ENGINEERING

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Perry A. Hand__ _____8/11/92_____
HIGHWAY DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: ELECTRONIC DATA COLLECTION

Field information necessary for the development of construction contract plans may be collected electronically by total station equipment or by the combination of total station and aerial digital mapping. It is the intent of this guideline to provide procedures in which the Alabama Department of Transportation's electronic field data will be interpreted and easily utilized by all division offices and the central office. It is essential that uniform formats be utilized so that exchange of information can be done easily with little or no translation. This guideline covers basic field data collection, data editing, data transfer and storage on the Department's Intergraph system. It is the intent of these guidelines that all field survey data be processed with TERRAMODEL software and data output be in TERRA MODEL file format prior to transfer to the Department's Intergraph system.

A. Electronic Survey Field Data Collection by Total Station

1. All horizontal closures of the survey base lines must meet Third Order, Class I (1/10,000 or better). Vertical accuracy must be Third Order (12 Millimeters x square root of the distance in kilometers).

2. All planimetrics must be collected in 3-D format (X, Y, Z format) in such a manner that TERRAMODEL will automatically connect all lines. The planimetrics information should also be collected in such a manner that TERRAMODEL will automatically label points as well.

3. In general, right angle cross sections at intervals not to exceed 20 meters are to be taken on most projects. For projects with digital aerial mapping having a 500-millimeter contour vertical accuracy, cross sections may be eliminated in unobscured areas. Right angle cross sections must be taken in obscured areas or where the project profile does not match the digital terrain model (DTM) profile. Supplemental shots in between cross sections should be collected to define highs, lows, and breaklines in order to develop a reasonably accurate digital terrain model.

4. Any and all breaklines for the purpose of creating a more accurate DTM must be collected as 3-D (this is in addition to the usual planimetrics that are also breaklines) and must be collected in a manner that will cause them to connect automatically when loaded to TERRAMODEL.

5. Any utility information is to be collected as 3-D and in a manner that will cause the necessary points to label properly and automatically in TERRAMODEL.

6. Property ties and section/quarter corners are to be collected in a manner that will cause them to be labeled automatically in TERRAMODEL.

7. All points collected in the field must be assigned the proper point code for identification purposes and in order for uploading to operate properly and in a uniform manner. Design Bureau point codes are to be used.

8. The type of total station and data collection equipment is optional as long as the methods used for collection (to produce an ASCII XYZ) follow the requirements for automatic line connect and labeling within TERRAMODEL.

B. Uploading and Editing of Survey Field Information in the Office

1. The standard prototype which has been developed by the Location Section must be utilized in TERRAMODEL which sets the majority of defaults and layer names for survey data.

2. All information collected in the field must be calculated and translated into a ASCII XYZ format which includes Pno, N, E, Z, Pcode. The actual format sequence is optional since TERRAMODEL can be told what the incoming format is to be.

3. TERRAMODEL must be configured with specific layer names and colors on which information is to be stored as designed by the Location Section.

4. Linetyping is to be accomplished by using “MAPPTS” that automates this procedure.

5. All points requiring a “label” must do so utilizing the standard “map” file that has been created for this automated procedure.

6. All “hand” created lines and points must be on the proper layers and be linetypes and labeled properly.

7. All standard drafting principles must be adhered to when constructing a map of any kind in TERRAMODEL. This is to include but not be limited to text placement and editing, station ticks and notations, property owner information and property boundaries, section and quarter lines, equation and angle notations, ROW’s, easements, proper linetyping and symbols, north arrows, bearings along centerline, planimetrics description, closing sketches and relative information and a title block.

8. Separate files must be made for each type of map being created, i.e. field map, utility map, TERRAMODEL contour map, profile map and InRoads type map.

   (a) Field Map File - A file that would consist of the usual features of planimetrics, property designations, etc.

(b) Utility Map File - A file that would consist of all overhead and underground utility information along with edge of pavements of roadways and ROW/easement lines.

(c) TERRAMODEL Contour Map File - A file that would consist of all "breaklines" and radial points (on same layer) necessary to create an accurate DTM surface with contour lines for field checking.

(d) Profile Map File - A map that would contain all profile graphics and notations and proposed grade lines for all alignments.

(e) InRoads Type Map File - A file that would contain all usable breaklines and radial points necessary for transfer to the InRoads software for the creation of a "final: DTM. This file would be the final and error free "surface" that was created from the "TERRAMODEL Contour Map File" which has been "field checked" and corrections applied. The InRoads DTM is to be the one and only surface to be utilized by any division or bureau for earthwork calculations, etc. This file, unlike the TERRAMODEL Contour Map File, will have the usable breaklines on one layer (BRKLINE) and the radial points on another layer (DTMPOINT) since this is a requirement of InRoads.

C. Transfer of TERRAMODEL Data Files to Intergraph System

All TERRAMODEL files are to be translated into DESIGN (.dgn) files with the exception of the Profile Map File (to be a .DXF file).

1. Field Map - Assuming that all layer names and colors are correct and that different data are stored on the proper layers and linetyped and labeled properly, the following is to be done prior to creating the .DGN file.

(a) For a 1:500 scale, the macro called TOTAL50.mac must be run which explodes linetypes, changes sizes of certain text and generally fixes translation problems to ensure proper transfer to the Interpro and InRoads.

(b) For a 1:1000 scale, the macro called TOTAL100.mac must be run.

(c) To write the Design (DGN) file, prompts for this phase will appear within the macros named above.

(d) Naming the design file

Examples: 335f100.dgn 335f50.dgn 335u100.dgn 335u50.dgn

(1) "335" represent the Project CADD Number. This is assigned by the Design Bureau.

(2) “f” indicates that it is a Field Map. If it is to be a Utility Map, this letter would be “U”.

(3) The “100” indicates that it is a 1:1000 scale map. If it is to be a 1:500 scale, then “50” would be used.

2. Utility Map - The same procedure as outlined under Field Map is to be followed. This is again assuming everything has been followed as far as layering, linetyping etc., and write to a DGN file.

3. TERRAMODEL Contour Map

(a) Having contoured the map at the desired interval, include all alignments with the file and if planimetrics are desired and they have a linetype other than solid or continuous, then explode the linetypes by hand following procedures to ensure that the “exploded” lines remain on their respective layers.

(b) Write the file to a DGN file and follow the naming procedures explained under Field Map. Example: If the contour map is to be on a 1:500 scale, then name the design file “335tm50.dgn”.

4. InRoads Digital Terrain Model and Contour Map

Assuming that this is a file that is properly layered and is a fully edited file “free” of field error, the following must be done:

(a) Have “breaklines” on the BRKLINE layer.

(b) Have “radial points” on the DTMPOINT layer.

(c) Ensure there are no labels, text, polylines or alignments in this file.

(d) Write the design file. When writing the design file, select objects to be “written out”. Select only the BRKLINE layer and the DTMPOINT layer.

(e) Use the proper naming scheme as described earlier. Example: The file name is to be (in this case) 335IR.DGN.

5. Profile Map

(a) Having properly placed all profiles with their “attachments” on the proper layers and having placed an “origin” point for control, write the file to a DXF.

(b) Use the proper naming scheme. (Since you are using the 1:10 ratio, scale is of no importance after that.) Example: The file name would be (in this case) 335PROF.DXF.

D. Files for Submittal Other Than CADD Files

1. Control Files (ASCII XYZ) - This file would contain all “edited” closure points, PI’s, PC’s, PT’s, POT’s, POST’s on the centerline of survey and any subsequent “radial” points of importance in re-establishing the survey.

2. Alignment Files - These are the files that represent the field staked alignments.

   (a) ASCII XYZ Files

   (b) SE Files (Station Elevation)

   (c) TERRAMODEL “LST” Files - a program ASCII listing of alignment.

3. Raw Data Files - are any “raw” and/or unedited data file created after it has first been downloaded from the instrument to the PC. This file serves as the original and legal “field book”. This does not include any other “fragmented” files created for the purpose of constructing total cross sections, etc.

E. It is necessary that certain other books and indexes be created and submitted as part of the survey information.

1. Field Books - should have:

   (a) Normal title on front of book.

   (b) Normal indexing and titling inside.

   (c) All stations and horizontal curve data recorded on all alignments.

   (d) All station equations at traverse intersections and angle ties.

   (e) The PNO (point number) placed beside each station as well as beside each POT, PI, PC, PT, POC and equation points.

   (f) Closure sketch and its ties to GPS (if any).

2. Check Level Books - should have:

   (a) Normal title on front of book.

   (b) Normal indexing and titling inside.

   (c) All check level loops with BM’s accurately described. If there is a station plus and distance, then show it.

   (d) PNO’s (if any) assigned to a BM.

3. Index Sheets

These sheets should be copies of the “daily” logs kept by the crew to show the history of a file and its ultimate destination to some format and some file.

The goal of turning in the information as listed is to better enable all persons receiving the survey information to located and interpret the information. Specifically, the Check Level Book will be used by the design to transfer BM information to the plan sheets. Also, the BM’s can be located easier by another surveyor. The Field Book is intended to allow another surveyor to locate points on the ground and match them with points in the “archival” files to establish coordinates of a particular point. The index sheets are intended to be used to locate a certain file that was not archived but is a file that only the original Party Chief has recorded. Further, if during the transfer of information and the process of design, a file cannot be located in the “archive”, then the index sheet may indicate whether the information was ever collected.

F. The following are general standard procedures to be adhered to in surveys that are Metric:

1. Station intervals will be 100 meters. A station will be noted as 1+00.

2. Field staking will be at 20 meter intervals for cross sectioning and profiling purposes.

3. Linear accuracy for “important” measurements should be to the nearest millimeter. The accuracy of other “topographic” type measurements should be within 10 millimeters.

4. Vertical accuracy on level loops should be 12 millimeters x the square root of the distance in kilometers. Vertical accuracy on all other data should be based on how critical that specific item is to plan development. For example: pipes, culverts, bridge surfaces, pavement edges, crows, etc. should be recorded at 1-millimeter accuracy. Other things such as ground shots, banks, toes, shoulders, etc. should be recorded at 10-millimeter accuracy.

5. Angular measurements and recording of same will not change (degrees, minutes and seconds) and will retain their normal notations (decimals will not be used). A full circle will continue to be 360 degrees.

6. Horizontal curves will no longer have a “degree” specified but will be expressed with a radius value.

7. Mapping scales (horizontal) will be 1:500 (replaces 1” = 50’) and 1:1000 (replaces 1” = 100’).

8. Mapping scale for vertical (profiles) will be 1:1000 horizontal and 1:100 vertical.

Location survey crews will normally use the following scales:

10 mm = 10 m horizontally

10 mm = 1 m vertically

9. Units for linear measurements will be meters or millimeters. A rule of thumb is measurements greater than a meter will be shown in meters. The exception to this is pipe diameters. Pipe lengths will be shown in meters but the diameter will be shown in millimeters. (This applies to culverts as well.)

   (a) Pipe/culvert "lengths" must be noted on maps and forms to the closest 10 millimeters.

   (b) Rounded dimensions should be used on pipe/culvert openings based on 1" = 25 mm.
   EXAMPLES: A 24" pipe would be a 600 mm pipe, a 3' x 4' culvert would be a 900 mm x 1200 mm culvert.

10. Notations should be "m" for meters and "mm" for millimeters.

11. Land areas will be shown in hectares rather than acres.

12. Hydraulic information shall be shown in cubit meters per second.

RECOMMENDED FOR APPROVAL: _____Don T Arkle_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Ray D. Bass_____
PRE-CONSTRUCTION ENGINEER

APPROVAL: _____M. Roberts_____ _____10/4/93_____
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: PROCEDURE FOR DEVELOPMENT OF RAIL-HIGHWAY SAFETY SIGNALIZATION PROJECTS

The following is a guideline outlining procedures for development of rail-highway safety signalization projects funded with federal aid safety funds.

Alabama Department of Transportation Responsibilities:

1. The plan assembly for grade crossing signal projects shall consist of the following:
   a. Site location sheet (Title Sheet).
   b. Drawing of the project site (not to scale) which contains a description of improvement recommendations and identifies the railroad company involvement.
   c. Quantities and cost estimate sheet for work to be performed by State Forces.
   d. Preemption and drainage requirements.
2. Installation of signs, striping and markings for all grade crossing signal projects, including off-system crossings.

Local Government Responsibilities:

1. Work will be required by the cities or counties if drainage improvements or preemptive devices are needed.
2. The responsible county or city will be required to sign an agreement for maintenance of off-system signs and markings installed as part of the project.

Railroad Responsibilities:

1. All traffic control responsibilities during construction and the locating and relocation of all utilities for the railroad signal installation.
2. Installation of the railroad signal equipment on the railroad right-of-way.

Upon completion of a rail-highway project, the Region/Division Railroad Coordinator will physically inspect the crossing to ensure the signals are properly working. The Region/Division Railroad Coordinator will submit a letter recommending acceptance of the project to Transportation Planning and Modal Programs Bureau so the project can be closed out.

RECOMMENDED FOR APPROVAL: Robert J. Jilla
MULTI MODAL TRANSPORTATION ENGINEER

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

11/18/13
DATE

Rev. 11/2013

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: USE OF MARKED EDGE LINES

In order to provide positive guidance to motorists, the following application for the use of edge lines shall be observed:

1. Edge lines shall be provided on all state maintained roadways with travel lane widths greater than or equal to ten feet.
    a. The edge line requirement shall be provided within turn lanes as well as along through lanes.
    b. The edge line requirement includes roadways that are curbed or curb & gutter.
    c. The edge line requirement applies to both two-lane and multi-lane roadways.
    d. The edge line requirement should be noted either on the Striping Pay Item Box Sheet or by project note.

2. On horizontal curves, wider edge lines may be provided where the posted speed and the advisory speed of the horizontal curve differ by at least 15 mph as determined through an engineering study consistent with the Manual on Uniform Traffic Control Devices.
    a. The edge lines should be twice the width of the normal edge line, i.e., 5-inch wide normal edge line would relate to a 10-inch wide edge line. The wider edge line would be placed from the PC to the PT along the outside lane edge line.
    b. Optionally, the wider edge line may be used when crash data indicates that the wider edge line may provide additional guidance on horizontal curves where the speed differential is less than 15mph.

RECOMMENDED FOR APPROVAL: _____
DESIGN BUREAU CHIEF

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 2/9/2016
TRANSPORTATION DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATIONS

SUBJECT: WHITE LONGITUDINAL MARKINGS

Differentiation is made herewith between different types of longitudinal markings:

Lane Line Markings shall have a normal width of 5 inches and shall be used to delineate the separation of traffic lanes that have the same direction of travel. Such lane markings include solid and broken markings. The solid line marking shall be used where crossing the lane line marking is discouraged. The broken lane line marking shall be used where crossing the lane line marking is permitted with care. Solid lane line markings shall be used to separate through traffic from auxiliary lanes, preferential lanes, and left and right turn lanes.

Channelization Line Markings shall be twice the normal width or 10 inches and are used to define the neutral area, promote the safe convergence or divergence of ramp traffic from through lane traffic, and guide traffic away from objects near the travelway. These markings are used for greater emphasis in comparison to a normal lane line marking. Channelization line markings shall be used at entrance and exit ramps. They may also be used around islands, neutral areas, and near travelway obstructions.

Lane Drop Markings are a special type of lane line marking which distinguishes a lane drop from a normal exit ramp or auxiliary lane. If used, the lane drop marking shall be the same width of the line which defines the neutral area or theoretical gore in the case of an exit or the same width of the line which separates the through traffic from the auxiliary lane in the case of a turn. The lane drop marking shall be line segments of 3 feet separated by 9 feet gaps.

Other white longitudinal line markings are identified in the MUTCD such as double solid lane lines, edge line markings, and transverse markings.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____
TRANSPORTATION DIRECTOR

8/31/07
DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: TCP FOR INTERSTATE LANE ADDITION PROJECTS

Two methods have been used successfully to construct lane addition projects on the interstate when adding lanes in the median. Typically, existing laneage is kept open in each direction during the widening.

The first method is to reduce lane widths to 11' and shift the traffic to the outside so that the temporary outside edge of travel is 6' onto the shoulder. An 8' offset is then available from the temporary inside edge of travel lane to the drop-off for the widening. Vertical panels are used to delineate the work area. This method is dependent on full width outside shoulders on I-Over bridges. The division should evaluate bridge widening and raising needs in advance of the lane addition projects to determine if separate bridge projects should be programmed. This TCP method will require reduced contract time with incentive/disincentive to minimize traffic exposure time.

The second method utilizes a positive barrier. This method should be considered as an alternate solution when traffic exposure adjacent to a necessary construction activity requires a drop-off for an extraordinary length of time.

Each project has different site conditions, and on each project the division should determine the appropriate method based on traffic, site conditions and time length of exposure.

APPROVAL: Ray D. Bass
CHIEF ENGINEER

APPROVAL: D.M. Jim
TRANSPORTATION DIRECTOR

4-29-03
DATE

ALABAMA DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: GUIDELINES FOR TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS COMMITTEE

Section I – Purpose

This guideline replaces the June 2012 version of GFO 3-59 *"Guidelines for Intelligent Transportation Systems (ITS) Oversight and Advisory Committees"*. The ITS Oversight Committee was abolished as of the February 4, 2019 update of the ALDOT In-House Committee Structure. The ITS Advisory Committee will be revised and renamed as the Transportation Systems Management and Operations (TSMO) Committee.

The TSMO Committee will serve as a forum to advance capability maturity dimensions, utilizing AASHTO guidance, across the defined TSMO Service Layers in the statewide plan. This will be accomplished by assessing innovative technologies and industry best practices, fostering collaboration across Bureaus/Regions/Areas, continuing to formalize business processes, promoting a responsible culture, and reinforcing accountability within a developing workforce. The committee will review and approve TSMO Project Proposals as the initial step of the Systems Engineering Analysis process defined within GFO 3-69 *"Transportation Systems Management and Operations (TSMO) Project Approval and Authorization"*. The committee will develop and implement statewide standards, policies, and procedures for the planning, design, construction, implementation, maintenance, and operations of TSMO related projects. Institutionalization of TSMO requires collaboration with multiple stakeholders, across jurisdictional boundaries. This committee will serve as the communication center to address institutional issues by statewide policy. This guideline updates the makeup of the statewide TSMO Committee which functions as a framework by which policy decisions can be made by a committee and recommendations made to ALDOT leadership.

Section II – Definitions

For the purposes of this document, the following terms are defined:

Transportation Systems Management and Operations (TSMO) is defined as integrated strategies to optimize the performance of existing infrastructure through the implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects designed to preserve capacity and improve security, safety, and reliability of the transportation system.

TSMO Project is defined as any project that improves the safety of customers and workers, realizes additional capacity, improves mobility and reliability, and establishes foundations for future innovations of the multimodal/intermodal transportation system through the deployment of technologies, operational strategies, or exercise of best practices.

Stakeholder is defined as a public agency, private organization, academia, or customer who shares a vested interest or a "stake" in one or more TSMO service layers to improve or utilize Alabama's transportation system.

Section III – Committee Structure

The TSMO Committee shall consist of top-level management or senior staff. Each of the offices listed below shall have one vote. A member may assign a proxy to vote in their absence. It is perceivable that Bureau and Region offices may have multiple sections with staff who have a vested interest in the committee and relative daily duties. These individuals are encouraged to attend and participate but shall not exercise voting rights.

Computer Services Bureau	North Region
Construction Bureau	East Central Region
Design Bureau	West Central Region
Maintenance Bureau	South East Region
Local Transportation Bureau	South West Region
Media and Community Relations *(ex-officio)*	FHWA Alabama Division *(ex-officio)*

The committee shall have a Chairperson, Vice-Chairperson, and Secretary who shall be elected from the membership during the first meeting of each odd year. The Chairperson shall schedule and conduct the committee meeting(s). The Vice-Chairperson will schedule and coordinate presentation requests to the committee and conduct committee meeting(s) in the absence of the Chairperson. The Secretary shall set the meeting calendar and reserve the needed resources to facilitate the meeting(s), record and archive all meeting minutes, and distribute agendas and past minutes for each meeting.

A quorum shall be established by simple majority. A quorum must exist to conduct a vote. The vote should be conducted face-to-face when practical but may be allowed electronically as deemed necessary by the Chairperson.

RECOMMENDED FOR APPROVAL:

Stacey L. M

STATE MAINTENANCE ENGINEER

Steven E. Walker

STATE DESIGN ENGINEER

APPROVAL:

CHIEF ENGINEER/DEPUTY DIRECTOR

APPROVAL:

TRANSPORTATION DIRECTOR

12/22/2020

DATE

Revised 12/10/2020

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: COMPLIANCE WITH FLOODPLAIN REGULATIONS

In accordance with Title 23, Part 650, it is the intent of the Department to comply with the requirements of the Federal Emergency Management Agency (FEMA) in flood zones with respect to the National Flood Insurance Program (NFIP).

The four cases where coordination with FEMA (through the local community) is required are:

1. A proposed crossing encroaches on a regulatory floodway requiring an amendment to the floodway map.

2. A proposed crossing encroaches on a floodplain where a detailed study has been performed but no floodway designated and the maximum 1 foot increase in the base (100 year) flood elevation would be exceeded.

3. A local community is expected to enter into the regular program within a reasonable period and detailed floodplain studies are underway.

4. A local community is participating in the emergency program and the base flood elevation in the vicinity of insurable buildings is increased by more than 1 foot. (Where insurable buildings are not affected, it is sufficient to notify FEMA of changes to base flood elevations as a result of highway construction).

During the corridor study phase, the draft EIS/EA should indicate the NFIP status of affected communities, the encroachments anticipated and the need for floodway or floodplain ordinance amendments. If coordination with FEMA is required, and a determination by them would influence the selection of an alternative, a commitment from FEMA indicating acceptance of the revision should be obtained prior to the FEIS or FONSI. Otherwise, this coordination may be postponed until the design phase.

Where a regulatory floodway is delineated it is the goal of the Department to design and construct a roadway to avoid encroachment on the floodway unless it is demonstrably inappropriate. Bridge piers are normally not considered an encroachment if conditions can be improved so that the computer printout shows no rise of water surface elevation – see Attachment 2 to NS 23 CFR 650A. Where it is not cost-effective to design a highway crossing to avoid encroachment on an established floodway, a second alternative would be modification of the floodway itself through widening the floodplain, increasing

conveyance or some other method. Only when the above options are determined to be inappropriate, should a design which raises the base floodplain elevation over 1 foot be considered.

For encroachment on a floodplain where no floodway is delineated by a detailed study but a floodplain is indicated on a Flood Hazard Boundary Map (FHBM), base floodplain elevations should be furnished to the community by the Department. If the base flood elevation is increased over 1 foot in the vicinity of insurable buildings coordination with FEMA is required. Where no designated floodplain is shown, a hydrological and hydraulic analysis is to be performed and a risk assessment form completed.

The local floodplain administrator of a participating community should be consulted in all cases to determine if the proposed highway action is consistent with existing watershed and floodplain management programs and to obtain current information on development and proposed actions in the affected watershed(s).

The Department will design in accordance with the minimum FEMA standards. If a community adopts a more stringent flood plain ordinance than the minimum requirements of the NFIP, the Department may construct in accordance with the local ordinance provided the community agrees to pay for the additional design and additional construction cost of the project plus any additional incidental cost that may be associated with this ordinance.

RECOMMENDED FOR APPROVAL: _____
William F. Adams, PE, BUREAU CHIEF

APPROVAL: _____
D. W. Vaughn, PE, CHIEF ENGINEER

APPROVAL: _____ 10/10/06
D.J. McInnes, TRANSPORTATION DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINE FOR OPERATION

SUBJECT: WORK ZONE SAFETY AND MOBILITY

As required by 23 CFR Part 630, FHWA Rule on Work-Zone Safety and Mobility, ALDOT will follow the steps outlined below in providing a Transportation Management Plan, TMP, for projects in order to safely and efficiently accommodate the traffic through work zones.

A. Definitions

1. Transportation Management Plan (TMP) – The TMP consists of strategies to manage the work zone impacts of a project. A TMP will generally contain three components: a temporary Traffic Control Plan (TCP), a Transportation Operations (TO) component, and a Public Information (PI) component. Many projects will have less than significant impacts and the TMP may consist of only a TCP.

2. Traffic Control Plan (TCP) – The TCP is a designed plan consistent with the latest ALDOT adopted version of Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) that depicts how traffic is managed through the work zone. The level of detail will vary greatly depending on the complexity of a project.

3. Transportation Operations (TO) component – the TO component identifies strategies to mitigate impacts to traffic through the work zone. This component will vary in scope based on the project complexity. Many projects will merely require a lane closure analysis to determine acceptable hours of closure to perform the work. Some projects may require widening to maintain an acceptable capacity through the work zone. Other projects may require construction of the total route with a road closure and diversion to an alternate route. In this case improvements on the alternate route may be needed such as intersection improvements, signal re-timing, capacity and/or other alternate route improvements to enhance mobility of the major project construction. Incident Management, Intelligent Transportation Systems (ITS), Ramp Metering, and other strategies may also be considered on an as-needed basis to maximize TO through the work zone. All strategies that are to be implemented shall be clearly stated in the TMP.

4. Public Information (PI) component – the PI component includes strategies to inform the public of the work zone impacts and receive input from stakeholders such as emergency officials, regional medical staff, affected industry and commerce, and others. These strategies can include media announcements for lane closures and traffic shifts, web page updates of closures, message boards with real-time lane closure and alternate route information, etc. with the goal of

providing the public with information needed to minimize the work zone impacts to the extent practical. The level of PI effort will vary in scope based on the complexity and anticipated impacts of the project.

5. Responsible Persons – the responsible persons will be assigned at the project level by both the State and the Contractor and will have primary responsibility and sufficient authority for implementing the TMP and other safety and mobility aspects of the project. The responsible person for the State will be identified by position (i.e. the construction project manager or the area construction engineer) in the TMP. The responsible person for the Contractor will be determined after the contract is awarded for construction but before work actually begins.

6. Significant Project – A significant project is identified as meeting one of the following criteria:
    a. A project on the Interstate System within a designated Transportation Management Area that occupies a location for more than 3 days with either intermittent or continuous lane closures.
    b. Any other project deemed appropriate by the Regional Engineer or Chief Engineer which is anticipated to have impacts that are greater than are typically considered tolerable.

    The TMP for a Significant Project will include a TCP, a TO component, and a PI component.

7. Transportation Management Area – These are defined based on the latest Census data. As of the 2010 Census the TMAs cover the following Interstate routes:
    a. Huntsville (Limestone and Madison Counties):
        i. I-65 from the north end of the TN River bridges to south of Exit 347 (Tanner)
        ii. I-565 entire route
    b. Birmingham (Blount, Jefferson, Shelby, and St. Clair Counties):
        i. I-20/59 from the Tuscaloosa County line to the I-20/59 split
        ii. I-20 from the I-20 / 59 split to Exit 152 (Cook Springs)
        iii. I-59 from the I-20 / 59 split to St. Clair County Road 31 (M. P. 160.7)
        iv. I-22 from the Walker County line to I-65
        v. I-65 from the Chilton County line to the Cullman County line
        vi. I-459 entire route
    c. Montgomery (Autauga, Elmore, and Montgomery Counties):
        i. I-65 from the Lowndes County line to Autauga County Road 59 (M. P. 191.8)
        ii. I-85 from I-65 to the Macon County line
    d. Mobile (Mobile County):
        i. I-10 from the Mississippi State line to the Baldwin County line.
        ii. I-65 from I-10 to the south end of the Mobile / Tensaw River bridges
        iii. I-165 entire route

B. Process for Significant Projects

1. Determine if a project is significant as early as possible in the project development process but no later than the Plan In Hand Inspection. If it is determined to be significant, the Project Lead will assemble a multi-disciplinary team (including Regional Pre-Construction, Materials, Public Information, and Construction members, the Design Bureau, and FHWA) to evaluate the potential work zone impacts of the programmed project. Based on the anticipated impacts, the project lead will begin the planning of project TMP requirements.
2. Collect data to further evaluate TO strategies for the project. This may include hourly traffic counts, existing pavement removal / rehabilitation strategies, existing shoulder buildup, bridge construction methods, required utility relocation, crash data / analysis, available detour routes, etc....
3. Define a project scope that details the required work, the agreed-upon traffic operations level, and the TO and PI components that are needed.
4. Program secondary projects, if necessary, to have off-site detours, utility relocations, etc. in place prior to the major project.
5. Meet with stakeholders, as appropriate, to provide information and receive input regarding work zone impacts (such as ramp closures, detour routes, traffic delays, etc.) that will affect local traffic operations. Stakeholders may include representation from local city / county officials, police departments, fire departments, emergency management agencies, transit agencies, school board transportation officials, ambulance services, Traffic Management Centers, hospitals, city engineers, county engineers, etc.
6. Further refine the TMP during the plan development and modify as needed.
7. During the PS&E (85% Review), in consultation with the Construction Engineer, decide on the contractual methods, if any, to expedite construction such as incentives / disincentives, bonuses, reduced construction completion times, nighttime work, etc.
8. Working with the Chief Engineer's Office and the Regional Public Information Specialist develop the framework for the PI component. Incorporate any contractor responsibilities in the contract such as advance notification to the project manager of traffic shifts, lane closures, roadway closures, variable message sign content and location, etc.
9. Prior to submitting 100% complete plans to the Office Engineer for bidding, the Project Lead will submit the completed TMP to the Region Public Information Specialist and Area Operations Engineer for concurrence and the Region Engineer for final approval.
10. The original of the approved TMP must be transmitted to the Office Engineer with the 100% complete plans for inclusion in the bid documents for project letting.

C. Process for Other Projects

1. Develop the TCP as appropriate for the project complexity and location

2. If lane closures are required, evaluate the impact by conducting a lane closure analysis to determine queue length. Restrict lane closures to times that minimize queue formation.
3. Employ TO and PI strategies as noted above as deemed necessary by the Region Engineer.

RECOMMENDED FOR APPROVAL: Steven E. Walker
STATE DESIGN ENGINEER

APPROVED:
CHIEF ENGINEER

APPROVED: John R. Cooper
TRANSPORTATION DIRECTOR DATE

Rev. 2/2017

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: UTILITY RELOCATION REIMBURSEMENTS

As per § 23-1-5 of the Code of Alabama, the Director of Transportation shall determine and order that the relocation of any utility facility is necessitated by the construction of any highway.

The eligibility for reimbursement of the cost to relocate utilities in conflict with the highway construction projects shall be determined based on total corporate gross income of the company as a whole, not on franchise or subsidiary revenues.

A utility may be asked to provide financial information as a condition of utility agreement approval.

A utility that erroneously reports that its earnings make it eligible for reimbursement when it is not eligible, will be required to repay the funds to the Department.

RECOMMENDED FOR APPROVAL Steven E. Walker
BUREAU CHIEF / DIVISION ENGINEER

APPROVAL: Neal Vaughn
CHIEF ENGINEER

APPROVAL: [illegible]
TRANSPORTATION DIRECTOR

DATE: 4/9/10

ALABAMA
DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: PERMANENT AND TEMPORARY GROUND MOUNTED IMPACT ATTENUATORS

On all projects containing the Items of VEHICULAR IMPACT ATTENUATOR ASSEMBLY (720A-XXX) and PORTABLE IMPACT ATTENUATOR ASSEMBLY (726D-XXX),the "Ground Mounted Impact Attenuator Selection Chart" located on the Design Bureau website must be used to select an approved impact attenuator for use on all ALDOT projects.

RECOMMENDED FOR APPROVAL: _____
State Design Engineer

APPROVED: _____
Chief Engineer

APPROVED: _____ 4/10/10
Transportation Director Date

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: CONCURRENT PLAN REVIEWS

It will be necessary to obtain approval in writing from the **Chief Engineer** before Concurrent Plan Reviews for Construction and Quality Control. While concurrent reviews are discouraged, some cases may warrant his approval.

RECOMMENDED FOR APPROVAL: _____
ASST. CHIEF ENGINEER, PRECONSTRUCTION

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 7-8-10
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINE FOR OPERATION

SUBJECT: TEMPORARY TRAFFIC CONTROL DEVICES

As required by 23 CFR Part 630, Subpart K, FHWA Rule on Temporary Traffic Control Devices, ALDOT will follow the Guidelines outlined below in order to decrease the likelihood of fatalities and injuries to workers and road users within the highway work zone.

I. Positive Protection Devices

Introduction

Positive Protection Devices are devices that contain and/or redirect vehicles and meet the crashworthiness evaluation criteria contained in the National Cooperative Highway Research Program (NCHRP) Report 350 or, the American Association of State Highway and Transportation Official's (AASHTO's) Manual for Assessing Safety Hardware (MASH). Positive Protection Devices are designed to prevent the intrusion of motorized traffic into the work space and other potentially hazardous areas in the work zone. These devices include Portable Concrete Safety Barriers (PCSB), moveable traffic barrier systems, water filled longitudinal channelizing devices, guardrails, shadow or protective vehicles and truck or trailer mounted attenuators (TMA), and other types of crash cushions or vehicle arresting systems.

Considerations for Positive Protection Devices

The requirement for the use of Positive Protection Devices will be shown on the plans or as determined by the engineer based on project characteristics such as speed, traffic volumes, worker exposure, roadway geometry or type of work.

Positive Protection Devices should be considered in work zone situations that place workers at increased risk from motorized traffic, and where Positive Protection Devices may offer a higher potential for increased safety for workers and road users. Such locations or situations include but are not limited to;

- Work zones that provide workers no means of escape from motorized traffic (e.g., tunnels, bridges, etc.)
- Work zones which occupy a location continuously for duration longer than two weeks resulting in substantial worker exposure to motorized traffic.

- Projects with work zone posted speeds of 45 mph or greater, especially when combined with high traffic volumes.
- Work operations that place workers and equipment close to travel lanes open to traffic.
- Roadside hazards, such as drop-offs or bridge decks that will remain in place overnight.
- Combinations of the above factors.

Table 1 below should be used as a warrant guide to determine when Portable Concrete Safety Barrier is to be used. Typically, Portable Concrete Safety Barrier is not warranted for TCP speed limit less than 45 mph.

Portable Concrete Barrier						
Warrant Guide (TCP Speed Limit of 45 mph and above)						
	Location	**Drop off**	**TCP Offset[1]**	**Worker Exposure Concentration**	**Barrier Warranted**	**Comments**
	Bridge/ Tunnel	Any	Any	Any	Yes	Applies to work zones with no means of escape from a vehicle entering the work area. Also applies to any removal of the railing for a drop off hazard.
Worker Protection	Stationary Work (Culvert Extension, etc...)	Any	Less than 20'[2]	High	Yes	Applies to work operations that are labor intensive (such as tying steel, formwork, etc...) and stationary[3]
	Overnight Concrete Slab Repair	Any	2' or Greater	Any	No	Applies to overnight operations that make the placement of barrier impractical. Provide shadow vehicle protection as practical
Drop off Protection	Interstate Lane Addition Long Duration Pavement Drop off	Less than 1.5'	8' or Greater	Any	No	Requires use of Vertical Panels. Include Incentive/Disincentive clause (based on RSAP analysis) in the Contract as an exposure mitigation technique. Limit to 2 lanes maximum in each direction with a maximum total Average Daily Traffic (ADT) of 50,000. Barrier required for more than 2 lanes per direction or ADT > 50,000.
	Pavement Drop off	4.5" - 8"	0'	Any	Yes	Barrier not warranted if a 4:1 wedge is provided
		> 8"	0'	Any	Yes	
		4.5" - 8"	3'	Any	No	Use 3:1 Wedge or barrier without wedge
		8" - 1.5'	3'	Any	No	Use 4:1 Wedge or barrier without wedge
		> 1.5'	10'	Any	No	Use 4:1 Wedge or barrier without wedge
	Separation of Opposing Traffic				Yes	Use a barrier for interstate and for divided high speed facilities with high truck volumes.
	[1] The nearest TCP Phase to the drop off. Barrier may be warranted in one phase and not another.					
	[2] For slopes flatter than 3:1. Slopes steeper then 3:1 should have barrier regardless of TCP offset distance.					
	[3] Stationary for worker exposure is 2 weeks.					

Table 1

Exposed ends of barriers should be treated as described in Chapter 9 of the AASHTO Roadside Design Guide. End treatments for terminating barrier within the work zone clear zone shall be crashworthy as per NCHRP Report 350 or MASH and as approved and shown on ALDOT Standard Drawings.

If it is determined that Positive Protection Devices will not be used, implementation of Exposure Control Measures, Section II or Other Traffic Control Measures, Section III should be considered.

Protective Vehicles and TMAs

Recommendations for use of protective vehicles and truck mounted attenuators for worker protection are normally associated with maintenance operations and are generally not covered in this guideline. However, refer to Table 1 for guidance on the use of shadow vehicle protection on overnight concrete slab repair work.

II. Exposure Control Measures

Introduction

Exposure Control Measures are traffic management strategies which may be employed to avoid work zone crashes involving workers and motorized traffic by eliminating or reducing traffic through the work zone, or diverting traffic away from the work space.

Considerations for the Use of Exposure Control Measures

Exposure Control Measures should be considered where appropriate for use on individual projects, and especially for those projects designated as significant. Exposure Control Measures may include but are not limited to the following:

- Full roadway closures
- Off-site detours or alternate routes
- Ramp closures or relocations
- Rolling road blocks during setup and removal of traffic control devices.
- Two-way traffic on one side of a divided facility
- Night work
- Weekend work

- Work hour restrictions
- Accelerated Construction Strategies such as Incentives/Disincentives for the entire project or for particular phases

III. Other Traffic Control Measures

Introduction

Other Traffic Control Measures include all strategies and temporary traffic controls used to reduce the risk of crashes involving motorized traffic, other than Positive Protective Devices and Exposure Control Measures.

Considerations for the Use of Other Traffic Control Measures

These other Traffic Control Measures, which are not mutually exclusive, should be considered in combinations with Positive Protection Devices and Exposure Control Measures as appropriate based on project characteristics and factors (e.g., scope, duration, traffic volume, worker exposure, time of day, etc.). Other Traffic Control Measures include a wide range of strategies and devices such as:

- Credible signing
- Changeable message signs
- Arrow panels
- Temporary or portable traffic signals
- Intrusion alarms
- Temporary rumble strips
- High quality pavement markings and removal of misleading markings
- Warning lights
- Cooperative or dedicated (paid) police enforcement or presence
- Increased penalties for work zone violation
- Longitudinal and lateral buffer spaces
- Speed limit reductions
- Dynamic speed message signs
- Reduction of channelizing device spacing
- Longitudinal channelizing barricades
- Trained flaggers
- Pace or pilot vehicles
- Drone Radar
- Enhanced worker visibility
- Public and traveler information

IV. Uniformed Law Enforcement Officers

Introduction

The use of law enforcement in work zones has proven to be effective in enhancing the safety of workers and road users. The presence of a uniformed law enforcement officer and a marked law enforcement vehicle in view of the motorized traffic on a highway project can affect driver behavior, helping to maintain appropriate speeds and improve driver alertness through the work zone.

Considerations for the use of Law Enforcement in Work Zones

In general, the need for law enforcement is greatest on projects with high traffic speeds and volumes, and where the work zone is expected to result in substantial disruption to or changes in normal traffic flow patterns. During the Plan-In-Hand inspection the Division Construction Engineer should be consulted to determine the need for law enforcement in the work zone. If law enforcement is recommended, the Division Construction Engineer should also recommend to either include Item 745-A Uniformed Police Officer, in the plans or to utilize State Troopers in accordance with the agreement between ALDOT and ALDPS. Specific project conditions should be examined to determine the need for or the potential benefit of law enforcement in the work zone, such as the following:

- Frequent worker presence adjacent to high speed traffic without positive protection devices
- Traffic control setup or removal that presents significant risks to workers and road users
- Complex or very short term changes in traffic patterns with significant potential for road user confusion or worker risk from traffic exposure
- Night work operations that create substantial traffic risk for workers and road users
- Existing traffic conditions and crash histories that indicate a potential for substantial safety and congestion related to the work zone activity and that may be mitigated by improved driver behavior and awareness of the work zone
- Work zone operations that require brief stoppage of all traffic in one or both directions
- High speed roadways where unexpected or sudden traffic queuing is anticipated, especially if the queue forms a considerable distance in advance of the work zone or immediately adjacent to the work area
- Other work site areas where traffic presents a high risk for workers and road users, such that the risk may be reduced by improving road user behavior and awareness

V. Work Vehicles Entering/Exiting Traffic Lanes

Introduction

Construction, maintenance and utility work zones should be designed to allow for safe access from or entrance to travel lanes by work vehicles or equipment and for delivery of construction materials.

Considerations for Enhancing Safety at Work Zone Access Points

Strategies which may aid in this objective include, but are not limited to:

- Flaggers stationed and signed for appropriately
- Advanced warning signs for driveway locations
- Advance warning using "TRUCKS ENTERING/EXITING ROADWAY" signs
- Advance warning using portable changeable message signs
- Temporary turn lanes or shoulder lanes approaching access points
- Access from work space via a closed lane where merging into a lane is not necessary
- Temporary rumble strips
- Dynamic speed message signs
- Uniformed law enforcement officers in marked vehicles

VI. Maintenance of Temporary Traffic Control Devices

Introduction

The condition of traffic control devices should be maintained clean, reflective and in proper location in order to remain functional. To provide for the continued effectiveness and to help maintain the quality and adequacy of the temporary traffic control devices for the duration of each project, traffic control devices should be inspected or reviewed as described in the Construction Manual.

Quality Guidelines

To assist in the assessment of the condition of traffic control devices in place on projects in the field refer to the Traffic Control Procedure Section of the ALDOT Construction Manual.

RECOMMENDED FOR APPROVAL: _____
State Design Engineer

APPROVED: _____
Chief Engineer

APPROVED: _____ 2/25/2011
Transportation Director Date

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: ENVIRONMENTAL CLEARED LIMITS AND ENVIRONMENTAL COMMITMENTS

Environmental Cleared Limits will be displayed on all plan sheets showing right-of-way limits, including cross sections. When the Environmental Cleared Limits and the right-of-way are congruent throughout the project only the right-of-way limits will be displayed and the standard note, "Right-of-Way and Environmental Cleared Limits are congruent throughout the project unless otherwise shown on the plans," will be placed on the General Notes Sheet as part of the 400 series.

The process given below is provided for showing these limits within the plan assembly, assuring the project is designed within the Cleared Environmental Limits and the Environmental Commitments are addressed.

1. The Environmental Technical Section (ETS) of the Design Bureau will create a CAD file showing only the Cleared Environmental Limits. This CAD file will be titled "*xxxxx*_ENV.dgn," (*xxxxx shall be the last 5 digits of the CPMS Preliminary Engineering number*) and will be submitted to the project lead at the beginning of the final design process. ETS will also submit the portion of the Environmental Document that contains the Environmental Commitments.

2. A Project Scope of Work meeting, in accordance with the Guideline for Developing Construction Plans, shall be held prior to beginning final design and the Environmental Technical Section (ETS) of the Design Bureau will have a representative present to make sure the Cleared Environmental Limits and the Environmental Commitments are correct. It shall be the responsibility of the project lead to make sure the Cleared Environmental Limits and Environmental Commitments are provided and approved by ETS before beginning the final design.

3. It shall be the responsibility of the project lead to maintain the design within the Cleared Environmental Limits at all times during the design process if possible. Should the design go outside the Cleared Environmental Limits or conflict with the Environmental Commitments, the designer shall contact ETS to request approval for the additional area needing clearance.

4. ETS shall review the request, and submit written approval or coordinate with the project lead to resolve issues preventing approval.

5. The project lead shall submit a partial plan set (title, plan/profile, and project note sheet) to ETS. This submittal shall be made prior to:

    - Right-of-Way Authorization
    - Construction Bureau Review

6. ETS shall determine if the Cleared Environmental Limits are accurately shown, if the project design is within these limits, and if all Environmental Commitments have been addressed. Written approval from ETS must be given prior to making the submittal for Right-of-Way Authorization and Construction Bureau Review. This approval documentation must accompany each submittal. The designer shall insert a copy of the approval documentation from ETS in the Construction Best Management Practices Plan (CBMPP) so it can be completed and submitted to ADEM.

RECOMMENDED FOR APPROVAL: _____
STATE DESIGN ENGINEER

APPROVAL: _____
CHIEF ENGINEER/DEPUTY DIRECTOR

APPROVAL: _____ 5/1/2011
TRANSPORTATION DIRECTOR DATE

ALABAMA
DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: RETAINING WALL PLAN DRAWINGS

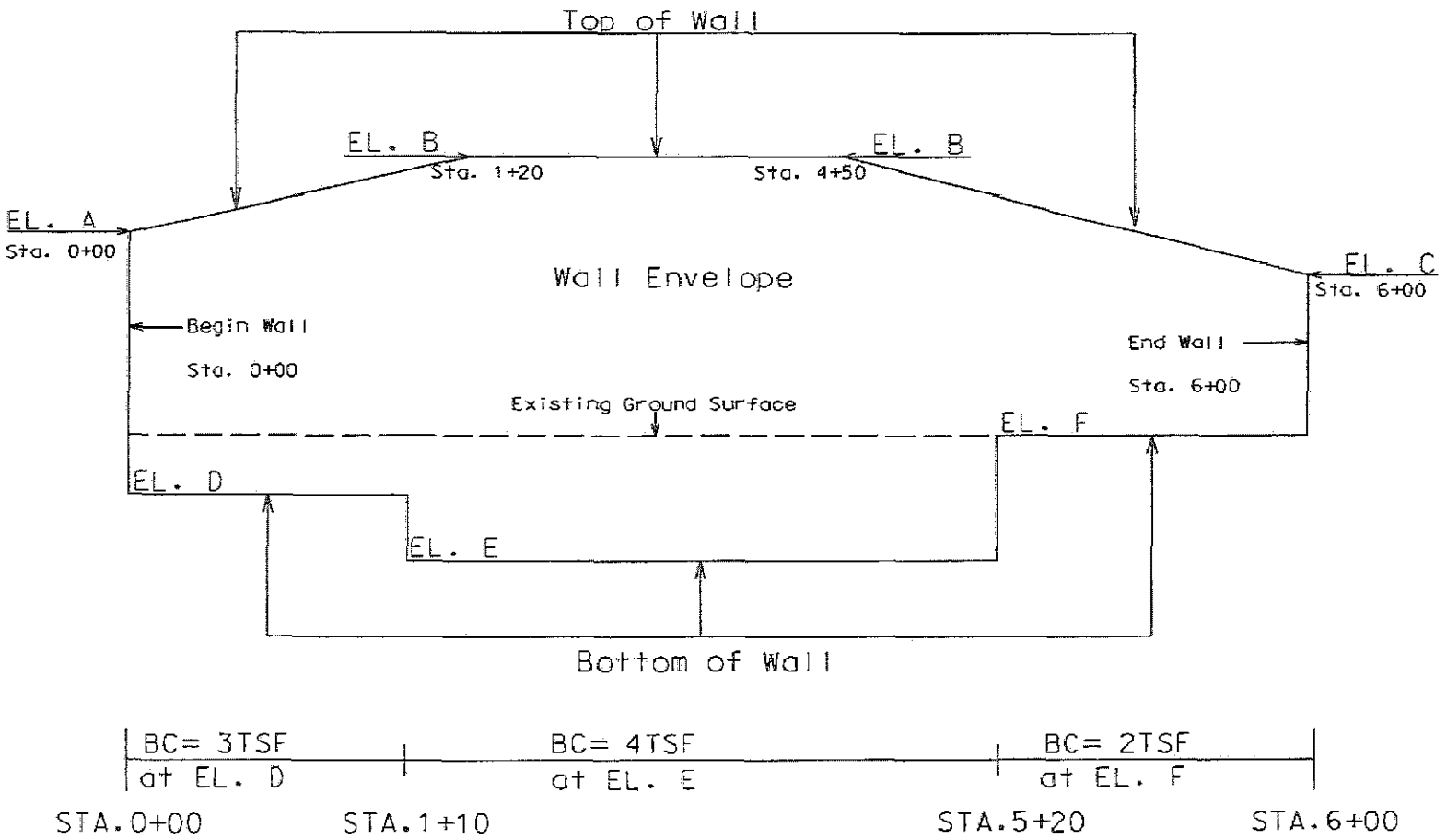
The purpose of this guideline for operations is to standardize the details provided on all projects containing the Pay Item of RETAINING WALL (529A). The following items shall be detailed in the plans as part of the wall envelope. (Typical details are shown on the attached drawings.)

- Plan and Profile views detailing the horizontal location and length of each proposed wall. If the horizontal and/or vertical location as shown is critical for design purposes, due to other controlling factors such as utilities, provide the reasoning for the location in the wall envelope notes.
- Beginning Station and Ending Station of the wall
- Top of wall elevation, which shall not include any barrier rail which may be placed above the wall
- Bottom of the wall is defined as the elevation of the bottom of the footing or leveling pad where the bearing capacity for the wall was calculated. The bearing capacity of the founding soils after any ground improvements shall be provided along the length of the wall. (The bottom of the wall elevation shall not be the bottom elevation of any keyway which may be included for sliding resistance.)
- If the elevations for the top of the wall or bottom of the wall vary along the length of the wall, the variation in elevation should be properly noted on the wall envelope sheet at each change in elevation.
- If more than one retaining wall is included in the plan set, each individual wall shall be uniquely identified and appropriate quantities and separate pay items developed for each wall.
- Abutments founded on fills, or on piles extending through the fill, with wrap around walls shall be considered to have three individual walls for each abutment.
- No notes shall be added to the plans which require a deviation from the current retaining wall standard specification without approval of the State Design Engineer.

RECOMMENDED FOR APPPROVAL: _____
State Design Engineer

APPROVED: _____
Chief Engineer

APPROVED: _____
Transportation Director Date



BC= Bearing Capacity
at Bottom of Wall
after Ground Improvement

NTS

Figure 1
Wall Envelope

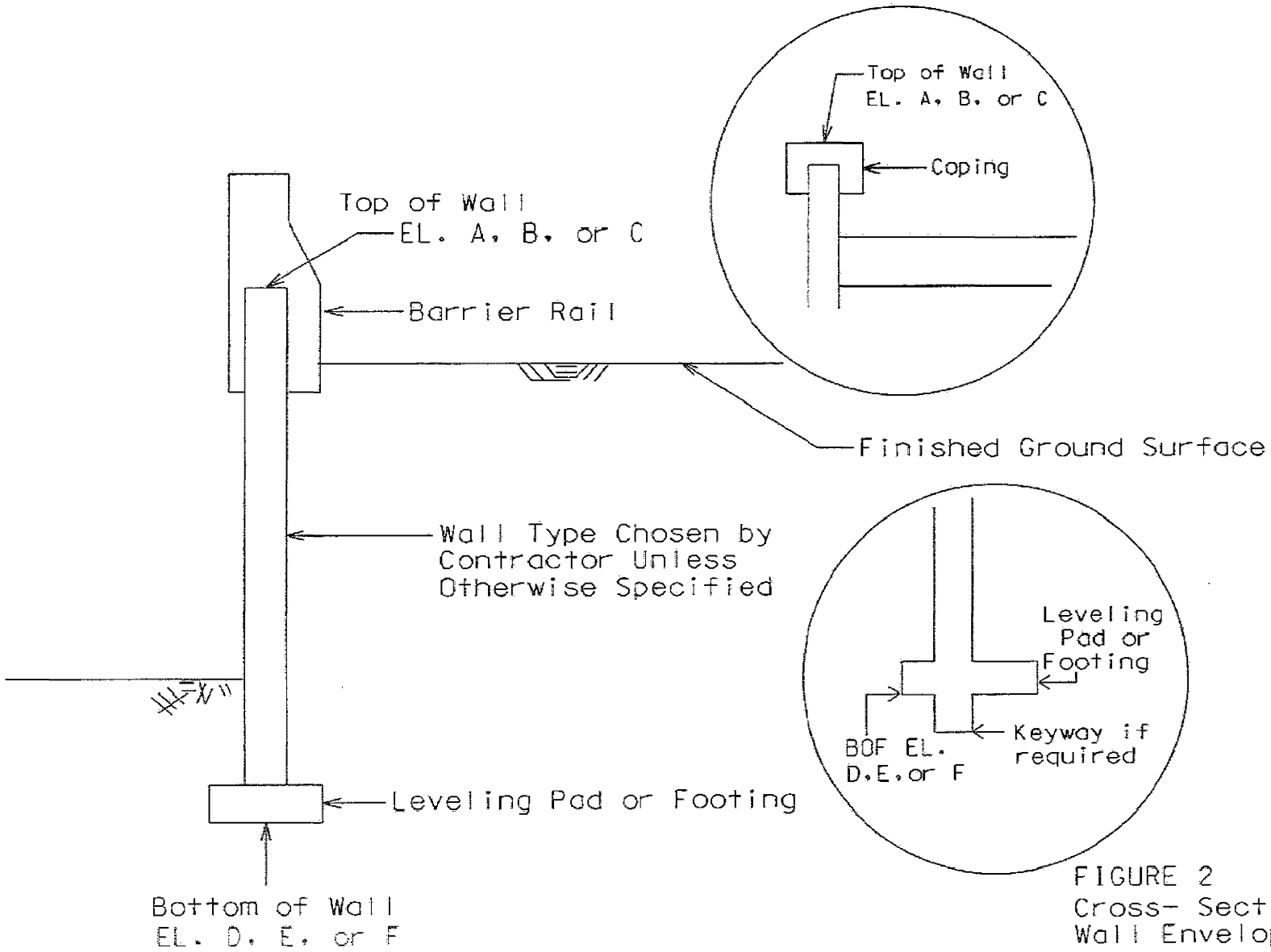


FIGURE 2
Cross- Section of
Wall Envelope

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: LIGHTING AND SIGNALS FOR STRUCTURES OVER WATERWAYS

Section 144(h) of Title 23 U.S. Code was enacted in 1978 and amended by Act of April 2, 1987 (Public Law 100-17) to reduce paperwork and related costs in the execution of the U.S. Coast Guard's bridge permit programs. By reason of these provisions, certain bridges/structures which are constructed, reconstructed, rehabilitated, or replaced with federal assistance imposed under Title 23 U.S. Code are no longer subject to the permitting requirements imposed under 33 U.S.C. 401 and 525(b). The bridges/structures that fall into this excluded category are those that cross waterways:

(1) which are not used and are not susceptible to use in their natural condition or by reasonable improvement as a means to transport interstate or foreign commerce; and

(2) which are non-tidal, or if tidal, used by vessels no greater than 21 feet in length

Bridges/structures that fall into this excluded category will not require lighting and/or other signals.

Bridges/structures that do not fall into this category will require navigational lighting and/or signals in accordance with U.S. Coast Guard requirements. Details of the proposed lighting/signal plan shall be included in the bridge permit application submitted to the U.S. Coast Guard for approval.

Exceptions to this guideline shall have prior approval of the Chief Engineer.

RECOMMENDED FOR APPROVAL: _____
BRIDGE ENGINEER

APPROVAL: _____
CHIEF ENGINEER/DEPUTY DIRECTOR

APPROVAL: _____ 6/29/11
TRANSPORTATION DIRECTOR DATE

ALABAMA DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: GUIDELINES FOR TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS PROJECT APPROVAL AND AUTHORIZATION

Section I – Purpose

This guideline replaces the January 2012 version of GFO 3-69 *"Guidelines for Intelligent Transportation Systems (ITS) Project Approval and Authorization"*.

The State Transportation Systems Management and Operations (TSMO) Program identifies strategic locations to improve mobility and safety of the transportation network through the deployment of technologies, operational strategies, and best practices. These projects utilize various data sets to quantitatively and qualitatively identify highest priority needs across the program's defined service layers. These projects as well as locations unforeseen by the program shall be subject to the following procedure regarding the approval and authorization of such projects, regardless of funding sources. This will ensure ALDOT and its stakeholders appropriately consider all elements of the planning, design, construction, maintenance, and operation phases to achieve desired objectives.

Requests for projects shall be submitted in writing to the TSMO Committee for consideration.

Section II – Systems Engineering Analysis (SEA)

§ 23 CFR 940.11 requires the use of SEA for project funding and implementation.

Systems Engineering is an interdisciplinary approach and means to enable the realization of successful systems. It focuses on defining customer needs and required functionality early in the development cycle, documenting requirements, then proceeding with design synthesis and system validation while considering the complete problem. Systems Engineering integrates all the disciplines and specialty groups into a team effort forming a structured development process that proceeds from concept to production to operation. Systems Engineering considers both the business and the technical needs of all customers with the goal of providing a quality product that meets the user needs.

Section III – Approval Process

TSMO Projects shall utilize the current version of the ALDOT SEA template documents to develop the SEA for each project.

Step 1 – TSMO Project Proposal shall be submitted to the TSMO Committee. The Committee will first determine if the project is warranted based upon majority approval. A project will be considered warranted if the Committee determines that:

1. the project satisfies the objectives of the stated TSMO Vision, Goals, and Objectives,
2. the project advances one or more dimensions of capability maturity,
3. the project addresses one or more TSMO service layers,
4. the project is identified in the State/Region TSMO Plan or State/Region ITS Architecture.

If the project is deemed unwarranted, the submitting authority shall address the deficiency, then resubmit to the Committee for reconsideration.

Step(s) 2 - 6 of the SEA will be completed, submitted, and approved incrementally in association with defined Guide for Developing Construction Plans (GDCP) steps, as outlined below. The submittal, review, and comment process should include TSMO Committee stakeholders commensurate with the scale of the project.

SEA Step #	SEA Description	GDCP Step #	GDCP Description
1	TSMO Project Proposal		
2	Concept of Operations	0	PE Authorization
3	System Requirements	11	Project Scope
4a	Requirements Traceability Verification Matrix	53	Traffic Design Coordination
4b	System Verification Plan	65	Plan-In-Hand Inspection
5	System Validation Plan	70	ITS SEA
6	Operational Development Plan	85	PS&E Inspection

No TSMO project shall be eligible for authorization unless it first receives approval from the TSMO Committee. The fully executed SEA shall become part of the project file.

Any deviation from these procedures shall have prior written approval from the Chief Engineer.

RECOMMENDED FOR APPROVAL:

STATE MAINTENANCE ENGINEER

STATE DESIGN ENGINEER

APPROVAL:

CHIEF ENGINEER/DEPUTY DIRECTOR

APPROVAL:

TRANSPORTATION DIRECTOR

12/22/2020

DATE

Revised 12/10/2020

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: COUNTY BRIDGE PROJECTS USING PRECAST MEMBERS AND PILE BENT CONSTRUCTION

Precast bridges are intended for use on the State's County Road system only. Precast bridges are not for use on curved or skewed alignments or if the bridge is to be constructed on grade or in vertical curvature. Precast bridges shall be constructed in normal crown using a 3/16" per foot slope from centerline in accordance with the Precast Bridge Standard Drawings.

General Design Requirements

Precast bridges shall be designed in accordance with the AASHTO Standard Specifications for Highway Bridges, 17th Edition and latest interims, and the latest ALDOT Construction Specifications unless otherwise noted in this guideline. Live Load used in design shall be HS20-44. No future wearing surface dead load is to be considered in the design since overlaying of the bridge deck units with asphalt, concrete, etc. is not allowed.

The 25 year flood event shall be used in establishing finished grade. A minimum of 2 feet of freeboard shall be provided above the 25 year stage elevation in determining the low chord elevation. For foundation design, minimum factor of safety of 2.0 shall be provided for the unscoured condition and a minimum factor of safety of 1.10 shall be provided for the maximum scour event.

Foundation Investigation

Subsurface information shall be collected in general accordance with AASHTO R 13. Penetration tests ("N"-blow count) and split-barrel sampling shall be performed as given in AASHTO T 206. If auger refusal is reached within 20 feet of the drilling surface, coring below auger refusal elevation will be required. Cores shall be taken to a depth of 10 feet below auger refusal elevation in order to determine (1) the character of the non-augerable material and (2) if pile bents using pre-drilled pilot holes are a viable design or if an alternative foundation design should be considered.

A minimum of one boring per every three spans and one boring at each abutment shall be provided to determine soil types, soil layer thicknesses, and "N" (blow count) values. At least one boring shall be taken in or adjacent to the stream for the purpose of collecting soil samples to determine D50 values. D50 values shall be determined in accordance with ALDOT 442. Additional borings, testing and analyses such as settlement analysis may be necessary depending on geological site conditions and the presence of soft soils in the abutment area. (See Attachment "A")

If the County's Transportation Department has historical information on the existing bridge which includes sufficient engineering data regarding the subsurface conditions, then the county may simply gather D50 data from the streambed in order to calculate the anticipated scour depths. Sufficient engineering data would be defined as geotechnical borings with SPT-N values and soil descriptions for every five feet of penetration for the depth of the hole. The borings need to cover the entire bridge site and not be limited to a single location.

Scour

All precast bridges shall be designed for scour in accordance with FHWA's Hydraulic Engineering Circular No. 18 (HEC-18), Evaluating Scour at Bridges, 4th Edition.

Minimum Pile Size Requirements

The Department's Precast Standard Drawings are based on a minimum pile section of HP 12x53 for abutment piles and bent piles as well as wing and anchor piles. Design parameters satisfying this pile section are noted on the Precast Standard Drawings. The Designer of Record is responsible for determining the actual pile size requirements and any additional strengthening (bracing, encasements, etc.) that may be required when design parameters noted on the standard drawings are exceeded.

Pile Driving Requirements

All abutment piles, bent piles, and abutment anchor piles shall be installed in accordance with Section 505 of the Standard Specifications.

Wing piles shall be driven to refusal or 20', whichever is less. The minimum penetration for wing piles shall not be less than 10 feet into natural ground.

Test Piles and Loading Tests

Test piles and loading tests shall be provided in accordance with Section 505 of the Standard Specifications and as noted on the contract drawings.

Foundation Report

A foundation report, prepared by a licensed geotechnical engineer, shall be submitted on each project. The report, at a minimum, shall consist of an evaluation of the pile type that is recommended with a discussion of pile types considered and reason for not recommending. If drill shafts are the preferred foundation, then information on construction technique (wet/dry) shall be specified. The consultant shall make recommendations on pile/shaft tip elevations, minimum tips (where scour is considered), and estimated pile/shaft tips. The report shall also include recommendations on load test to include the number and location of each recommended test. Any unusual conditions or circumstances which could impact the foundation should be discussed. The report shall also include an evaluation of the approach fill to determine the amount of settlement and impacts on the bridge abutment.

Guideline Exceptions

All exceptions to this guideline shall have prior approval of the State Bridge Engineer.

RECOMMENDED FOR APPROVAL: _____
BRIDGE ENGINEER

APPROVAL: _____
ACTING CHIEF ENGINEER

APPROVAL: _____ 8/1/12
TRANSPORTATION DIRECTOR DATE

(Attachment A)

Core Boring Requirements

No. of Spans	Min. No. of borings	Comments
1	1	Taken between abutment and stream
2	2	Taken at one abutment and bent
3	3	Taken at both abutments & one bent
4	3	Taken at both abutments & one bent
5	3	Taken at both abutments & one bent
6	4	Taken at both abutments & two bents
7	4	Taken at both abutments & two bents
8	4	Taken at both abutments & two bents
9	4	Taken at both abutments & two bents
10	5	Taken at both abutments & three bents

Note: The above Table represents the minimum number of borings that are required in the absence of existing core boring information. If the bridge is to be replaced on existing alignment or in proximity to existing alignment and sufficient boring data *(data with penetration tests ("N"- values) or rock core with Recovery and RQD values)* is available from the previous foundation investigation that was conducted on the bridge to be removed, then consideration can be given to reducing the number of borings needed for design of the replacement structure.

As stated in the guideline, all precast bridges shall be designed for scour therefore one of the required borings noted above shall be taken in or adjacent to the stream in order to collect soil samples for determining D50 particle size values. Additionally, penetration tests ("N"-blow count) and split-barrel sampling shall be performed on this sample as given in AASHTO T 206 and the results of this testing/sampling shall used in design of the replacement structure.

STATE OF ALABAMA
DEPARTMENT OF TRANSPORTATION
GUIDELINES FOR OPERATION

SUBJECT: LOCALLY SPONSORED FEDERAL AID SIDEWALK PROJECTS

Locally sponsored Federal Aid sidewalk projects are under the oversight of the Department. The local agency is responsible for the design and construction of these projects with the approval of the Department and is responsible for assuring compliance with the applicable rules and regulations throughout the process. When issues arise that are questionable concerning the ability to comply with the applicable rules and regulations, the following process to document technical infeasibility shall be followed:

1. ALDOT will expect the cross slope of a sidewalk to be constructed at 2% or less where there are no physical constraints to prevent it from being achieved. If the local agency has a proposed area of construction that they believe the 2% or less cross slope to be technically infeasible, ALDOT will accept their interpretation of any constraint that is equal to or less than 8% cross slope, without any documentation. The local agency will be responsible for internally producing and retaining any required documentation. Any proposed area of construction that exceeds 8% cross slope will require the approval of ALDOT. The local agency shall document the area of technical infeasibility and submit to ALDOT for review and written approval. This approval shall be in place prior to the authorization for the construction of the Federal Aid project.
2. ALDOT will expect the longitudinal grade of any sidewalk to follow the general grade of the adjacent roadway. If the local agency has a proposed area of construction that they believe following the general grade of the adjacent roadway to be technically infeasible, ALDOT will accept their interpretation of any constraint that is equal to or less than a 3% variance from the general grade of the adjacent roadway, without any documentation. The local agency will be responsible for internally producing and retaining any required documentation. Any proposed area of construction that exceeds the 3% variance from the general grade of the adjacent roadway will require the approval of ALDOT. The local agency shall document the area of technical infeasibility and submit to ALDOT for review and written approval. This approval shall be in place prior to the authorization for the construction of the Federal Aid project.
3. ALDOT will expect that any required elements of construction in the Federal Aid project within the defined clear zone to be compliant with the appropriate crash worthy standards in place at the time of authorization. Any elements within the defined clear zone of the roadway that are not directly affected by the construction of the project will be allowed to remain in place, at the discretion of the local agency.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 1/3/13
TRANSPORTATION DIRECTOR DATE

ALABAMA
DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: Box and Bridge Culvert Design and Construction

The following guidelines will be adhered to during the design and construction of box and bridge culverts.

All foreseeable potential risks to ALDOT associated with the culvert installation will be considered during culvert selection, sizing, design, and construction. Potential impacts to property, habitat, and water quality will be evaluated during design and verified before installation.

Constructability will be considered as inlet and outlet locations are determined. Groundwater presence, soils characteristics, topographical limitations, economy, and accessibility will be considered during design. Where possible, culverts will be designed to accommodate the bulk of construction outside of the existing stream channel.

Taking into account long-term characteristics of the stabilized channel, the vertical and horizontal position of the inlet and outlet flowline will match that of the existing stream channel as closely as possible. Regulatory coordination regarding barrel section and configuration may be required where sensitive species and/or associated habitat exist.

Construction personnel will confirm and adjust horizontal and vertical alignment as necessary to ensure conformance to these guidelines.

This guidance takes the place of existing memoranda and guidelines concerning subjects discussed herein.

RECOMMENDED FOR APPROVAL: William F. Flora
BUREAU CHIEF, DESIGN BUREAU

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

5/19/14
DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: POST-DEVELOPMENT STORMWATER RUNOFF MANAGEMENT

The following guidelines should be followed during drainage design on all ALDOT projects requiring new development and re-development let to contract after April 1, 2015.

Designers must provide features and practices that cause post-development hydrology to mimic pre-development hydrology of the site to the maximum extent practicable, working within the constraints of the project, at all locations of discharge. The basis for design to meet this requirement shall be small, frequent rain events up to and including the 95th percentile rain event for the site.

While working toward this design goal, initial consideration should be the use of decentralized practices and features near the source of the runoff. Design elements that utilize natural materials and processes will be considered whenever possible.

- Small, frequent rain events are those storm events with rainfall depths up to and including the 95th percentile event for a specific county.

- Pre-development and Post-development hydrology include both peak discharge and runoff volume.

- Pre-development hydrology is the existing hydrological condition of the site just prior to construction of the planned development or re-development.

- New Development describes the creation of a new transportation facility or a new support facility that causes a ground disturbance of greater than one acre.

- Re-Development with respect to transportation facilities describes non-maintenance work performed to or on an existing transportation facility that provides for an increased number of thru lanes of travel, and causes a ground disturbance of greater than one acre. Work on an existing road that does not result in an additional thru lane does not constitute re-development.

- Re-Development with respect to support facilities describes non-maintenance work performed to or on an existing support facility that causes a ground disturbance of more than one acre.

The Chief Engineer may approve exceptions to this policy so long as downstream property will not be significantly impacted, and the bed and bank structure of receiving stream channels will not be significantly degraded by the increased stormwater discharge. Justification for an exception will be described and quantified in a written request to the Chief Engineer, including a description of the analysis and conclusions regarding downstream impacts.

RECOMMENDED FOR APPROVAL: William F. Hanus
STATE DESIGN ENGINEER

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

11/24/14
DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: EMERGENCY AND MAINTENANCE CROSSOVER LOCATION AND DESIGN

Important design considerations for installation of emergency and maintenance equipment crossovers on freeways include interchange spacing, median width, and stopping sight distance. The following design guidance for emergency and maintenance crossovers is advised:

- For the purposes of this GFO the term Crossover refers to an Emergency and/or Maintenance Crossover provide at-grade through a median along a freeway section.
- In rural areas, as identified by the functional class of the route, crossovers may be provided where interchange spacing exceeds 5 miles. Between interchanges, crossovers may be spaced at 3 to 4 mile intervals.
- Crossovers generally should not be located closer than 1,500 feet from the end of a speed-change taper of a ramp or to any structure, such as a bridge.
- Crossovers should not be used where the median width is less than 40 feet.
- Crossovers should be located only where above minimum stopping sight distance is provided and preferably should not be located on super elevated curves
- The width of the crossover should be sufficient for turning movements and should have a surface capable of supporting emergency vehicles and maintenance equipment.
- Crossovers should be depressed below shoulder level to be inconspicuous to traffic.
- Preferably, crossovers should be located in areas where the median width is greater than 70 feet. This prevents the need to provide additional protection around the crossover location.
- In urban areas, as identified by the functional class of the route, crossovers may be provided, but in general are not necessary due to the presence of closely spaced interchanges. If provided, urban crossovers should not be spaced closer than 2-mile intervals, and meet the other requirements of this guidance.

Where some form of median barrier is provided, the gap created by the crossover should have additional protection provided to reduce the likelihood of an errant motorist crossing the median.

General guidance on the design and maintenance of crossovers are as follows:

An unauthorized U-turn into high-speed traffic represents a hazardous situation. In order to discourage use of the crossover by unauthorized motorists, the crossovers should be kept narrow with small transition radii. The crossover should not have hard surfaces or deceleration tapers. A 6-inch aggregate surface of predominately-larger material should provide an adequate, all-weather surface that still appears unattractive to the non-emergency motorist.

- Crossovers shall be constructed with an aggregate surface no wider than 20 feet and with turning radii of not more than 10 feet.
- To be inconspicuous to mainline traffic, the surface should be depressed below shoulder level.
- Side slopes should be constructed 1V:10H or flatter to minimize their effect as obstacles to uncontrolled vehicles that may enter the median.
- If possible, the crossover should be located where a pipe is not necessary. All drainage structures constructed in the median shall be built to current safety standards.
- Crossovers are to be kept in good repair at all times.
- Unused or closed crossovers should be removed and the median properly graded for drainage.
- Signing for a crossover shall be in accordance with the MUTCD. In general, the R5-11, AUTHORIZED VEHICLES ONLY, sign should be used at all crossovers.

RECOMMENDED FOR APPROVAL: _____
STATE DESIGN ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 3/1/2016
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: DESIGN STANDARD AND PLACEMENT CONSIDERATIONS OF CABLE GUIDERAIL SYSTEMS

The purpose of this guideline is to standardize the design and use of High Tension Cable Guiderail Systems, which include the locations for use, the number of cables required, test level requirements, the maximum design deflection, post spacing, distance from travel way, barrier placement location, anchor spacing (run lengths), cross-over allowance for maintenance/emergency needs, anchor details, soil conditions, etc.

1. Cable guiderail systems should be used at narrow medians along interstate routes and at median locations with high rates of cross over incidents. A narrow median shall be defined as a median with 50' or less between the inside travel ways. There may be instances where cable barrier can/should be used along the roadside on routes other than interstates and along medians wider than 50'. These instances should be evaluated by the design engineer on a case by case basis.
2. All cable guiderail systems shall be a four (4) cable system.
3. All cable guiderail systems shall be an NCHRP-350 TL-4 crash tested system on 6:1 or flatter slopes and an NCHRP-350 TL-3 crash tested system on 4:1 or flatter slopes up to 6:1 slopes. Cable guiderail systems shall not be placed on any slopes steeper than 4:1.
4. The design deflection of the cable guiderail system shall be 9' maximum. The deflection is based on the distance from the travel way to the cable barrier. The cable guiderail location is also dependent on the slope geometry of the median and must be placed a maximum of 1' (vertical) from the shoulder break point. For example, on a 4:1 slope the cable guiderail shall not be placed more than 4' from the shoulder break point down the median slope. In this example with a 4' paved shoulder, 2' of unpaved shoulder to the median slope and 4' down the 4:1 slope, the cable barrier will be 10' from the travel way. The cable barrier shall not be placed within 8' of the median ditch bottom.
5. The maximum post spacing shall be 10.5'.
6. The cable guiderail shall be placed on the inside of the horizontal curve when using the median as the centerline. If the cable guiderail must transition due to changes in curvature, it shall do so in the tangent sections or at the curvature change. See attached example (Anchor Scenario 4).
7. The maximum run length (space between anchors) shall be 10,000 LF. Depending on bridge approaches, overpass piers, guardrail locations, cross overs, etc., the maximum run length can be extended on a case by case basis when approved by the Project Manager.
8. Consideration should be given to allow cable guiderail openings at median crossovers for use by emergency and maintenance personnel.

9. The attached typical anchor details shall be included in the contract documents. Each cable guiderail run shall have a specified beginning and ending terminus. Cable guiderail shall not be terminated by attaching to guardrail. The beginning and ending terminus shall be protected by existing guardrail when possible. See attached example Scenarios.
10. Pay items shall be set up for the cable guiderail (624A per LF) and for each cable guiderail anchor (624B per each).
11. The plan notes shall require spare maintenance parts. This shall include the number each of the following that the contractor shall provide: posts and posts hardware, anchors assemblies (includes anchor post, transition posts and all hardware associated with each for a complete anchor assembly), spreader tools and tension measuring devices.
12. Mow strips (concrete, asphalt or other materials) used under the cable guiderail runs shall not be allowed.
13. Recommended Typical Sections/Anchor Scenarios, and Summary of Quantities Box Sheet are attached. Project Notes for Cable Guiderail are found on the Design Bureau's CADD Support Section's webpage. Revisions to the Cable Guiderail Project Notes require approval from the State Design Engineer.

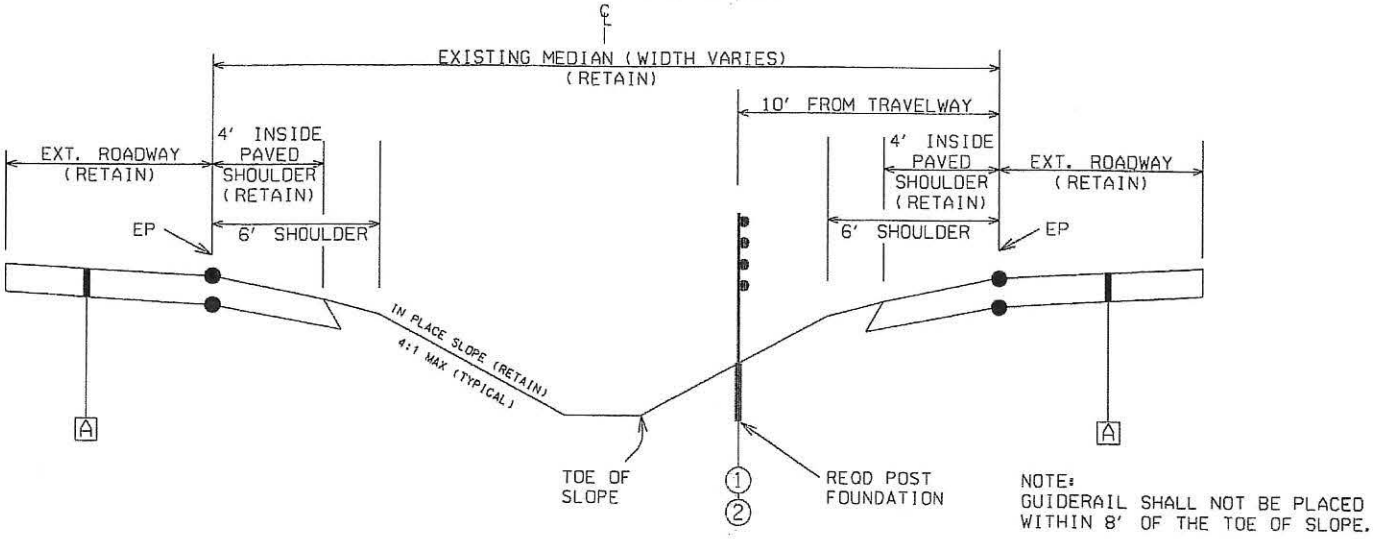
RECOMMENDED FOR APPROVAL: Steven E. Walker
STATE DESIGN ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ Sept. 13, 2017
TRANSPORTATION DIRECTOR DATE

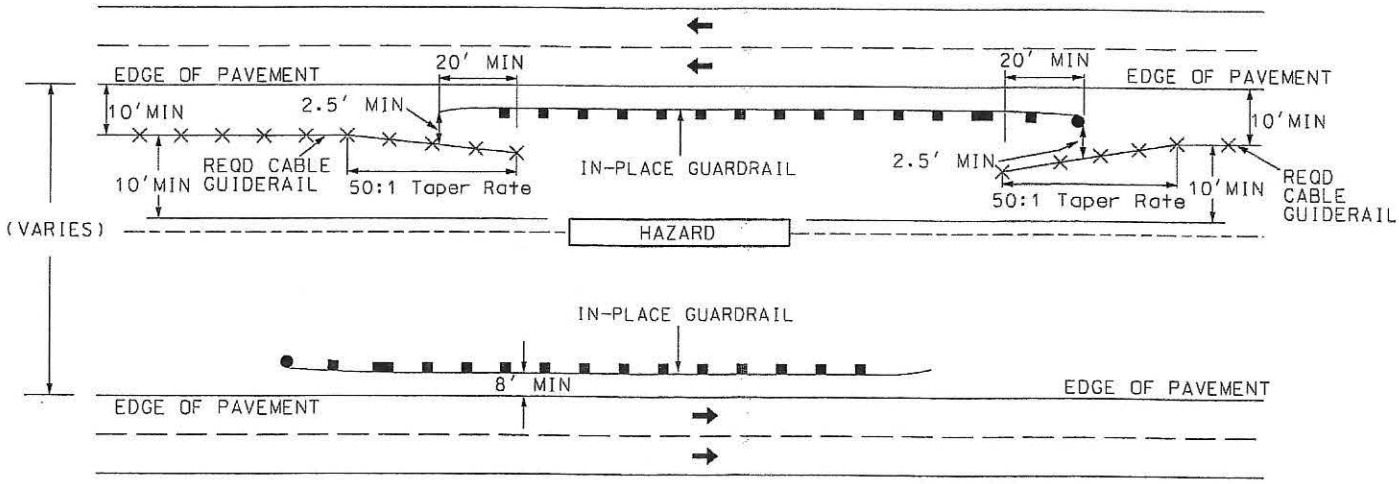
Rev. 8/2017

TYPICAL SECTION



REQUIRED MATERIALS LEGEND		
LEGEND	ITEM NO.	DESCRIPTION
1	624A-000	Cable Guiderail
2	624B-000	Cable Guiderail Anchors
A		Existing Bituminous Concrete Pavement, Retain.

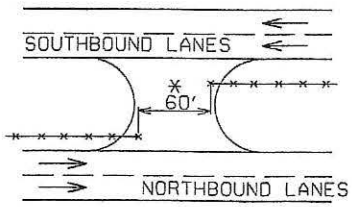
ANCHOR SCENARIO 1: DETAIL FOR CABLE GUIDERAIL AT IN-PLACE GUARDRAIL LOCATIONS



ANCHOR SCENARIO 2: MEDIAN CROSSOVER

* CENTER OF MEDIAN CROSSOVER IS LOCATED AT:

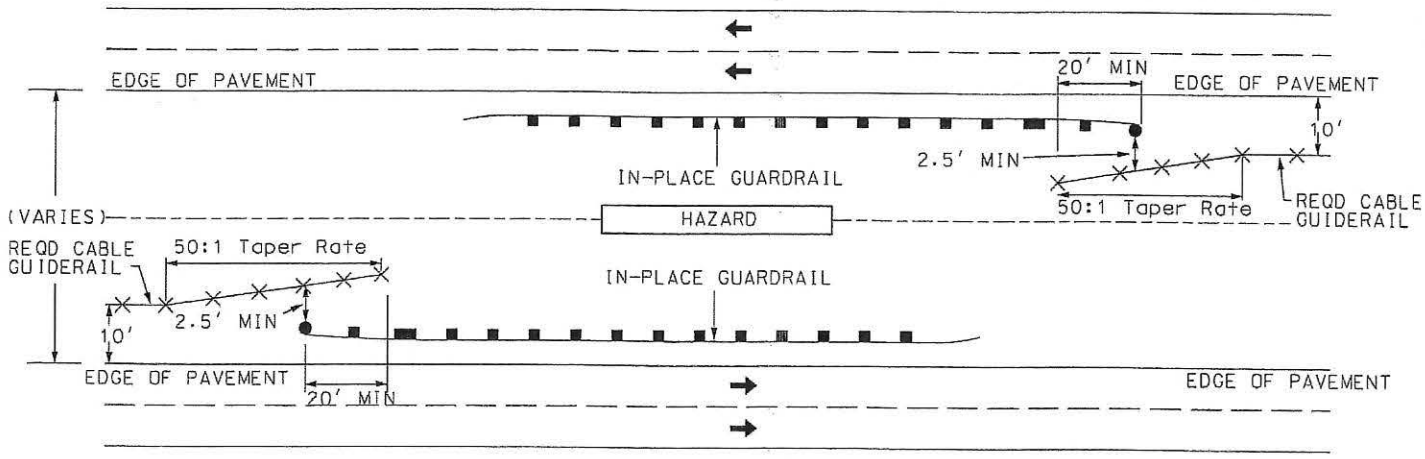
M. P. _____
M. P. _____
M. P. _____
M. P. _____
M. P. _____
M. P. _____
M. P. _____



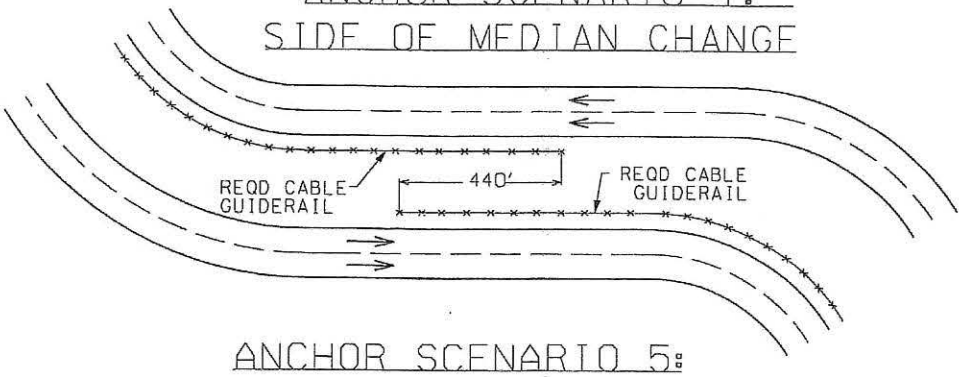
MEDIAN CROSSOVERS AT THE FOLLOWING LOCATIONS WILL BE CLOSED AND THE CONTRACTOR IS TO PLACE GUIDERAIL ACCROSS THEM:

M. P. _____
M. P. _____
M. P. _____
M. P. _____
M. P. _____
M. P. _____
M. P. _____

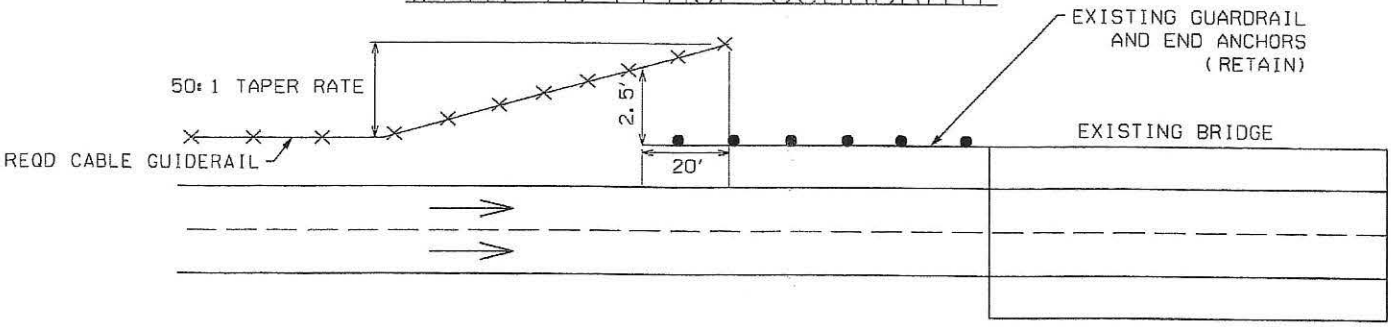
ANCHOR SCENARIO 3:
DETAIL FOR CABLE GUIDERAIL TRANSITION ACROSS THE MEDIAN AT IN-PLACE GUARDRAIL LOCATIONS



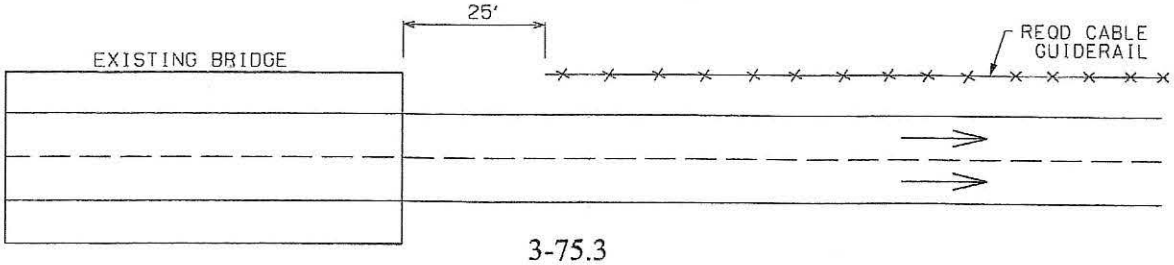
ANCHOR SCENARIO 4:
SIDE OF MEDIAN CHANGE



ANCHOR SCENARIO 5:
CABLE TERMINUS AT BRIDGE APPROACH ENDS WITH IN-PLACE GUARDRAIL



ANCHOR SCENARIO 6:
CABLE TERMINI AT BRIDGE DEPARTURE ENDS WITH NO EXISTING GUARDRAIL



SUMMARY OF QUANTITIES

REQD CABLE GUIDERAIL & GUIDERAIL ANCHORS							
MP	MP	DIRECTION	INSIDE/ OUTSIDE	624A-000 CABLE GUIDERAIL (LIN FT)	624B-000 CABLE GUIDERAIL ANCHOR (EACH)	ANCHOR DETAILS	
						START	END
			TOTAL				

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: BENT OR PIER PLACEMENT CRITERIA FOR PROPOSED BRIDGES OVERPASSING MULTILANE ROADWAYS

A. Bridge Piers or Bents Located in the Median of a Divided Roadway

1. The pier or bent normally shall be located in the center of the median and oriented parallel to the divided underpassing roadway unless directed otherwise by the State Bridge Engineer.

2. For parallel piers or bents, the width of the cap should be sized so that it is no wider than the total of the width of the column(s) plus base width of any facing barriers.

3. The normally required minimum vertical clearance (see GFO 3-25) shall be provided over the underpassing roadway and shall extend from the low bridge element whether superstructure or substructure to any point along the roadway and shoulder or any future widening that will create the minimum vertical clearance condition. The minimum overhead bridge finish grade shall be computed based on future widening at the same rate of slope as the existing roadway (see Figure 1a and 1b).

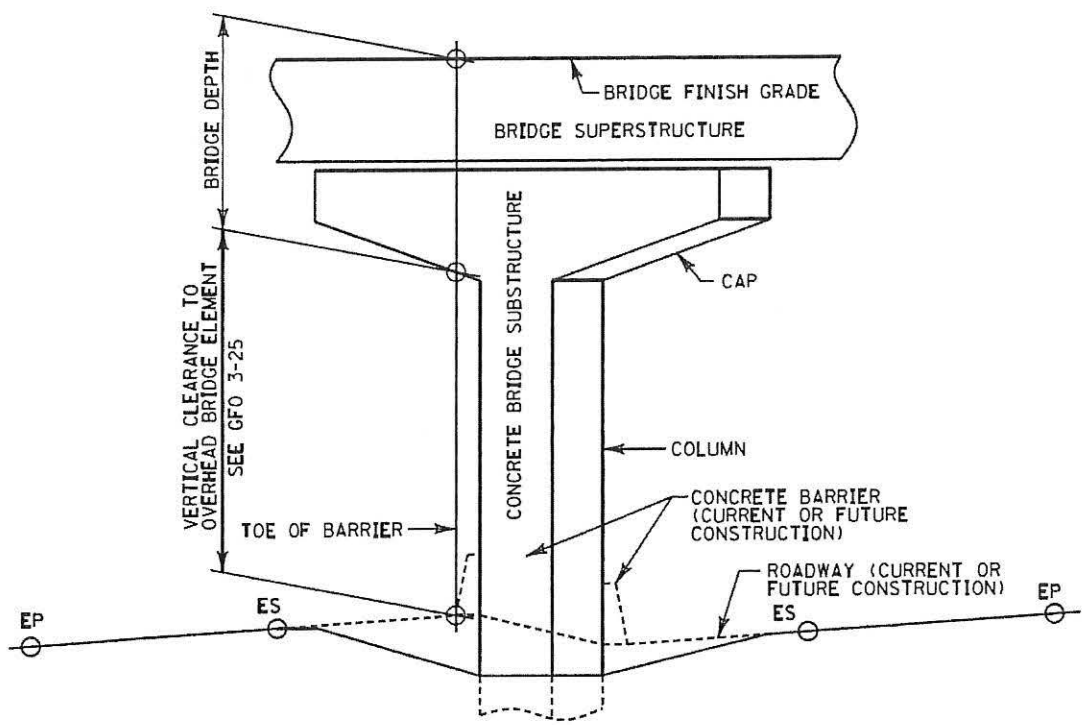


Figure 1a

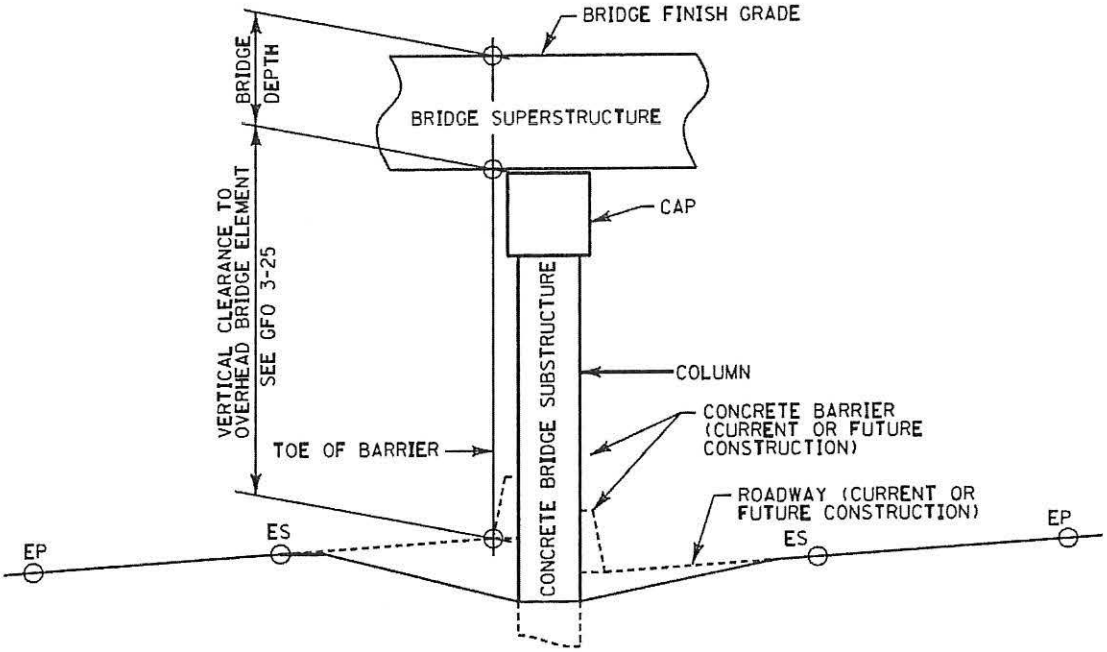


Figure 1b

B. Bridge Piers or Bents Located Along the Outside of a Divided Roadway

1. The pier or bent normally shall be oriented parallel to the divided underpassing roadway unless directed otherwise by the State Bridge Engineer.

2. The face of the pier or bent column(s) shall normally be located a minimum of 30 ft. from the outside edge of the existing divided underpassing travelway or the travelway to be constructed.

3. Consideration will also be given to providing greater than 30 ft. of lateral outside clearance for future widening of the underpassing roadway. If the underpassing roadway is a freeway, the 30 ft. width shall be increased as needed to provide a minimum of four 12 ft. lanes in each direction plus a 12 ft. outside and inside shoulder. Consideration will be given to increasing the number of ultimate lanes to five in each direction in urban/suburban areas.

4. The normally required minimum vertical clearance (see GFO 3-25) shall be provided over the underpassing roadway and shall extend from the low bridge element whether superstructure or substructure to any point along the roadway and shoulder or any future widening that will create the minimum vertical clearance condition. The minimum overhead bridge finish grade shall be computed based on future roadway widening at the same rate of slope as the existing roadway (similar to figures 1a and 1b above).

RECOMMENDED FOR APPROVAL: Steven E. Walker
STATE DESIGN ENGINEER

RECOMMENDED FOR APPROVAL: _____
STATE BRIDGE ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ _____
TRANSPORTATION DIRECTOR DATE

Rev. 10/17

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: ELECTRONIC FILE DELIVERY TO CONTRACTORS

The purpose of this guideline is to give guidance on delivering electronic design data to contractors post award. Currently, it is not standard practice to deliver the electronic design data or files to contractors, however, when it is requested, this guideline will provide instructions on how to handle the request should it be approved.

All requests for electronic data or files must go through Office Engineer. Each request will be evaluated by Office Engineer for approval. Should the request be approved, Office Engineer will contact the lead designer to obtain the electronic data or files. The contractor will need to provide a list of the information requested such as alignments, surfaces, cross sections, etc. THERE WILL BE NO TRANSLATION OF THE DATA. It will be delivered to Office Engineer in its original format, or saved out in Land XML. All delivery of electronic data or files to contractors will be accompanied by a disclaimer letter and signed by the receiving contractor.

RECOMMENDED FOR APPROVAL: Steven E. Walker
STATE DESIGN ENGINEER

APPROVAL: Don T Arkle
CHIEF ENGINEER

APPROVAL: Jerry R. Cooper
TRANSPORTATION DIRECTOR

DATE

State of Alabama

Department of Transportation

Guideline For Operation

Subject: Cross Slope and Superelevation Adjustments for Non-Interstate Pavement Preservation Projects

Cross Slope and Superelevation adjustments are considered for MR Pavement Preservation projects. A project should be reviewed for crash history to determine if there are sections that have a performance issue where cross slope and/or superelevation may be linked as the primary contributing factor to crashes. **If there is not a performance issue identified**, the below gives acceptable ranges for an element to remain in place based on the predictive safety performance. Other Pavement Preservation projects should consider cross slope and superelevation adjustments in accordance with the requirements of the Pavement Preservation Policy. Identified performance issues at a site on PM1 or PM2 projects may be considered for adjustment.

The below guidance is given with the underlying principle that with scarce funding available, the Department does not have the luxury to use limited resources for dimensional adjustments to a project element that will only have marginal returns. Every dollar spent adjusting an acceptably performing project element means it will not be available to go toward a project containing pavement and elements that do need to be addressed.

Use of values outside the guidance provided below will require documentation and approval of a design exception.

Cross Slope

The AASHTO guidance for cross slope is a rate of 1.5% to 2% with an allowance for up to 2.5% in high rainfall intensity areas. On a MR Pavement Preservation Project, if there is no performance issue identified, ALDOT will retain a cross slope within these ranges. Where cross slope does not fall within these ranges at a particular location, or if a performance issue is identified for only a portion of a project, the cross slope adjustment may be limited to those locations. Wider pavements can have the cross slope increased by 0.5% on the additional lanes where there are more than 2 lanes draining the same direction. The crown rollover should not exceed 5%. A cross slope of 3% can be retained if the crown rollover amount is not exceeded.

Superelevation

In accordance with Chapter 10 of the Highway Safety Manual, there is no effect of the superelevation variance on crash frequency until the superelevation variance exceeds 1%. The superelevation variance represents the design superelevation rate for the posted speed minus the actual superelevation of the curve. Adjustments for a superelevation variance of up to 1% should be considered where the AASHTO Green Book rate for a curve is between 7% and 8%. This is due to the higher use of the available friction on these smaller radius curves and the comfort of a driver traversing that curve.

The Highway Safety Manual CMF for a superelevation variance from 1% to 2% is 1.06. A superelevation variance of up to 2% is acceptable to leave in place based on available friction for curves with the design superelevation rate of 6% and below. For low speed routes, a greater variance is acceptable (see 45 mph chart).

Attached are charts for 45 mph, 55 mph, 65 mph and 70 mph for which the in-place superelevation is acceptable to remain in place if the curves do not have a performance issue as determined by the crash data. The in-place superelevation range acceptable to remain in place provides a consistent level of driver comfort while traversing the curve.

The following provides guidance for project scenarios:

1. Generally, if superelevation adjustments are made on a curve, the superelevation should be brought up to the design superelevation rate if practical.

2. If there are project specific constraints that warrant retaining an in-place superelevation variance greater than the ranges given in the charts, use of AASHTO Superelevation Distribution Method 2 can be used as support for a design exception.

3. The calculations are based on Formula 3-7 in the 2018 Green Book. The design values for the friction factor (f_{max}) are based on providing a level of comfort to the driver which include a substantial margin of safety against skidding or loss of vehicle control, even on wet pavements.

4. Curves that are "over" superelevated should be retained if they are within the ranges of the AASHTO 10% or 12% superelevation charts.

5. On projects that add lanes and convert from a 2-lane facility to a 4-lane divided facility, it is appropriate to retain the superelevation of the existing lanes if it complies with the rates in the charts below for the posted speed of the 4-lane route.

Recommended for approval: Steven E. Walker
Steven E. Walker, State Design Engineer

Recommended for approval: Stacey N. Glass
Stacey N. Glass, State Maintenance Engineer

APPROVAL: Edward N. Austin
Edward N. Austin, Chief Engineer

APPROVAL: John R. Cooper
John R Cooper, Transportation Director

10/27/20
DATE

45 mph Chart

Curve Radius (ft)	**45 mph** Superelevation from Green Book (%)	Acceptable In-Place Superelevation (%)
587	8.00	8.00
701	7.80	7.00
765	7.60	6.60
822	7.40	6.40
878	7.20	6.20
933	7.00	6.00
990	6.80	5.50
1050	6.60	5.20
1110	6.40	4.40
1180	6.20	4.20
1250	6.00	3.00
1650	5.00	2.00
2220	4.00	2.00
3130	3.00	2.00

In Urban areas on low speed routes that have the function of an urban street, consider Table 3-13 of the 2018 Green Book for superelevation rates to remain in place.

55 mph Chart

Curve Radius (ft)	**55 mph** Superelevation from Green Book (%)	Acceptable In-Place Superelevation (%)
960	8.00	8.00
1140	7.80	7.00
1230	7.60	6.60
1320	7.40	6.40
1400	7.20	6.20
1480	7.00	6.00
1560	6.80	5.50
1650	6.60	5.20
1730	6.40	4.40
1820	6.20	4.20
1920	6.00	4.00
2470	5.00	3.00
3270	4.00	2.00
4580	3.00	2.00

65 mph Chart

Curve Radius (ft)	**65 mph** Superelevation from Green Book (%)	Acceptable In-Place Superelevation (%)
1480	8.00	8.00
1720	7.80	7.00
1850	7.60	6.60
1970	7.40	6.40
2070	7.20	6.20
2180	7.00	6.00
2280	6.80	5.50
2380	6.60	5.20
2490	6.40	4.40
2600	6.20	4.20
2710	6.00	4.00
3410	5.00	3.00
4450	4.00	2.00
6140	3.00	2.00

70 mph Chart

Curve Radius (ft)	**70 mph** Superelevation from Green Book (%)	Acceptable In-Place Superelevation (%)
1810	8.00	8.00
2090	7.80	7.00
2230	7.60	6.60
2350	7.40	6.40
2470	7.20	6.20
2580	7.00	6.00
2690	6.80	5.50
2790	6.60	5.20
2910	6.40	4.40
3020	6.20	4.20
3150	6.00	4.00
3910	5.00	3.00
5050	4.00	2.00
6930	3.00	2.00

SECTION 4

CONSTRUCTION

C O N T E N T S

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINE FOR OPERATION

SUBJECT: ADMINISTRATION OF CONSTRUCTION PROJECTS

All construction projects let by the Department will be administered through the Construction Bureau regardless of the agency responsible for the daily administration of the contract (State, County, City, etc.). At the Region level, the administration should be through the Area Construction Engineer's office or the Area County Transportation Engineer's office.

The Construction Bureau will not be involved in Pre-Construction activities of projects, except for normal plan reviews prior to lettings which include some Plan-in-Hand and P. S. & E. inspections.

The Construction Bureau will not be involved with any projects constructed with State, County or City forces or let locally by an agency other than the Department. These types of projects will be administered through other Bureaus within the Department.

Problems are sometimes experienced on projects being administered by the City and County personnel due to their lack of familiarity with the Department's specifications and methods of operation. It will be each Area's responsibility to counsel with City and County personnel prior to actual construction to insure they have access to the contract, plans, specifications, forms, and other manuals and documents necessary for daily administration of the project. Personnel from the Area County Transportation Engineer's office should make periodic reviews during the life of these projects to insure that proper compliance with all aspects of contract administration is being met.

RECOMMENDED FOR APPROVAL: Curtis W. Vincent
STATE CONSTRUCTION ENGINEER

APPROVAL: J. E. Borenstein
DEPUTY DIRECTOR, OPERATIONS

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

SEPT. 10, 2015
DATE

Rev. Sept. 10, 2015

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: SETTING CONTRACT TIME

Working Days

As a general rule, contract time should be set on a working day basis for all contracts. The number of working days assigned to a contract will be set during final plan review by the Construction Bureau, taking into consideration the type and amount of work involved in the contract along with the recommendation of the Region.

Calendar Days

The setting of contract time on a calendar day basis will be approved by the Construction Bureau on a limited basis, and only in special circumstances.

Calendar Date

The setting of contract time on a calendar date basis will be approved by the Construction Bureau only in special circumstances when it is critical that a contract be completed on or before particular date. Possible reasons for the use of a calendar date might include the need to:

- Minimize the impact to the public on a bridge replacement project with a lengthy detour.
- Complete an intersection or roadway before the opening of a business, factory, or school.
- Move traffic out of a pattern of reduced lane widths and/or lane shifts as quickly as possible in order to minimize congestion and improve safety.
- Minimize traffic congestion on routes with significant traffic volumes.

For calendar date contracts, the use of an incentive/disincentive provision should be considered to encourage early contract completion. GFO 4 – 7 provides guidance in setting incentive/disincentive rates.

RECOMMENDED FOR APPROVAL: Curtis W. Vincent
STATE CONSTRUCTION ENGINEER

APPROVAL: _____
DEPUTY DIRECTOR, OPERATIONS

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

SEPT. 10, 2015
DATE

Rev. Sept. 10, 2015

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINE FOR OPERATION

SUBJECT: LEVELS OF APPROVAL FOR EXTRA WORK, OVERRUNS, AND TIME EXTENTIONS ON CONSTRUCTION PROJECTS

The purpose of this document is to define the levels of approval for extra work (supplemental agreements and force accounts), overruns of contract pay items, and time extensions on construction projects. The monetary amounts listed below apply to a particular occasion of additional, related items of work, not numerous items of unrelated work, nor the cumulative total of all additional work.

Additional construction costs will occur due to the very nature of the work in which the Department is engaged. However, a diligent effort is to be made by all concerned to closely monitor and minimize these additional costs.

Changes to the work that will lessen construction time or result in cost savings should always be approved by the Construction Bureau before proceeding with the change.

1. EXTRA WORK (Supplemental Agreements and Force Accounts)

The approval authority for extra work is based on the anticipated dollar amount of the work to be performed as follows:

Anticipated Dollar Amount	Approval Authority
$100,000 or less	Region Engineer
Over $100,000 to $150,000	State Construction Engineer
Over $150,000	Deputy Director, Operations and Transportation Director

The approval of extra work should be based on an estimation of the time, materials, equipment, and labor required to complete the work. This estimate should be further validated by comparison with current bid history, when applicable, for the particular pay item(s). In cases where sufficient bid history is available for comparison, and the cost compares favorably with the average bid history when factors such as quantity, project region, and other site specific conditions are considered, bid history alone may be used as the basis of approval. If unit prices cannot be agreed upon, the Contractor should be directed to perform the work on a force account basis. In all cases, written approval from the appropriate authority should be secured prior to authorizing the work to proceed.

When submitting the supplemental agreement or force account documentation to the Central Office for extra work approved at the Region level, the Region Engineer should state or include the following:

- The reason for the additional work
- The justification of the cost of the additional work
- The reasoning used as the basis of the approval or recommendation for approval
- Any other information considered relevant to these decisions

When submitting supplemental agreement or force account documentation to the State Construction Engineer for approval, the Region should include this same documentation along with a recommendation.

2. OVERRUNS OF EXISTING CONTRACT PAY ITEMS

The approval authority for overruns of existing pay items is based on the anticipated dollar amount of the work to be performed as follows:

Anticipated Dollar Amount	Approval Authority
$150,000 or less	Region Engineer
Over $150,000	Deputy Director, Operations and Transportation Director

In all cases, written approval from the appropriate approval authority should be secured prior to authorizing the work to proceed.

When the total cost of an overrun of an existing pay item(s) is anticipated to exceed $150,000, the Region Engineer shall notify the State Construction Engineer in writing. The State Construction Engineer shall, in turn, secure the written approval of the Deputy Director (Operations) and Transportation Director.

When submitting overrun documentation for approval by the Central Office, the Region Engineer should state the following:

- The justification for the overrun
- The reasoning used as the basis of the review and recommendation for approval
- Any other information considered relevant to the Region's recommendation

3. TIME EXTENSIONS

The Region Engineer shall have the authority to approve time extensions associated with extra work, overruns, and other unanticipated conditions on working day and calendar day projects. Time extensions on calendar completion date projects must be approved by the State Construction Engineer.

Time extensions should be negotiated and decided upon prior to the execution of the supplemental agreement or the time extension request form. When negotiating time extensions associated with overruns, the time extension allowable due to monetary overruns under Article 108.09 should be considered. Once the documents are executed, no further extensions will be allowed for the additional work or overruns unless circumstances beyond the control of the Contractor affected the completion of the added work.

When submitting the Time Extension Request or the Supplemental Agreement forms for time extensions approved at the Region Level, the Region Engineer should include the following in his documentation:

- The Contractor's written request for an extension of time
- A full description of the circumstances that were beyond the control of the Contractor
- The affected controlling item(s) of work
- How the circumstances affected the controlling item(s) of work and delayed the overall completion of the work
- The specific dates to which the time extension applies
- Any other information considered relevant

When submitting a time extension request to the State Construction Engineer for approval, the Region should include this same documentation along with a recommendation.

4. FHWA APPROVAL ON FULL OVERSIGHT PROJECTS

Cost Overruns

When the total cost of the extra work or overrun is anticipated to exceed $100,000 on projects with FHWA full oversight, the Region should obtain the formal written approval or disapproval of the FHWA prior to beginning work. When submitting the supplemental agreement, force account, or overrun documentation for further handling by the Central Office, the results of the discussion with FHWA should be included. For changes less than $100,000, FHWA approval may be retroactive.

Time Extensions

When approving a Time Extension or a Supplemental Agreement with an associated time extension on projects with FHWA full oversight, the Region Engineer should obtain the formal written approval or disapproval of the FHWA. When submitting the supplemental agreement or time extension request for further handling by the Central Office, the results of the discussion with FHWA should be included.

5. ROUTING OF DOCUMENTS APPROVED AT THE REGION LEVEL

For Extra Work approved at the Region level, an "N/A" should be entered in the State Construction Engineer's signature block on the applicable supplemental agreement and/or change request form. These forms, in addition to the Time Extension form for time extensions approved at the Region level, should be submitted directly to the Office Engineer Bureau with a copy to the Construction Bureau. The Region's cover letter to the Office Engineer should state that the changes were approved at the Region level in accordance with GFO 4-3.

6. COST REPORTING

Projected contract overruns will be reported to the Bureau of Finance and Audits automatically through the monthly estimate process by utilizing the figures reported in the "percent complete" and "quantity to date" fields for each contract item. The Region Engineer will be responsible for ensuring that the "percent complete" per contract item is updated monthly and reported as accurately as possible on <u>all</u> projects and is based on the projected final quantity.

RECOMMENDED FOR APPROVAL: Curtis W. Vincent
STATE CONSTRUCTION ENGINEER

APPROVAL: J. C. E. Rosenthal
DEPUTY DIRECTOR, OPERATIONS

APPROVAL: John P. Cogan
TRANSPORTATION DIRECTOR

SEPT. 10, 2015
DATE

Rev. Sept. 10, 2015

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: RECLAIMED ASPHALT PAVEMENT ("RAP") MATERIAL

In General, RAP material shall become the property of the contractor in accordance with ALDOT Standard Specifications for Highway Construction, Section 408. The salvage value of this material retained by the contractor should be reflected in the bid price. The Owner (State, City or County) may retain a portion of the RAP material removed for its own use. Consideration as to the retaining of any RAP material on construction projects should be given careful review of its timely use and the economic impacts. The quantity of the RAP material retained by the Owner shall be limited to the amount of material needed from one paving season to the next and should not exceed 75 cubic yards per project. Any requirements for Owner retained RAP material must be approved by the Regional Engineer and designated ahead of time by a note on the plans. The plan note will indicate the amount of RAP to be retained and the exact location of where the RAP is to be stock piled, which should be within reasonable proximity to the project.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF/REGION ENGINEER

APPROVAL: _____
DEPUTY DIRECTOR OF OPERATIONS

APPROVAL: _____ 6/21/2016
TRANSPORTATION DIRECTOR DATE

Rev. 6/13/2016

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: SEQUENCE OF APPLICATION OF LEVELING AND SURFACE TREATMENTS ON ALL FEDERAL-AID INTERSTATE AND NATIONAL HIGHWAY SYSTEM PROJECTS

On all Federal-Aid Interstate and National Highway System Projects containing both the Items of Leveling and Surface Treatment, the Surface Treatment must be applied prior to the placement of Leveling. In general, this will require a minimum of 50 kg/m^2 of leveling on these type projects.

RECOMMENDED FOR APPROVAL: _____G.M. Harper_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Newal S. Cauthen_____
CHIEF ENGINEER

APPROVAL: _____M. Roberts_____ _____9/29/93____
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: FINAL INSPECTION OF SECTION 130 RAIL-HIGHWAY PROJECTS

Upon completion of a Section 130 rail-highway project, the Region/Division Railroad Coordinator will physically inspect the crossing to ensure signals are installed and are working properly. After the project is satisfactorily completed including the installation of signs, striping and legends, the Region/Division Railroad Coordinator will submit a letter recommending acceptance of the project to Transportation Planning and Modal Programs Bureau. Appropriate actions will follow to ensure the project can be closed and the proper records retained.

RECOMMENDED FOR APPROVAL: Robert J. Gilla
MULTI MODAL TRANSPORTATION ENGINEER

APPROVAL: Ronald S. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

11/18/13
DATE

Rev. 11/2013

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: INCENTIVE/DISINCENTIVE PROVISIONS FOR EARLY COMPLETION OF CONSTRUCTION PROJECTS

During the project P. S. & E. inspection, decisions should be made concerning whether or not a project should be a candidate for Incentive/Disincentive provisions. Candidate projects for I/D provisions should, generally, be limited to those projects whose construction would severely disrupt highway traffic or highway services, significantly increase road users' costs, have a significant impact on adjacent neighborhoods or businesses, or close a gap thereby providing a major improvement in the highway system. The contract time on all I/D projects will be set in calendar days.

If a project is a candidate for I/D provisions, the following chain of events should take place:

1. The Design Bureau will perform a road users' cost analysis of the project construction. The Lead Agency will be responsible for obtaining current hourly traffic counts from the Bureau of State Planning or the Division. The Lead Agency will provide the Design Bureau Traffic Engineering Section with the hourly traffic volumes and information on which of the following situations may exist:

    a. One, or more, lanes will be closed to traffic.
    b. One, or more, lanes will be narrowed.
    c. The road will be closed and traffic detoured.

2. The information gathered from the road users' cost analysis will be sent to the Lead Agency for its reviews and consideration of design options and the sequence of construction. When the plans are sent to the Construction Bureau for review, the Design Bureau will send a letter stating that the project is a candidate for I/D provisions along with the road users' cost per day for the option used to design the project.

3. The Construction Bureau, during its plan review, will make the final decision whether or not I/D provisions are to be included in the contract. If I/D provisions are to be included in the contract, the Construction Bureau will prepare a special provision specifying the number of calendar days of contract time and the amount of incentive or disincentive per calendar day.

If I/D provisions are included in the contact, the contract time will be set at approximately 80 percent of the time which would have been specified if an I/D provision was not included. The amount of I/D per day would be set at the rate computed for the road users' cost (rounded to the next lowest $500) or the rate as computed by the following formula:

$$\text{I/D/Day} = \frac{(25\%)\ (\text{Engineer's Cost Estimate})}{\text{Contract Time}}$$

(rounded to the nearest $500), whichever is less. If the above rate of I/D is below $1,000, I/D provisions will not be included in the contract.

RECOMMENDED FOR APPROVAL: _____Wm. J. Hartzog_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____9/12/89____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: CONSTRUCTION SEQUENCES AND TRAFFIC HANDLING ON INTERSTATE 4R PROJECTS

The following guidelines shall be used for the establishment of construction sequences and traffic handling scheme for interstate 4R projects. These guidelines should be used in conjunction with the current Manual on Uniform Traffic Control Devices in developing project plans.

1. Normally, project lane closures should be limited to one lane closure per roadway at one time. More than one closure may be permitted if a clear roadway can be maintained between closures for a minimum distance of 3 miles. The length of any closure should not exceed 3 miles.

2. Traffic should not be placed on a mainline travel lane that has been planed or had bituminous surface treatments placed on it unless considered necessary by the Engineer at transitions, etc. It is acceptable to place traffic on a micro-milled surface for up to the time frame allowed by the specifications.

3. Lane closures should remain in place where pavement elevation differences exceed approximately 2 inches at the edges of the travel lanes. Overnight lane closures will not be necessary where the differences in elevation at lane edges are less than approximately 2 inches. In these situations, the edge should be tapered on an approximately 1:1 slope. Moving lane closures will be permitted where the elevation differentials are approximately 2 inches or less at the lane edges.

4. Where it is necessary to close a roadway and place two-way traffic on an adjacent roadway, the length of closure should not exceed 5 miles. The closure length shall be based on traffic volumes, estimated queues, and the Traffic Management Plan (TMP) outlined in GFO 3-61. When such closures are required, positive separation, such as portable safety barriers, should be used to divide the two-way traffic.

RECOMMENDED FOR APPROVAL:

Winston J. Powe, P.E.
State Construction Engineer

APPROVAL:

George H. Conner, P.E.
Deputy Director, Operations

John Cooper
Transportation Director

Date: 8-1-2018

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: PROPER USE OF REGULATORY SPEED LIMIT SIGNS IN CONSTRUCTION WORK ZONES

The "Standard Operating Procedure for Determining Speed Limit(s) in a Work Zone" shall be referenced and applied during the construction phase of projects that require temporary traffic control.

This Standard Operating Procedure establishes the Alabama Department of Transportation's process and procedure for determining if the speed limit(s) in a work zone should be reduced based on the type of work being performed.

A copy of the "Standard Operating Procedure for Determining Speed Limit(s) in a Work Zone" is available on the Design, Construction, and Maintenance Bureau's Webpage.

RECOMMENDED FOR APPROVAL:

Steven E. Walker
STATE DESIGN ENGINEER

STATE CONSTRUCTION ENGINEER

APPROVAL:

CHIEF ENGINEER

DEPUTY DIRECTOR, OPERATIONS

APPROVAL:

TRANSPORTATION DIRECTOR

9-26-2019
DATE

SECTION 5

MAINTENANCE

C O N T E N T S

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: FIELD DATING OF HIGHWAY SIGNS

For all signs on the State Highway Systems, the date field installation is made to be duly noted on the sign dating decal affixed to the rear of the sign. For sign assemblies, a separate decal should be used for each sign in the assembly.

RECOMMENDED FOR APPROVAL: _____P.L. Cain_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy,Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

State of Alabama

Department of Transportation

Guideline For Operation

Subject: Expedited Right-of-Way Permits

With the intent to aid in economic development, increase educational opportunities, and better the delivery of emergency services of the State, the Department, at the request of the Governor, will expedite processing of right-of-way permit applications for broadband services by making decisions regarding such permit applications within five days of submittal of a properly completed permit application. Further, such permit applications and requests for information related to such applications will be submitted to the State Maintenance Engineer of the Department, at 1409 Coliseum Boulevard, Montgomery, AL 36110, 334-242-6272.

APPROVAL: _____
Stacey N. Glass, State Maintenance Engineer

APPROVAL: _____
George H. Conner, Deputy Director of Operations

APPROVAL: _____ 5-30-19
John R Cooper, Transportation Director DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: CHANGE REQUEST/SUPPLEMENTAL AGREEMENTS FOR FEDERAL-AID SAFETY PROJECTS CONSTRUCTED BY STATE FORCES

Change Request/Supplemental Agreements for Federal-Aid Safety Projects constructed by State Forces shall be handled as follows:

1. The design, plans and project records are handled by the Design Bureau. The initial request for project modifications, from the Division, should be transmitted to the Design Bureau.

2. The Design Bureau will review and recommend approval/disapproval to the Maintenance Bureau.

3. The Maintenance Bureau will:

   a. Approve documents and forward to the Office Engineer Bureau, or
   b. Disapprove documents and return to Division with appropriate comments.

4. The Office Engineer Bureau will:

   a. Review documents and forward to FHWA for concurrence.
   b. Make distribution of FHWA action (Approval/Disapproval) to the Division with copies to the Design and Maintenance Bureaus.

RECOMMENDED FOR APPROVAL: _____P.L. Cain_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: PAVING APPROACHES AT EXISTING RAIL-HIGHWAY GRADE CROSSINGS DURING NEW CONSTRUCTION OR RAILROAD MAINTENANCE IMPROVEMENTS

The following guideline shall govern the placement of asphalt pavement at the approaches to existing rail-highway grade crossings when track elevations are raised during construction or railroad maintenance.

When the reworking of tracks at an existing rail-highway crossing requires the elevation of the tracks to be raised, the approach pavement (both length and width) shall be adjusted in accordance with the details on page 5-6.1 labeled "Asphalt Approach ½ Section" dated 01/10/96. The responsibility for the implementation of this requirement falls on the individual railroad companies. All rail companies in Alabama have been advised this guideline applies to new construction and maintenance activities for any exiting grade crossings for all public roads, streets and highways.

The bituminous asphalt paving material shall be obtained from an asphalt plant approved by the Alabama Department of Transportation and pavement placed in accordance with the current ALDOT standard specifications.

In addition, the paved approach width at all crossings shall conform to the width of the existing roadway pavement including the shoulders.

It shall be the responsibility of the railroad company to notify the Alabama Department of Transportation's Region/Division Engineer in writing thirty (30) days in advance of starting any work.

ALDOT may provide traffic control devices for a route detour when railroad maintenance work causes a state route to be closed or partially closed. For non-state routes the railroad is expected to coordinate the activities with the appropriate city or county involved.

Prior to the work being done the railroad will coordinate with the State or local government to ensure any markings, legends or striping will be replaced in accordance with the Manual on Uniform Traffic Control Devices.

RECOMMENDED FOR APPROVAL: Robert J. Jilla
MULTI MODAL TRANSPORTATION ENGINEER

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

11/18/13
DATE

Rev. 11/2013

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO

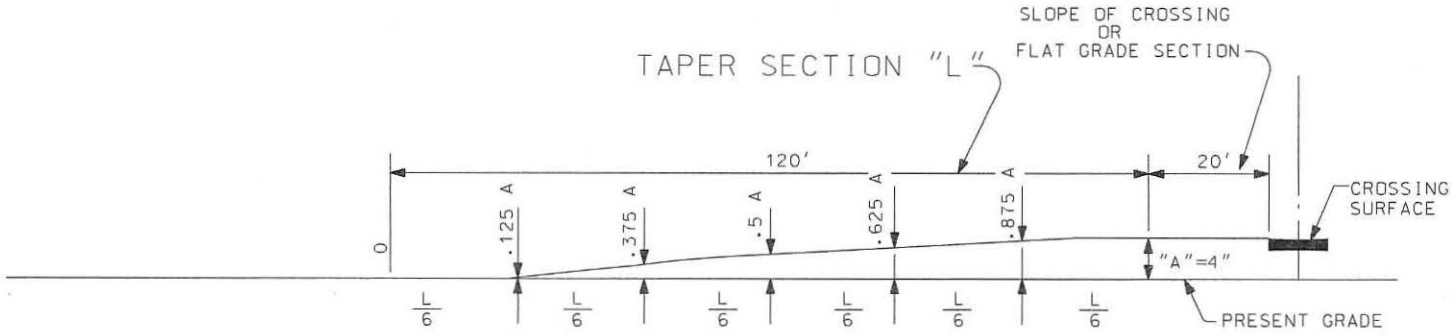


TABLE "A"	
GRADE DIFERENCE "A"	TAPER LENGTH "L"
1"	30'
2"	60'
3"	90'
4"	120'
5"	150'
6"	180'
7"	210'

TABLE "B" LENGTH "L"		
1%	2%	3%
30'	20'	10'
60'	40'	20'
90'	60'	30'
120'	80'	40'
150'	100'	50'
180'	120'	60'
210'	140'	70'

NOTES:
1. DRAWING IS FOR A 4" GRADE DIFFERENTIAL. GRADE DIFFERENTIAL IS TO BE ESTABLISHED
2. EVERY 12' ACROSS ROADWAY BY USE OF STRINGLINE AND 6' RULE.
3. WHEN THE EXISTING APPROACH PAVEMENT EXCEEDS A 1% GRADIENT USE TABLE "B".

--SPECIFICATIONS--
CURRENT ALABAMA DEPARTMENT OF TRANSPORTATION

REVISIONS
1. Added to CADD on 11-22-11 by J.F.T.

ALABAMA DEPARTMENT OF TRANSPORTATION
1409 COLISEUM BOULEVARD
MONTGOMERY, AL 36130-3050

DESIGN BUREAU SPECIAL DRAWING

ASPHALT APPROACH 1/2 SECTION
RAIL HIGHWAY GRADE CROSSINGS

Bureau Std Engr: L.V.S.
DRAWN BY: ____ DATE DRAWN: 08-24-84

SPECIAL DRAWING NO.
SPECIAL PROJECT DETAIL

INDEX NO.

NOT TO SCALE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: MAINTENANCE AGREEMENTS WITH LOCAL GOVERNMENTS

On construction or improvement projects funded in part or wholly by state or federal funds and involving any work on streets, roads or bridges maintained by local governments, a maintenance agreement shall be executed with the local government as to the future maintenance of the affected street, road or bridge.

RECOMMENDED FOR APPROVAL: P.L. Cain
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: Tom Espy, Jr.
CHIEF ENGINEER

APPROVAL: Royce G. King 5/20/88
HIGHWAY DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATIONS

SUBJECT: FUNDING, OPERATION, AND MAINTENANCE GUIDELINES FOR ELECTRICALLY OPERATED TRAFFIC CONTROL DEVICES

The following are guidelines regarding the funding, operation and maintenance of electronically operated traffic control devices to be located at intersections and other locations that are not under the sole jurisdiction of the STATE and/or only serve a private developer, and/or are on a state route that is within the jurisdiction of an incorporated town or city.

I. CATEGORIES OF REQUESTS

This guideline applies to the following categories of requests:

A. ***General request:*** Any incorporated town, city, county or developer who petitions the Alabama Department of Transportation for a traffic control device on a STATE maintained highway and whose petition is not attributable to any K – 12 school facility.

B. ***School authority request:*** Any local Board of Education or K – 12 facility with direct access to a STATE maintained highway whose superintendent, principal, administrator, or board official or any other entity acting on behalf of a school authority petitions the Alabama Department of Transportation for a traffic control device.

C. ***Local government school request:*** Any incorporated town or city, or county government, having authority for roadway maintenance, or any other entity whose petition for a traffic control device to the Alabama Department of Transportation can be attributed to any K – 12 school facility which facility has no direct access to a STATE maintained highway.

II. TRAFFIC CONTROL DEVICES CONSIDERED

The electronically operated traffic control device to be considered by the Alabama Department of Transportation for each type of request on a STATE route is as follows:

A. ***General request:*** (1) a traffic control signal (full or intersection flasher), (2) an advance warning flasher, or (3) roadway lighting (intersection lighting or general street lighting).

B. ***School authority request:*** (1) a traffic control signal (full or intersection flasher), (2) a school speed limit flashing beacon, (3) a school zone flashing beacon, or (4) a school crosswalk flashing beacon

C. ***Local government school request:*** (1) a traffic control signal (full or intersection flasher) or (2) a school crosswalk flashing beacon.

III. FUNDING

A. Justified Traffic Control Devices

If justification of an electronically operated traffic control device and/or roadway lighting is warranted and installation is recommended by the Division, the following funding guidelines regarding the proportionate share of the expenses will apply:

1. *General Requests:* If state funds are used, funding shall be based on the number of approaches each entity controls. [EXAMPLE – for a three-way intersection with one approach local and two approaches STATE, the funding ratio shall be a 33/67 split for the purchase and installation of the signal.] The funding split described above for traffic control signals at an intersection shall also apply to intersection lighting. Advance flashers shall be funded at a flat 50/50 split. Street lighting shall be 100% funded by the requesting authority.

   EXCEPTION: For general requests for traffic control devices on a state route within the jurisdiction of an incorporated town or city where the STATE does not elect to participate in the costs or the proposed signal will only serve a private development, the requesting party (incorporated town or city, county, or other public entity) shall be responsible for 100% of the funding. These installations may be accomplished through a Special Work Authorization (SWA) by STATE forces or the STATE may issue a Permit to the local government unit or developer for the installation, which shall be constructed in accordance with STATE Design Standards and Specification requirements.

2. *School authority request:* If the school authority or other entity acting on behalf of a school authority accepts the recommendation by the Division, then the funding shall be at a flat 50/50 split for the purchase and installation of the equipment.

3. *Local government school request:* Funding shall be at a flat 50/50 split for the purchase and installation of the equipment.

B. Unjustified Traffic Control Devices

If a *school authority request* is for an unwarranted, full traffic control signal, the following guidelines apply:

1. Approval from the Transportation Director, in writing, will be obtained before submittal of funding requests and Agreements by the requesting authority.

2. The Division shall submit the necessary paperwork and funding request for the traffic control signal to the requesting authority. The requesting authority shall be responsible for 100% of the cost for purchasing and installing the traffic control signal.

3. This Guideline for Operations shall be referenced in the remarks portion of the warrant analysis, with a specific reference to this Section III(B). The Division shall require and initiate an Exhibit "O", a funding agreement to be included with the Permit/Agreement, with the requesting authority for either onsite (school authority) and/or offsite (STATE ROW) traffic flow improvements to enhance traffic safety and signal efficiency.

4. In the event the requesting authority does not agree to funding 100% of the cost for the purchase and installation of its request for a full traffic control signal, the requesting authority may elect to pursue the Division's recommended installation of another traffic control device at the 50/50 split of the purchase and installation cost.

5. If no local funding support for the electrically operated traffic control device and/or roadway lighting is secured, ALDOT will not pursue the installation.

IV. OPERATION & MAINTENANCE

A. Generally, the requesting authority will bear the responsibility for the operation and maintenance of any electrically operated traffic control device. The responsible agency agrees to operate and maintain the device and all of its appurtenances in accordance with the Alabama Department of Transportation operational guidelines and the maintenance provisions noted in the Manual on Uniform Traffic Control Devices (MUTCD). The responsible agency agrees to consult the Traffic Control Devices Handbook, prepared by the Federal Highway Administration (FHWA), as a guideline on the maintenance and operation of traffic signal equipment. The Division will note within the Permit/Agreement whether the request is a *school authority request* for a warranted or unwarranted, full traffic control signal.

B. For electrically operated traffic control devices and/or roadway lighting installations on a state route, ALDOT shall execute with the requesting authority (incorporated town or city, county, or other public entity) an AGREEMENT FOR THE INSTALLATION AND/OR OPERATION & MAINTENANCE OF TRAFFIC CONTROL SIGNALS AND/OR STREET LIGHTING. This Agreement shall detail the type of electrically operated traffic control device installed or the limits and types of lighting installed; who will furnish and install, and if applicable, who will be responsible for system compatibility of the equipment and appurtenances; and who will be responsible for the installation cost. An Exhibit "O" shall be included, as part of the Agreement, to state the funding ratio between the responsible agency and the STATE. This Agreement shall identify and stipulate that the responsible agency will bear all costs associated with the operation, maintenance, and electrical energy required to keep

the equipment and appurtenances operating properly and on a continuing basis. The Agreement shall also provide that the responsible agency will determine how its operation and maintenance responsibilities will be accomplished. The Agreement shall be entered into by a Resolution or motion lawfully passed and adopted by the responsible agency at a regular (or special) meeting of the responsible agency and duly recorded. The Resolution or motion and the Agreement shall have the Official Seal of the responsible agency affixed on them and the documents shall be signed by the Approving Authority and witnessed

V. GENERAL

Any deviation from these procedures must be approved by the Transportation Director, **in writing,** prior to the expenditure of STATE funds, either routine maintenance funds or special project funds.

RECOMMENDED FOR APPROVAL:

BUREAU CHIEF

APPROVAL:

CHIEF ENGINEER

APPROVAL:

TRANSPORTATION DIRECTOR

DATE: 12/29/08

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: LOCATION OF UTILITY FACILITIES WITHIN THE INTERSTATE HIGHWAY AND OTHER CONTROLLED ACCESS HIGHWAY RIGHT-OF-WAY

Utilities and utility type facilities will be permitted to make perpendicular or nearly perpendicular crossings of Interstate Highway and other controlled access Highway right-of-way in accordance with State of Alabama Highway Department Standards for Accommodating Utilities on Highway Rights-of-Way.

Utilities and utility type facilities will not be permitted to make longitudinal installations within the control of access area of Interstate Highway and other controlled access Highway right-of-way.

RECOMMENDED FOR APPROVAL: _____P.L.Cain_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/19/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: PERMITS FOR LOCATING UTILITY FACILITIES ON STATE HIGHWAY RIGHT-OF-WAY

Processing and approval of permit applications for locating utility facilities on State Highway right-of-way is as follows:

1. Permits issued under General Agreement and service connections not paralleling the highway (not including Interstate System Highways or other controlled access highways):

   Applications are submitted to District Office by the Utility. Permit applications receiving a favorable recommendation from the District Engineer are forwarded to Division Office for review and final consideration by the Division Engineer. A copy of permits approved under General Agreement is submitted to the Maintenance Bureau.

2. Permits other than those covered by Item No. 1 above:

   Applications are submitted to District Office by the Utility. Permit applications receiving a favorable recommendation from the District Engineer are forwarded to the Division Office for review. Permit applications receiving a favorable recommendation from the Division Engineer are forwarded to the Maintenance Bureau for review and final consideration by the Maintenance Engineer.

3. The exception to No. 1 and No. 2 above is permit applications proposing attachment to bridge structures. These applications are, in addition to the steps specified under No. 2 above, reviewed by the Attachment to Structures Committee and the Chief Engineer, with final consideration by the Highway Director.

4. Permit applications involving active construction projects are handled by and as directed by the Utilities Section of the Design Bureau.

RECOMMENDED FOR APPROVAL: _____P.L Cain_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/19/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: VEGETATION CONTROL BY UTILITIES ON HIGHWAY RIGHTS-OF-WAY

The use of herbicides by utilities to control vegetation within the rights-of-way for highways under State of Alabama Highway Department jurisdiction shall be in accordance with current procedures, guidelines, and administrative directives relevant to the State Highway Department's Vegetation Management Program.

Chemical vegetation control by utilities will be limited to currently recommended products and methods approved by the State Highway Department, Bureau of Maintenance.

Utilities must apply in writing to the State Highway Department District Engineer for permission to use herbicides for vegetation control within highway rights-of-way. The utility must receive approval in writing from the State Highway Department Division Engineer prior to beginning such work.

RECOMMENDED FOR APPROVAL: _____P.L. Cain_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____8/15/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: PROPER SIGNING PRACTICES FOR HIGHWAY MAINTENANCE ACTIVITIES

For all Highway maintenance activities which require the placement of construction/maintenance signs, the signs shall be installed on approved manufactured portable sign stands which meet the M.U.T.C.D. sign placement requirement of one foot (minimum) height above the ground line and shall be of sufficient size to accommodate the size sign required for the roadway class designation of the roadway. To further enhance the sign's target value, the sign stands may be of the type to accommodate a minimum of two orange flags, and these flags may be used for all construction/maintenance applications.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF/REGION ENGINEER

APPROVAL: _____
DEPUTY DIRECTOR, OPERATIONS

APPROVAL: _____ 11/21/18
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: VEGETATION MANAGEMENT - USE OF HERBICIDES

The use of herbicides by the Alabama Highway Department to control vegetation within highway rights-of-way under its jurisdiction shall be in accordance with current procedures, guidelines, and administrative directives as are currently recommended and approved by the State Highway Department, Bureau of Maintenance. The publication entitled "A Manual For Roadside Vegetation Management" will be issued and/or revise periodically to establish all or a portion of pertinent guidelines to be followed by Highway Department Personnel using herbicides and related products. Any deviations from current established guidelines, procedures and policies must receive approval in writing from the Maintenance Bureau prior to beginning such work.

RECOMMENDED FOR APPROVAL: _____P.L. Cain_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King___ _____2/13/89____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

ALABAMA DEPARTMENT OF TRANSPORATION

GUIDELINES FOR OPERATION

SUBJECT: INTERIM INSPECTIONS ON BRIDGES

An **interim inspection** is defined as an inspection at least every 12 months; or more often if deemed necessary by the owner's bridge inspector, the Emergency Bridge Inspection team, or the appropriate Guideline for Operation. An interim inspection must be thorough enough to determine the condition of the bridge but may otherwise be limited to an inspection and review of the elements and/or components of the bridge which originally required the interim inspection.

In order for the Department to conform to the requirements set forth in the National Bridge Inspection Standards (NBIS) and FHWA guidelines, the Department's Guidelines for Operation require that bridges which fall into any of the following categories **must** be reported immediately to the Maintenance Bureau **and must** have interim inspections.

a) bridges with condition grade of 4 or less for the deck, superstructure, substructure or culvert.

b) bridge with condition grade of 3 or less for channel condition or waterway adequacy.

c) bridges which are posted.

The above requirements are effective immediately for all bridges requiring interim inspections.

RECOMMEND FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 9·9·2008
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

ALABAMA DEPARTMENT OF TRANSPORATION

GUIDELINES FOR OPERATION

SUBJECT: DECK, SUPERSTRUCTURE, SUBSTRUCTURE, CULVERT OR CHANNEL CONDITION GRADE OF 1 OR 2

Any bridge with a deck, superstructure, substructure, culvert or channel condition grade of 1 or 2 **shall** be closed. In the case of a deck, superstructure, substructure, culvert or channel with a condition grade of 1 or 2 the Division **must** notify the Maintenance Bureau, the County **must** notify County Transportation Bureau and the Municipality **must** notify the division bridge inspector. Before the bridge can be re-opened to traffic, the owner **must** have a professional review to determine if the bridge **must** remain closed or if the bridge **may** be re-opened to traffic with a three ton gross load limit and with interim inspections at least every 30 days. Upon request, the Emergency Bridge Inspection Team **may** be available to perform the review. The bridge owner **must** submit in writing to their respective contacts listed above, its recommendations for correcting the deficiencies.

The above requirements are effective immediately for all bridges with a deck, superstructure, substructure, culvert or channel condition grade of 1 or 2.

RECOMMEND FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 9.9.2008
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

ALABAMA DEPARTMENT OF TRANSPORATION

GUIDELINES FOR OPERATION

SUBJECT: DECK, SUPERSTRUCTURE, SUBSTRUCTURE, CULVERT OR CHANNEL CONDITION GRADE OF 3

Any bridge with a deck, superstructure, substructure, culvert or channel condition grade of 3 **shall** be posted for a three ton gross load limit. In the case of a deck, superstructure, substructure, culvert or channel with a condition grade of 3 the Division **must** notify the Maintenance Bureau, the County **must** notify County Transportation Bureau and the Municipality **must** notify the division bridge inspector. If the bridge is load posted, then it **must** have an interim inspection at least every 90 days, or more often if deemed necessary by the owner's bridge inspector. Any exception to the 3 Ton load posting **must** have a professional review to determine the load-carrying capacity and the appropriate interim inspection frequency, not to exceed 90 days. Upon request, the Emergency Bridge Inspection team **may** be available to perform the professional review. The bridge owner **must** submit in writing to their respective contacts listed above, its recommendations for correcting the deficiencies.

The above requirements are effective immediately for all bridges with a deck, superstructure, substructure, culvert or channel condition grade of 3.

RECOMMEND FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 9.9.2008
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

ALABAMA DEPARTMENT OF TRANSPORATION

GUIDELINES FOR OPERATION

SUBJECT: DECK, SUPERSTRUCTURE, SUBSTRUCTURE OR CULVERT CONDITION GRADE OF 4

Any bridge with a deck, superstructure, substructure or culvert condition grade of 4 **shall** be load rated to determine the load carrying capacity. In the case of a deck, superstructure, substructure or culvert with a condition grade of 4 the Division **must** notify the Maintenance Bureau, the County **must** notify County Transportation Bureau and the Municipality **must** notify the division bridge inspector. The deck, superstructure, substructure or culvert **must** be load rated within 6 months of the date of inspection which revealed the condition grade of 4, and it **must** be placed on a maximum of 12 month interim inspection. If the structure has not been load rated or had a professional review within six months, then the bridge **must** be gross load posted for one-half of its design operating rating and **must** have an interim inspection at least every 12 months, or more often if deemed necessary by the owner's bridge inspector. A professional review **may** determine the priority for load rating the structure and for the appropriate level of gross load posting. Upon request, the Emergency Bridge Inspection team **may** be available to perform this review. The bridge owner **must** submit in writing to their respective contacts listed above, its recommendations for correcting the deficiencies.

Where the deck, superstructure, substructure or culvert is load rated, the bridge shall be load posted for the least rating.

RECOMMEND FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 9.9.2008
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

ALABAMA DEPARTMENT OF TRANSPORATION

GUIDELINES FOR OPERATION

SUBJECT: AUTHORITY TO CLOSE BRIDGE

Bridge inspectors qualified under the National Bridge Inspection Standards (NBIS) for certification **shall** have the authority to close any bridge, which in the opinion of the inspector, presents a clear and immediate danger to the safety of the traveling public.

The bridge closing **may** be immediate in that all traffic is stopped, re-routed, or detoured with little or no notice. If safety and circumstances permit, the closing **may** be planned so that signing and other provisions are completed before the bridge is closed.

As soon as possible after the decision has been made to close the bridge, the bridge inspector **shall** notify both the appropriate local authorities (division, county, city, etc.) and the Maintenance Bureau. The Maintenance Bureau **shall** also be notified as to the time, date, and reason for closing the bridge.

Upon request, the Emergency Bridge Inspection Team **shall** review the circumstances concerning the bridge closing in order to determine if the bridge should remain closed and to consider any other relative information.

The above requirements are effective immediately.

RECOMMEND FOR APPROVAL: _____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 9.9.2008
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: RESURFACING: ACCESS ENTRANCE TREATMENT

When private access entrances are encountered during highway resurfacing, the resurfacing treatment will include the access entrance road for a distance of 1 meter beyond the edge of pavement of the highway being resurfaced.

When commercial access entrances are encountered during highway resurfacing, the resurfacing treatment will include the access entrance road for a distance of 3 meters beyond the edge of pavement of the highway being resurfaced.

Exceptions to this policy will only be considered when it is deemed to be in the best interest of the Highway Department for the protection of the highway and the traveling public. Exceptions must be approved by the Maintenance Engineer prior to work being done.

RECOMMENDED FOR APPROVAL: _____Mitchell Kilpatrick_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____W.E. Page_____
OPERATIONS ENGINEER

APPROVAL: _____M. Roberts_____ _____8/20/93_____
HIGHWAY DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: REQUIREMENTS FOR INSTALLING AND/OR MAINTAINING 1-15, CITY LIMIT, AND D1-1 DIRECTIONAL SIGNS

In an effort to clarify some of the confusion that exist, the following guidelines shall govern the requirements for the placing and/or maintenance of 1-15, CITY LIMIT, signs and D1-1 DIRECTIONAL signs on the State maintained system.

The I-15, CITY LIMIT, sign should be used on conventional highways to identify the city limits of **incorporated** cities. The sign has the name of the city and the word message CITY LIMIT.

The boundaries for **unincorporated** towns may be marked with a smaller sign with only the town name displayed on the sign. This sign, when used, should be erected on the right side of the highway facing drivers entering the city or town.

The D1-1 DIRECTIONAL sign shall carry a single name of a city, town or other destination along with a directional arrow indicating the direction. The destination shown should be that of the next place on the route having a post office, railroad station, state route number, or other significant geographical identity. **DIRECTIONAL signs shall not be installed for unincorporated towns or communities.** Directional signs in place for unincorporated communities can be retained but no further maintenance or replacement is to be performed on them.

When used, these signs shall be installed in accordance with placement criteria contained in the Manual on Uniform Traffic Control Devices (MUTCD).

Any deviation from these guidelines must be approved by the Director, **in writing**, prior to the expenditure of State funds, either routine maintenance funds or special project funds.

RECOMMENDED FOR APPROVAL: _____Mitchell Kilpatrick_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Ray D. Bass_____
CHIEF ENGINEER

APPROVAL: _____Jimmy Butts_____ ____3/6/96__
TRANSPORTATION DIRECTOR DATE

ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

Subject: Funding and Maintenance of Scenic Byways.

The following shall guide the participation of the Alabama Department of Transportation in routes designated as scenic byways.

- ALDOT will continue to fund and perform traditional roadway and roadside maintenance on state routes that are designated as scenic byways.
- Funding for eligible scenic byway activities that are not highway related, whether on or off the state system, will be from Federal Scenic Byway funds or other non-ALDOT sources.
- ALDOT will only use state highway funds to match federal scenic byway funds that are to be used for highway related improvements on the state system.
- ALDOT will accept applications for scenic byway funds from local sponsors only when the local sponsor is a governmental entity. The local sponsor shall certify that matching funds are available.
- In-kind services will not be allowed as a source of matching funds from the local sponsor. The local sponsor must provide a 20% cash match or be reimbursed for only 80% of its costs. Exception may be made when the local sponsor can clearly display its ability to provide resources of sufficient value to constitute a 20% match and receives prior approval by ALDOT.
- ALDOT will consult with the Alabama Scenic Byway Advisory Committee in establishing priorities for Federal Scenic Byway Grant applications for byways on the Alabama Byway System. ALDOT will continue to carry out its responsibility in establishing priorities for grant applications on the National Scenic Byway System.
- ALDOT will not consider any grant application for scenic byway funds, or other funds, for improvements within any highway rights of way without the written consent of the authority that has jurisdiction over said facility

APPROVAL: _____
DEPUTY DIRECTOR, OPERATIONS

APPROVAL: _____ Nov 4, 2003
TRANSPORTATION DIRECTOR **DATE**

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: PREVENTIVE MAINTENANCE PROCEDURES

Preventive maintenance resurfacing projects are necessary to preserve Alabama's existing roadways. This work is intended to extend roadway life. Preventive maintenance is defined as a work effort up to planing cracked, rutted or oxidized pavement, providing a binder layer, providing a wearing layer, and providing an open grade friction course where specified by traffic volume or roadway type. Preventive maintenance will be performed on national highway system (excluding interstate) and state roadways. This guide does not address reconstruction projects that are beyond the scope of preventive maintenance and that require grade control. This guide also does not address elements outside of the roadway surface. These elements will be addressed in accordance with existing ALDOT procedures for resurfacing projects.

Preventive maintenance resurfacing projects will be developed as follows:

1. A scope of work inspection should be conducted on each resurfacing project by the Division. The scope team should consist of appropriate personnel as determined by the Division Engineer. FHWA should be included where appropriate. The on-site review should be conducted by the team of the entire project limits.
2. The Division should obtain appropriate accident history information for review by the scope team. The scope team should evaluate this accident history and incorporate personal knowledge of the roadway to determine if there are locations with pavement elements that should be further evaluated. These elements may include profile, cross slope and/or superelevation adjustments.
3. The scope team should prepare a written report which includes recommendations for all work to be included in the preventive maintenance project for approval by the Division Engineer.
4. If it is determined that applying roadway element improvements, as described in No. 2 above, are not feasible due to cost considerations, right-of-way impacts, etc., a letter should be written to the Chief Engineer for approval outlining the reasons roadway element improvements are not recommended for inclusion in the project and providing alternate mitigation recommendations (such as advisory speed signs, partial cross slope improvement, etc.) if appropriate.
5. Plans should be developed with typical sections and quantities addressing the following areas:
    a. Where no cross slope or superelevation adjustments are recommended, the typical section should show "match existing." These projects should be limited to buildups of no greater than a single binder layer and wearing surfaces.
    b. On all projects designed with multiple binder layers cross slope and superelevation correction should be made. Where cross slope and/or superelevation warrant adjustment, the typical section should show "n% approximate or e" ("n" is typically 2% but can be adjusted for specific needs). A table should be provided that shows the range of existing slope, PC and PT milepost, the required slope and the estimated planing and/or leveling to provide the corrected slope. A variable rate lower binder layer may be utilized in engineering cross slope corrections. Such layers will be designed in accordance with current guidance provided by the Bureau of Materials and Tests. Superelevation drawings should be provided so that field personnel can determine begin and end transition locations based on the PC and PT milepost.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ Nov 1, 2005
TRANSPORTATION DIRECTOR DATE

ALDOT GUIDELINES
ON THE USE OF CHANGEABLE MESSAGE SIGNS (CMS)
FOR AMBER ALERT MESSAGES

Changeable Message Signs (CMS) are an integral element in the State's Intelligent Transportation System program providing timely travel information to the motorists. The Federal Highway Administration has approved the use of CMS for displays related to Amber Alerts in addition to current road conditions or specific driver safety focused campaigns; such allowance is provided if a well-established local Amber Alert plan program is in place and agencies have developed a formal policy regarding the use of CMS in such a program.

These guidelines provide for the use of ALDOT CMS, only for official child abduction alerts issued or coordinated through the Alabama Department of Public Safety (DPS) or the Alabama Emergency Management Agency (EMA) in keeping with the State's Amber Alert Program. Only credible, real-time information, which is crucial to the safety of the victim, will be displayed on these CMS. Law enforcement activates a child abduction alert when circumstances meet Amber Alert criteria as determined by the Alabama Department of Public Safety.

ALDOT will only respond to official alert requests from the DPS in Montgomery, Alabama or EMA in Clanton, Alabama. ALDOT personnel will display the most appropriate CMS sign messages as provided herein. DPS or EMA will inform ALDOT of any changes to the Amber Alert message and will provide cancellation notice of the alert. These guidelines apply to the use of permanently installed overhead, 'T'-mounted or cantilever CMS signs. ALDOT will not be responsible for failure to display an Amber Alert message due to sign malfunction, required maintenance, communication system failure, availability of sign or display space.

ALDOT Division/District personnel should utilize the standard message scenarios as provided herein to the fullest extent possible, selecting the scenario that best fits the descriptive information provided by law enforcement. ALDOT Central Office may assist with the selection of the standard message set for any given alert. Vehicle, license plates, and abductee descriptions may be a part of the standard message set. The display of a contact phone number is advisable and will be provided to appropriate ALDOT personnel. Flashing beacons, if equipped, should be activated in conjunction with an Amber Alert message.

ALDOT Division/District personnel will determine if highway incident related messages, road closure and detour information etc. are to be preempted by any specific Amber Alert issued. It may be necessary to temporarily suspend display of a child abduction alert message on a sign(s) if a message needs to be displayed that warns of an immediate hazard to the traveling public. Again, authorized ALDOT personnel will make such determination. ALDOT Division/District personnel should monitor traffic during such Amber Alerts in order to determine if unintended consequences (excessive braking, pullovers, etc.) of displayed messages occur on the highway.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF

APPROVAL: Ray W. Bass
CHIEF ENGINEER

APPROVAL: _____ 07/18/03
TRANSPORTATION DIRECTOR **DATE**

Amber Alert DMS SCENARIO 1: 2-Panel/Frame display: Put up this message if we receive both vehicle description and license number information

Panel 1

K	I	D	N	A	P	P	E	D		C	H	I	L	D
			C	I	T	Y		N	A	M	E			
			C	A	L	L		*	H	P				

Panel 2

K	I	D	N	A	P	P	E	D		C	H	I	L	D
C	O	L	O	R		V	E	H		T	Y	P	E	
L	I	C		S	T		X	X	X	-	X	X	X	

All scenarios shall include "KIDNAPPED CHILD" as the first line of text.

All scenarios include city, state name (city location of abduction). County may be substituted if abduction occurs outside of city.

Flashing beacon, if equipped, should be activated.

Amber Alert DMS SCENARIO 2: 2- Panel/Frame display: Put up this message if we receive only license number information

Panel 1

K	I	D	N	A	P	P	E	D		C	H	I	L	D
			C	I	T	Y		N	A	M	E			
			C	A	L	L		*	H	P				

Panel 2

K	I	D	N	A	P	P	E	D		C	H	I	L	D
L	I	C		S	T		X	X	X	-	X	X	X	
			C	A	L	L		*	H	P				

All scenarios shall include "KIDNAPPED CHILD" as the first line of text.

All scenarios include city, state name (city location of abduction). County may be substituted if abduction occurs outside of city.

Flashing beacon, if equipped, should be activated.

Ambar Alert DMS SCENARIO 3: 2- Panel/Frame display: Put up this message if we receive only vehicle description information

Panel 1

K	I	D	N	A	P	P	E	D		C	H	I	L	D
			C	I	T	Y		N	A	M	E			
			C	A	L	L		*	H	P				

Panel 2

K	I	D	N	A	P	P	E	D		C	H	I	L	D
C	O	L	O	R		V	E	H		T	Y	P	E	
			C	A	L	L		*	H	P				

All scenarios shall include "KIDNAPPED CHILD" as the first line of text.

All scenarios include city, state name (city location of abduction). County may be substituted if abduction occurs outside of city.

Flashing beacon, if equipped, should be activated.

Amber Alert DMS SCENARIO 4: 3-Panel display: Put up this message if child description and veh/lic. known

Panel 1

K	I	D	N	A	P	P	E	D		C	H	I	L	D
			C	I	T	Y		N	A	M	E			
			C	A	L	L		*	H	P				

Panel 2

K	I	D	N	A	P	P	E	D		C	H	I	L	D
C	O	L	O	R		V	E	H		T	Y	P	E	
L	I	C		S	T		X	X	X	-	X	X	X	

Panel 3

K	I	D	N	A	P	P	E	D		C	H	I	L	D
A	G	E		X	X		H	A	I	R		B	R	N
E	Y	E	S		B	L	U		W	T		X	X	X

All scenarios shall include "KIDNAPPED CHILD" as the first line of text.

All scenarios include city, state name (city location of abduction). County may be substituted if abduction occurs outside of city.

Flashing beacon, if equipped, should be activated.

Amber Alert DMS SCENARIO 5: 2- Panel/Frame display: Put up this message only during an Amber Alert **Test**

Panel 1

		S	I	G	N		U	N	D	E	R			
					T	E	S	T						
				1	2	3	A	B	C					

Panel 2

		S	I	G	N		U	N	D	E	R			
					T	E	S	T						
				1	2	3	A	B	C					

Flashing beacons, if equipped, should NOT be activated

GUIDELINES FOR OPERATIONS

ALABAMA DEPARTMENT OF TRANSPORTATION
POLICY FOR THE USE OF CHANGEABLE MESSAGE SIGNS

I. POLICY STATEMENT

This policy provides specific guidelines for the use of stationary and portable changeable message signs (CMS) used on Interstate and State Highway Systems in the State of Alabama. Messages displayed shall convey pertinent information to motorists, which provide positive assistance to their driving habits and decisions. Messages shall be conveyed in a standard, nonconfusing manner that allows drivers to both perceive and react to the information given in a timely fashion. Messages shall conform to the MUTCD. Furthermore, no portion of this Policy is intended to conflict with the MUTCD. Where such conflict may exist, the MUTCD shall govern.

II. PURPOSE

CMS can be used to effectively reduce congestion caused by planned or unplanned incidents such as excessive daily traffic, accidents, detours, construction delays, special events, etc. Once drivers perceive the messages to be reliable to the extent the information is relevant in assisting the motorists or reducing one's delay, CMS can successfully be used to convey information to alter traffic patterns or modes of transportation.

III. AUTHORIZATION

The Chief Engineer, State Maintenance Engineer, State Construction Engineer or Division Engineer will authorize the use of all CMS both State-owned and Contractor furnished. Each State-owned CMS shall have a person(s) designated by the Engineer-in-Charge to be responsible for the authorization of messages to be displayed and for the care, maintenance, and security of the CMS. This person may delegate certain responsibilities in regard to the CMS but should ensure that any personnel given access to the CMS understands and adheres to this policy. Access to the CMS shall only be given to responsible individuals. The Engineer-in-Charge will ensure that efforts are coordinated such that motorists are informed of the most critical information based on the priority of messages listed below.

IV. DISPLAY OF MESSAGES ON STATIONARY CMS

Messages shall be displayed on stationary CMS in accordance with the below listed priorities. When a stationary CMS is not being used to display one of the below listed message types, it shall remain blank.

Types of messages conveyed on stationary CMS have the following priority:

1. Emergencies such as evacuations or closures required by the ALDOT, the Department of Emergency Management, local law enforcement or the military.

2. Hazardous and/or uncommon road conditions, which require motorists to alter their driving, such as severe weather conditions, accidents, work zone activities, or hazardous spills.

3. Traveler information and suggested alternate routes for delays and/or congestion caused by planned or unplanned incidents, including but not limited to estimated travel times to major junctions or points of interests.

4. Advance notice for scheduled incidents such as lane closures, road closures, or special events.

5. Other public information which assists the Department in improving highway safety and reducing congestion may be displayed after careful consideration. However, the message should encourage motorists to alter their driving. The Chief Engineer, State Maintenance Engineer, or Division Engineer must approve said messages prior to their display.

6. Amber Alert messages initiated by the Department of Public Safety and/or Emergency Management Agency.

CMS shall not display messages that in any way advertise commercial events or entities. CMS shall only display messages, which pertain to highway safety or congestion reduction. CMS shall not be used to convey the same message for an extended period of time. CMS shall not repeat guide sign or warning sign messages found on permanent sign installation unless an engineering investigation and study has determined such need. In this case, the repetition shall be of a temporary nature until existing signing schemes or other traffic control devices can be upgraded or modified. Exceptions to adherence of this Policy for the following types and uses of CMS in the MUTCD are as follows: 2B.11 Speed Limit Signs, 2B.17 Turn Prohibition Signs, 2B.48 Preferential Lane Signs, 4D.05 through 4D.07 Steady Signal Indications, 7B.11 School Speed Limit Assembly Sign, and 8B.05 and 10D.06 Turn Restriction During Preemption.

V. DISPLAY OF MESSAGES ON PORTABLE CMS

Messages shall be displayed on portable CMS in accordance with the below listed priorities. When the Portable CMS is not being used to display one of the below listed message types, it shall remain blank with the exception of default "power off" displays.

Types of messages conveyed on portable CMS have the following priority:

1. Emergencies such as evacuations or closures required by the ALDOT, the Emergency Management Agency, local law enforcement, or the military.

2. Hazardous and/or uncommon road conditions which require motorists to alter their driving such as severe weather conditions, accidents, work zone activities, or hazardous spills.

3. Short term detours (mandatory).

4. Traveler information and suggested alternate routes for delays and/or congestion caused by planned or unplanned incidents.

5. Advance notice for scheduled incidents such as lane closures, road closures, or special events.

6. Other public information, which assists the Department in improving highway safety and reducing congestion, may be displayed after careful consideration. However, the message must require motorists to alter their driving. Approval for the same shall be made by the Chief Engineer, State Maintenance Engineer, or Construction Engineer.

CMS shall not display messages that in any way advertise commercial events or entities. CMS shall only display messages, which pertain to highway safety or congestion reduction. CMS should not be used to convey a message for an extended period of time that could be conveyed with a conventional warning sign. Although, such a display may be employed on a temporary basis prior to a permanent installation or solution is effected.

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF

APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 07/18/03
TRANSPORTATION DIRECTOR **DATE**

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: RED LIGHT RUNNING CAMERA IMPLEMENTATION GUIDE

This guideline establishes the Department of Transportation's process and procedures for identifying and documenting red light running issues at signalized intersections, potential alternative engineering countermeasures, red light running camera justification process, and the proper implementation of red light running camera enforcement programs.

The Alabama Department of Transportation Red Light Running Camera Implementation Guide shall be referenced and applied whenever a state or local agency considers, implements or operates a red light running camera system along a state maintained route.

A copy of the Red Light Running Camera Implementation Guide is available on the Office of Safety Operations website.

RECOMMENDED FOR APPROVAL:

TRANSPORTATION PLANNING & MULTIMODAL PROGRAMS ENGINEER

STATE MAINTENANCE ENGINEER

APPROVAL:

CHIEF ENGINEER

DEPUTY DIRECTOR, OPERATIONS

APPROVAL:

TRANSPORTATION DIRECTOR

DATE 2/20/2015

SECTION 6

MATERIALS

C O N T E N T S

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: BASE AND PAVEMENT BUILDUPS ON RAMPS AND CROSSOVERS

Consideration should be given to reducing base and pavement design for ramps and cross-overs. The design may be reduced where feasible.

RECOMMENDED FOR APPROVAL: _____Larry Lockett_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: MATERIALS PIT OPTIONS

Due to problems in securing materials options from property owners, and the fact that they are very seldom used by the contractor, the State will discontinue the securing of these options.

The pits shall be indicated as a possible source and then it becomes the contractor's responsibility to secure permission to remove the material.

RECOMMENDED FOR APPROVAL: _____Larry Lockett_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: NUCLEAR GAUGES

It will be the responsibility of the Division Materials' Engineer to utilize Pay Items 306-A and 306-D until the State has sufficient nuclear gauges, (moisture density/asphalt thin layer) for placement on projects and for use as replacements for gauges that malfunction while on projects. Item 410-D, (Asphalt Content Gauges) will be utilized on projects with significant tonnage until sufficient gauges are inventoried by that Division for placement at asphalt plants in their Division.

In analyzing the number of gauges in inventory for each Division, consideration should be given to repair, servicing, and recalibration time for the above gauges.

RECOMMENDED FOR APPROVAL: _____Larry Lockett_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/30/89_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: USE OF COLD LAID POLYMER TAPE

Cold Laid Polymer Tape may be used as an alternate to thermoplastic on long line applications (center-line, edge lines, etc.) assuming the material will perform equally or better than other materials. Polymer tape should be considered as an effective use of material on high volume urban roadways due to elimination of temporary striping requirements.

RECOMMENDED FOR APPROVAL: _____P.L. Cain_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: FOUNDATION INVESTIGATION FOR TRAFFIC CONTROL DEVICES, HIGHWAY LIGHTING, AND OVERHEAD SIGN STRUCTURES

The following guidelines will be adhered to during the design of traffic control devices, highway lighting, and overhead sign structures. Typically, the request for foundation investigations for traffic control devices, highway lighting, and overhead sign structures are made at the conclusion of the PS&E plan review by the lead designer. If a request for drilling assistance is sent to the Geotechnical Division, the request shall include three copies of the plan sheets, including the title sheet, traffic signal, lighting or sign layout sheets and the sheets which link structure numbers to the corresponding stations and offset locations. A cover letter shall accompany the plan set which indicates the project number, charge number, letting date for the project, and instructions on whether assistance is needed with drilling and/or with preparation of the foundation report. A copy of this request letter shall be forwarded to the Traffic Design Section of the Design Bureau for tracking purposes.

Drilling will be performed with the intent of providing boring logs and L-Pile parameters to the contractors/designers to aid in the selection of the appropriate foundation type and size. The number of borings to be performed and location shall be determined in accordance with the following:

Metal ITS Poles	One boring per structure
High Mast Light Structure:	One boring per structure
Traffic Signals:	One boring per structure
Overhead Signs:	One boring per foundation
Cantilever Signs:	One boring per foundation
Lighting Poles 70 feet or greater in height:	One boring per structure
Lighting Poles less than 70 feet in height:	# of borings determined by the State Geotechnical Engineer

Borings should be drilled as close as possible to the structure locations. For lighting poles less than 70 feet in height, metal poles for ITS devices, and traffic signal strain poles, borings shall

extend a minimum of 20 feet in depth. For all other structures, the borings shall extend a minimum of 30 feet in depth.

The depths listed above are minimum depths. Generally, borings should not be terminated in loose, soft, or otherwise unsuitable soils. When auger refusal is encountered prior to reaching the recommended minimum depth, a minimum of 10 feet of competent rock shall be cored.

In cases where the geology across the site is uniform, the number of holes drilled as listed above may be reduced at the discretion of the State Geotechnical Engineer. Borings which are to represent more than one structure shall be labeled with all the structure numbers which each boring is to represent.

Water levels at the time of drilling, as well as delayed water levels, if available, shall be recorded and reported on the boring logs.

In cases where structures are to be placed in fill sections greater than 3 feet deep, a plan note shall be developed indicating that the required soils data will be gathered after the fill placement is complete.

In general borings will be completed in accordance with AASHTO T-206 and T-225. Each soil strata encountered shall be classified in accordance with the Unified Soils Classification System. Each classification shall be shown on the boring log with the supporting laboratory analysis. The Northing, Easting, station, and elevation of the boring location as well as the structure number(s) will be shown on the log.

In addition to the boring logs, a licensed engineer shall provide an L-pile parameters table for each boring which shall be placed on Mylar sheets for inclusion in the final plan assembly.

If the field investigation is not performed by the Bureau of Materials & Tests, a brief report describing the local geology, the field conditions encountered, the drilling methods used, and a Soils Classification Summary, shall be prepared and submitted with the ½ scale boring sheets to the State Geotechnical Engineer for approval. Once approved, the signed and stamped boring and L-Pile parameter Mylars shall be submitted to the lead designer for distribution.

If during the construction project it becomes necessary to move a foundation location more than 10 feet from the previously designed location, the Bureau of Materials & Tests shall be contacted to determine if further investigation will be required.

RECOMMENDED FOR APPROVAL: Scott W. Lerge
STATE MATERIALS & TESTS ENGINEER

APPROVAL: Ronald L. Baldwin
CHIEF ENGINEER

APPROVAL: John R. Cooper
TRANSPORTATION DIRECTOR

6/19/2015
DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: USE OF RECLAIMED METAL FROM OLD SIGNS

Reclaimed metal from old signs should be used for sign blanks on new construction to the extent practical. The use of reclaimed metal for sign blanks must be provided for on the plans and/or by special provision. Test reports will not be required on the reclaimed metal.

RECOMMENDED FOR APPROVAL: _____P.L. Cain_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: **ALTERNATIVE DESIGN / ALTERNATIVE BID (AD/AB) OF PAVEMENT MATERIALS**

Background

This GFO provides guidance on an AD/AB approach that allows concrete and asphalt pavements to be bid on the same project. Where feasible and practical, ALDOT will provide alternative pavement designs utilizing asphalt or concrete materials. Such projects shall be bid and awarded on a lowest initial cost basis. It is the intent of this GFO to offer an approach that provides fair competition and best serves the interests of the State.

Guidance

The following principles shall guide the AD/AB approach to bidding alternative pavement materials on new construction and pavement reconstruction projects.

1. The restriction of using limestone coarse aggregate in mainline pavement is lifted based on the following understanding of future treatments. The restriction on the use of limestone in concrete pavements was a result of finding unacceptable friction numbers after grinding was applied to a concrete pavement with 100% limestone aggregate. Concrete pavements with limestone that have not been diamond ground can provide acceptable friction numbers for long periods of time before the fiction numbers become a concern. If grinding is applied to concrete pavements with limestone aggregate, the friction numbers are reduced at an accelerated rate. This phenomenon led to ALDOT's specification to not allow limestone aggregate in concrete pavements. Therefore, the Department has decided that it will be acceptable to allow limestone aggregate in concrete pavements, with the understanding that the pavement will never be ground. Grinding concrete pavement is typically performed to obtain the Department's rideability specification during initial construction, or during a rehabilitation operation to restore the smoothness of the surface by removing joint faulting, typically when the pavement reaches about 20 years in age. The permitted use of limestone aggregate in our pavement will be allowed with the understanding that grinding cannot be used to achieve the rideability spec, or if the Department decides to allow diamond grinding, it will be limited to small areas (localized roughness). Pavement grooving will be required where the pavement has been ground.
2. Generally, pavement designs for concrete pavements should be developed without the requirement of asphalt pay items. This will require that concrete roadways be designed with concrete shoulders.
3. Concrete slab thickness should be limited to 12 inches. ALDOT will continue to use the pavement structural design software, DARWin 3.1, based on the 1993 AASHTO Guide for

Design of Pavement Structures, for concrete pavement structural designs. Because some believe that the DARWin 3.1 software is conservative and produces excessive concrete pavement thicknesses, the design team may check the performance of the DARWin 3.1 pavement design using the most current version of the AASHTOWare Pavement ME Design. If warranted, engineering judgement can be used to recommend a thinner concrete pavement thickness. Caution shall be exercised to not recommend substantially thinner pavement thickness from the DARWin 3.1 recommended design. However, the Department does recognize that an over designed concrete pavement is not cost effective. The Department's position will be to limit concrete slab thickness to 12 inches in AD/AB situations. Concrete pavement will be covered with an asphalt wearing layer at the first rehabilitation cycle, and therefore, pavement thickness may not be as critical as it was when the concrete pavement was expected to last through several pavement rehabilitation cycles.

4. Furthermore, it shall be the policy of ALDOT to develop only concrete pavement designs on projects where we are adding a lane adjacent to existing concrete pavement; especially, if the existing concrete pavement is to be retained and not reconstructed. Likewise, where a lane is added adjacent to asphalt pavement, only an asphalt pavement design will be considered.
5. Exceptions to these requirements may be made with the approval of the Chief Engineer.

RECOMMENDED FOR APPROVAL: _____
CHIEF ENGINEER

APPROVAL: _____ 8-14-18
TRANSPORTATION DIRECTOR DATE

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: BITUMINOUS SURFACE TREATMENTS

UNDER THIN OVERLAYS

During the preliminary engineering phase of all paving projects (especially resurfacing projects) a determination will be made as to the advisability/desirability of placing a bituminous surface treatment directly beneath a thin overlay, or wearing surface only. On resurfacing projects, if it is determined that the in-place pavement structure will remain extensively cracked after the completion of milling operations, consideration should be given to placing a bituminous surface treatment to help seal off the remaining pavement structure and underlying layers from water infiltration.

In general, on those projects wherein the number of 18-kip ESALs is less than or equal to 3,000,000 (based upon a 20-year traffic projection), it will be acceptable to place a Bituminous Surface Treatment, Type "E", directly beneath a wearing surface if the in-place pavement structure remains extensively cracked after the completion of milling operations; however, this practice is not recommended for intersections or other areas where there are numerous stopping/starting movements.

On interstate routes and other high traffic volume routes (number of 20-year 18-kip ESALs greater than 3,000,000), at least one binder layer and a wearing surface must be placed on top of the Bituminous Surface Treatment, Type "E".

GFO 6-8: BITUMINOUS SURFACE TREATMENTS					
TABLE 1					
RECOMMENDED APPLICATIONS UNDER THIN OVERLAYS					
ROADWAY SURFACE AFTER MILLING	PAVEMENT STRUCTURE AND UNDERLYING LAYERS SUBJECT TO WATER INFILTRATION	TRAFFIC (18-kip ESALs)	SIGNALIZED INTERSECTIONS OR STOPPING /STARTING MOVEMENTS	ACCEPTABLE BITUMINOUS SURFACE TREATMENT	POLYMER MODIFIERS
NO CRACKING	NO	ESALs ≤ 3.0×10^7	NO	NOT RECOMMENDED	
	NO	ESALs ≤ 3.0×10^7	YES	NOT RECOMMENDED	
	YES	ESALs ≤ 3.0×10^7	NO	Type "E"	All bituminous surface treatment applications on the mainline roadway and shoulders where the surface treatment is to be subjected to traffic
	YES	ESALs ≤ 3.0×10^7	YES	NOT RECOMMENDED	
	NO	ESALs ≥ 3.0×10^7	NO	NOT RECOMMENDED	
	NO	ESALs ≥ 3.0×10^7	YES	NOT RECOMMENDED	
	YES	ESALs ≥ 3.0×10^7	NO	Type "E", at a minimum one binder layer and a wearing surface placed on top of the Bituminous Surface Treatment	All bituminous surface treatment applications on the mainline roadway and shoulders where the surface treatment is to be subjected to traffic
	YES	ESALs ≥ 3.0×10^7	YES	NOT RECOMMENDED	
EXTENSIVE CRACKING	NO	ESALs ≤ 3.0×10^7	NO	NOT RECOMMENDED	
	NO	ESALs ≤ 3.0×10^7	YES	NOT RECOMMENDED	
	YES	ESALs ≤ 3.0×10^7	NO	Type "E"	All bituminous surface treatment applications on the mainline roadway and shoulders where the surface treatment is to be subjected to traffic
	YES	ESALs ≤ 3.0×10^7	YES	NOT RECOMMENDED	
	NO	ESALs ≥ 3.0×10^7	NO	NOT RECOMMENDED	
	NO	ESALs ≥ 3.0×10^7	YES	NOT RECOMMENDED	
	YES	ESALs ≥ 3.0×10^7	NO	Type "E", at a minimum one binder layer and a wearing surface placed on top of the Bituminous Surface Treatment	All bituminous surface treatment applications on the mainline roadway and shoulders where the surface treatment is to be subjected to traffic
	YES	ESALs ≥ 3.0×10^7	YES	Type "E", at a minimum one binder layer and a wearing surface placed on top of the Bituminous Surface Treatment	All bituminous surface treatment applications on the mainline roadway and shoulders where the surface treatment is to be subjected to traffic

WATERPROOFING LAYER ON BASE COURSES

The main purpose of a waterproofing layer utilized on base courses is to seal these bases which have to "sit out" over the winter before the overlying layer can be placed; therefore, a bituminous surface treatment may be placed on the upper layer base course on construction projects. A Bituminous Surface Treatment, Type "E", should be placed on the upper layer base course when it is a bituminous plant mix base course layer, and a

Bituminous Surface Treatment, Type "AE", should be placed on the upper layer base course when it is a crushed aggregate base or a soil binder type base course.

The bituminous surface treatment should be included in the original pavement design, but it will not carry a structural coefficient number. The bituminous surface treatment should also be included in the construction plan assembly and should be shown in the plan assembly as being required on the upper layer of base. If the upper layer of base will not be placed by the time winter rains become numerous (usually around November), the bituminous surface treatment should be placed on a lower layer of base to prevent saturation of the base and subgrade during the winter season.

If a bituminous surface treatment is included in the plan assembly for use as a waterproofing layer as outlined above, it must be utilized. It cannot be included in the plan assembly as a contingency item.

GFO 6-8: BITUMINOUS SURFACE TREATMENTS							
TABLE 2							
RECOMMENDED APPLICATIONS FOR WATERPROOFING LAYER ON BASE COURSES							
APPLICATION	**UPPER BASE COURSE TYPE**	**INCLUDE IN THE ORIGINAL PAVEMENT DESIGN**	**STRUCTURAL LAYER COEFFICIENT NUMBER**	**INCLUDE IN CONSTRUCTION PLAN ASSEMBLY (Note 1)**	**SHOWN IN THE PLAN ASSEMBLY AS BEING REQUIRED ON THE UPPER LAYER OF BASE**	**BITUMINOUS SURFACE TREATMENT (Note 2)**	**POLYMER MODIFIERS**
WATERPROOFING LAYER	BITUMINOUS PLANT MIX BASE COURSE	YES	N/A	YES	YES	Type "E"	All bituminous surface treatment applications on the mainline roadway and shoulders where the surface treatment is to be subjected to traffic
WATERPROOFING LAYER	CRUSHED AGGREGATE BASE COURSE SEC 825	YES	N/A	YES	YES	Type "AE"	All bituminous surface treatment applications on the mainline roadway and shoulders where the surface treatment is to be subjected to traffic
WATERPROOFING LAYER	SOIL BINDER TYPE BASE COURSE SEC 820, 823	YES	N/A	YES	YES	Type "AE"	All bituminous surface treatment applications on the mainline roadway and shoulders where the surface treatment is to be subjected to traffic

Notes:

Note 1: If a bituminous surface treatment is included in the assembly for use as a waterproofing layer as outlined above, it must be utilized. It cannot be included in the plan assembly as a contingency item.

Note 2: If the upper layer of base will not be placed by the time winter rains become numerous (usually around November), the bituminous surface treatment should be placed on a lower layer of base to prevent saturation of the base and subgrade during the winter season.

PRIME TREATMENTS ON GRANULAR BASE COURSES

When no public traffic is expected to be placed on a granular base layer, a prime coat (Bituminous Surface Treatment, Type "A") should be used on all granular base layers prior to the placement of a bituminous plant mix layer on top of the granular base. If any public traffic or a significant amount of contractor traffic will be placed on the granular base layer, a Bituminous Surface Treatment, Type "AE", will be placed on the granular base layer prior to the placement of a bituminous plant mix layer. It will be acceptable to place a Bituminous Surface Treatment, Type "E", in lieu of "AE", if it is placed before the granular base starts to dry out and the moisture level becomes too low.

If a permeable asphalt treated base (PATB) layer is to be placed on a granular base layer, a geotextile separator layer will be used between the Bituminous Surface Treatment, Type "A", and the PATB, or a Bituminous Surface Treatment, Type "E", will be used between the Bituminous Surface Treatment, Type "A" and the PATB. Before a PATB layer can be placed on a bituminous surface treatment, the bituminous surface treatment must be inspected to check for any discontinuities (cracks, tears, or breaks) in the bituminous surface treatment application. If any discontinuities in the bituminous surface treatment are found to exist, they must be repaired prior to the placement of the PATB layer.

The best way to ensure that our granular bases do not become saturated from infiltrated water is to place a prime treatment on all granular bases. The prime treatment will act as moisture barrier against infiltrated water entering the pavement substrata and will also serve as a separator layer to keep fines from contaminating a permeable base being placed on a granular layer.

GFO 6-8: BITUMINOUS SURFACE TREATMENTS					
TABLE 3					
RECOMMENDED APPLICATIONS FOR PRIME TREATMENTS ON GRANULAR BASE COURSES					
UPPER BASE COURSE TYPE	**PRIME TREATMENT**	**EXPOSURE TO TRAFFIC Note 1**	**BITUMINOUS SURFACE TREATMENT TYPE (SEPARATOR LAYER)**	**REQUIRED SEPARATOR LAYER**	**POLYMER MODIFIERS**
GRANULAR	BITUMINOUS SURFACE TREATMENT	NO	Type "A"	-	-
GRANULAR	BITUMINOUS SURFACE TREATMENT	YES	Type "AE" **Note 2**	-	All bituminous surface treatment applications on the mainline roadway and shoulders where the surface treatment is to be subjected to traffic
GRANULAR	PERMEABLE ASPHALT TREATED BASE (PATB)	NO	Type "AE" **Note 3**	**Bituminous Surface Treatment Type "E"** between the Bituminous Surface Treatment and the PATB **Note 3**	-
GRANULAR	PERMEABLE ASPHALT TREATED BASE (PATB)	NO	Type "A" With GEOTEXTILE SEPARATOR **Note 3**	**Geotextile Separator Layer** between the Bituminous Surface Treatment and the PATB **Note 3**	-
GRANULAR	PERMEABLE ASPHALT TREATED BASE (PATB)	YES	Type "AE"	**Bituminous Surface Treatment Type "E"** between the Bituminous Surface Treatment and the PATB **Note 3**	All bituminous surface treatment applications on the mainline roadway and shoulders where the surface treatment is to be subjected to traffic
GRANULAR	PERMEABLE ASPHALT TREATED BASE (PATB)	YES	Type "A"	**Geotextile Separator Layer** between the Bituminous Surface Treatment and the PATB **Note 3**	All bituminous surface treatment applications on the mainline roadway and shoulders where the surface treatment is to be subjected to traffic

Notes:

1. Traffic is defined as a significant amount of contractor traffic and/or any public traffic for 2 -3 days or more.

2. It will be acceptable to place a Bituminous Surface Treatment, Type "E", in lieu of Type "AE", if it is placed before the granular base starts to dry out and the moisture level becomes too low.

3. Before a PATB layer can be placed on a bituminous surface treatment, the bituminous surface treatment must be inspected to check for any discontinuities (cracks, tears, or breaks) in the bituminous surface treatment application. If any discontinuities in the bituminous surface treatment are found to exist, they must be repaired prior to the placement of the PATB layer.

POLYMER MODIFIERS

Polymer modifiers shall be used in the liquid asphalt for all bituminous surface treatment applications on the mainline roadway and shoulders where the surface treatment is to be subjected to traffic indefinitely (final wearing surface), or for a period exceeding more than two (2) or three (3) days. Polymer modifiers are utilized to facilitate retention of the aggregates ("chips") in the bituminous surface treatment that might otherwise be lost due to exposure to vehicular traffic. The vehicular traffic may be either a significant number of construction vehicles, public vehicles, or a combination thereof.

PLACEMENT

Unless otherwise directed by the Engineer, any bituminous surface treatments shown on typical section sketches in plan assemblies must be placed in the order shown on the typical section sketches.

Recommended for Approval: B. E. Gal
Bureau Chief/Division Engineer

Approval: D. W. Vaughn
Chief Engineer

Approval: John A. Cooper
Transportation Director

3/28/12
Date

STATE OF ALABAMA
DEPARTMENT OF TRANSPORTATION
GUIDELINES FOR OPERATIONS

SUBJECT: BITUMINOUS PLANT MIXES

The Design Agency will specify the design layers and pay items on the plans and these shall be followed during construction unless a change is specifically approved and documented. For the selection of the design layers and pay items, the following shall be adhered to:

Safety Layer shall be placed over a wearing surface as the final layer of specified material designed for the purpose of eliminating a hazardous condition.

Wearing Surface Layer shall be the final layer of specified material designed to accommodate the traffic load. The layer shall resist skidding, traffic abrasion and the disintegrating effects of climate.

Binder Layer(s) shall be a layer or layers of specified material that lie below the wearing surface and overlay the base. The layer immediately underlying the wearing surface layer shall be designated as an upper binder layer. All other binder layers shall be designated as lower binder layers.

Base Layer(s) shall be a layer or layers of specified material placed on a subbase or a subgrade to support the bound pavement layers.

1. DESIGNATION OF MIXES

Bituminous Safety Layer

The primary designation for the bituminous safety layer shall be:

420A- Polymer Modified Open Graded Friction Course (OGFC)

Bituminous Wearing Surface Layer

The primary designation for the bituminous wearing surface layer shall be one of the following:

423A- Stone Matrix Asphalt Wearing Layer (SMA)
424A- Superpave Bituminous Concrete Wearing Surface Layer
424T- Superpave Thin-Lift Bituminous Concrete Wearing Surface Layer

Bituminous Binder Layer(s)

The primary designation for the bituminous binder layer(s) shall be one of the following:

423B- Stone Matrix Asphalt Binder Layer (SMA)
424B- Superpave Bituminous Concrete Upper Binder Layer
424B- Superpave Bituminous Concrete Lower Binder Layer

Bituminous Base Layer(s)

The primary designation for the bituminous base layer(s) shall be:

424C- Superpave Bituminous Concrete Base Layer

For the wearing surface, binder and base mixes the specified laydown rates shall conform to the following ranges:

Referenced Layer	Pay Item	Laydown Rate	Approx. Thickness
OGFC(Safety)	420A-	90 lb/sy 50 kg/m²	1.00 in 2.54 cm
Thin-Lift	424T-	60-75 lb/sy 33-40 kg/m²	0.54-0.68 in 1.36-1.71 cm
3/8” Max. Agg. Size (9.5 mm)			
Wearing Surface	423A-, 424A-	80-110 lb/sy 45-60 kg/m²	0.72-1.00 in 1.82-2.51 cm
Binder Layer	423B-, 424B-	80-110 lb/sy 45-60 kg/m²	0.72-1.00 in 1.82-2.51 cm
1/2” Max. Agg. Size (12.5 mm)			
Wearing Surface	423A-, 424A-	135-225 lb/sy 75-120 kg/m²	1.22-2.02 in 3.09-5.14 cm
Binder Layer	423B-, 424B-	135-225 lb/sy 75-120 kg/m²	1.22-2.02 in 3.09-5.14 cm
3/4” Max. Agg. Size (19.0 mm)			
Wearing Surface	424A-	165-280 lb/sy 90-150 kg/m²	1.49-2.52 in 3.77-6.40 cm
Binder Layer	423B-, 424B-	165-280 lb/sy 90-150 kg/m²	1.49-2.52 in 3.77-6.40 cm
1” Max. Agg. Size (25.0 mm)			
Binder Layer	423B-, 424B-	250-350 lb/sy 135-190 kg/m²	2.25-3.15 in 5.72-8.00 cm
Base Layer	424C-	250-350 lb/sy 135-190 kg/m²	2.31-3.24 in 5.88-8.23 cm
1 1/2” Max. Agg. Size (37.5 mm)			
Binder Layer	424B-	330-350 lb/sy 180-190 kg/m²	2.97-3.15 in 7.54-8.00 cm
Base Layer	424C-	330-350 lb/sy 180-190 kg/m²	3.06-3.24 in 7.76-8.23 cm

Note:
The use of 1 1/2" maximum aggregate size mixes shall be held to a minimum, except for use in narrow-width (3 feet (1 m) or less) widening applications.

2. DETERMINATION OF ESAL RANGE

For the Section 420 (OGFC) and Section 423 (SMA) mixes, the designation of an ESAL Range is not applicable.

For the Section 424 mixes, the number of 18-kip (80 kN) equivalent single axle loads (ESALs) in the design lane for a traffic analysis period of 20 years must be calculated in order to determine the applicable ESAL Range from the specifications.

The number of ESALs in the design lane over the 20-year traffic analysis period is calculated as follows:

$$ESALS = \frac{(C+P)}{2}(TADT)(0.99)(FDD)(FLD)(7{,}300)$$

Where:

C = Current or initial, average annual daily traffic (AADT) volume.
P = Projected or future, AADT volume in 20 years.
TADT = Percent commercial vehicles expressed in decimal format.
0.99 = Truck weight distribution factor or average number of 18-kip (80 kN) ESALs applied per truck.
FDD = Directional distribution factor. Use 0.50 unless specified otherwise by Transportation Planning and Modal Bureau.
FLD = Lane distribution factor. Use values selected from the following:

Number of Lanes In One Direction	**FLD**	
	Rural	Urban
1	1.00	1.00
2	0.95	0.85
>2	0.70	0.70

7,300 = Number of days in 20 years or (20 X 365).

Traffic data used in calculating the number of ESALs shall be project specific and shall be obtained from the Transportation Planning and Modal Programs Bureau. The current or initial AADT volume shall correspond to the year in which the project will be let to contract, with the projected or future AADT volume being 20 years thereafter. The designer is admonished not to "factor up" old traffic that he/she may have on file in order to obtain current and projected traffic volumes for a project.

If the project specific traffic data provides varying traffic volumes along the project (e.g., numerous turning movements), varying number of lanes along the project (e.g., 2-lane section going to a 4-lane section, etc.) and/or if the project traverses both a rural area and an urbanized area, the ESAL Range specified shall be that which corresponds to the highest number of 20-year ESALs along the project.

Designers should further analyze varying traffic data within a project to determine if differential designs and/or rehabilitation treatments are warranted within the project or if the project should be recommended for re-evaluation, breaking the project into segments of similar design and/or rehabilitation treatments.

If the traffic data provides one value of TADT for the current traffic volume and a different value of TADT for the projected traffic volume, then the current and projected traffic volumes shall be multiplied by their respective TADT values and the resulting values shall be used for "C" and "P" in the preceding equation. In this situation, the TADT term has been eliminated as a single multiplier on the right-hand side of the equation and has in fact been incorporated into the individual "C" and "P" terms.

EXAMPLE ESAL CALCULATIONS:

Example A:

1. Four Lane Rural Project (Two lanes in one direction)
2. C = 5,000 vehicles per day
3. P = 8,000 vehicles per day
4. TADT = 17%
5. Directional split is 50-50 (FDD = 0.50)

Determine: The number of ESALs that shall be used to select the ESAL Range.

Solution: From the table of lane distribution factors, FLD = 0.95 for four lane rural roadway.

$$ESALS = \frac{(5{,}000 + 8{,}000)}{2}(0.17)(0.99)(0.50)(0.95)(7{,}300) = 3{,}793{,}272$$

Example B:

1. Four Lane Urban Project (Two lanes in one direction)
2. C = 18,500 vehicles per day (TADT = 20%)
3. P = 27,500 vehicles per day (TADT = 20%)
4. Directional split is 50-50 (FDD = 0.50)

Determine: The number of ESALs that shall be used to select the ESAL Range.

Solution: From the table of lane distribution factors, FLD = 0.85 for four lane urban roadway.
C = 18,500(0.20) = 3,700
P = 27,500(0.25) = 6,875

$$ESALS = \frac{(3{,}700 + 6{,}875)}{2}(0.99)(0.50)(0.85)(7{,}300) = 16{,}240{,}424$$

For those projects having varying traffic volumes, non-constant TADT values, and/or variable number of lanes, it may be desirable to coordinate the determination of the applicable ESAL Range with the Materials Section of the Bureau of Materials and Tests.

In calculating the number of ESALs, do not round off intermediate numerical values for successive steps of the ESAL calculation. Wait until the final numerical value is obtained and then round off to the nearest whole number digit. The number of ESALs calculated and the resulting ESAL Range shall be clearly stated in the materials write-up for the project. The actual ESAL calculation shall also be included in the materials write-up as backup documentation.

ESAL Designation	Calculated 18k ESAL (20 year)
ESAL Range A/B	0.0 to $1.0*10^6$
ESAL Range C/D	$1.0*10^6$ to $1.0*10^7$
ESAL Range E	$1.0*10^7$ to $3.0*10^7$
Section 423 (SMA)	Greater than $3.0*10^7$

For those projects in the above described ESAL Range that require multiple lifts of binder material, the final lift of binder material will be designated as the upper binder layer. The other lift(s) of binder material necessary to complete the total laydown that is required will carry the lower binder designation.

If it is determined that the number of 20-year ESALs for a project is equal to or greater than 3.0×10^7, Section 423 (SMA) mixes shall be utilized on the project.

For Section 423 (SMA) and ESAL Range E mixes as stated in the specifications, a polymer modified liquid asphalt will be required in the mix for the top 2 inches (50 mm) of the structural pavement build-up, excluding any Section 420 polymer modified OGFC that may be placed. The thickness of the bituminous wearing surface layer constructed with polymer modified liquid asphalt shall not exceed 2 inches (50 mm).

The layer immediately below the SMA wearing surface shall consist of a non-polymer Section 423 (SMA) binder layer. Any additional mainline bituminous plant mix layers, beneath the aforementioned SMA mixes, that may be required to meet structural requirements shall consist of Section 423 (SMA) or Section 424 ESAL Range E mixes. Also, if the project is a new construction project or

lane addition project wherein pavement edge drains are being recommended, Section 327E, Permeable Asphalt Treated Base (PATB), shall also be utilized as one of the layers underlying the SMA mixes. If PATB is used as part of the pavement structure, the desired placement thickness is 4 inches (100 mm).

ESAL Designation – Uniformity of Plant Mixes
For acceleration/deceleration lanes, ramps and crossovers consideration should be given to specifying the same ESAL Range plant mix as that specified for the outside and/or inside shoulders to which they are adjacent when use of this plant mix is not considered detrimental to the overall design and function and it is also determined to be advantageous to the department as a result of (1) cost savings, (2) traffic handling safety, or (3) construction practices or procedures.

3. BITUMINOUS PLANT MIX FOR SHOULDERS

Depending upon the project, bituminous plant mix layers placed on the shoulders may consist of Section 423 (SMA) mixes, Section 424 mixes, or a combination of Section 423 (SMA) and Section 424 mixes.

In general, for those projects utilizing Section 424 mixes, the bituminous plant mix layers placed on the shoulders will have the same ESAL Range designation as that required for the mainline travelway, except for ESAL Range E mixes. On projects that fall in this category, the bituminous plant mix layers required for narrow width shoulders (usually inside shoulders) shall have the same ESAL Range designation as that of the mainline travelway. For the outside shoulders (usually placed as a separate pass) on such projects, the bituminous plant mix layers that are required shall be designated as ESAL Range C/D.

For those projects utilizing SMA mixes on the mainline travelway, the same SMA mixes shall be used on narrow width shoulders on the project. The bituminous plant mix layers for the outside shoulders (usually placed as a separate pass) on such projects shall consist of Section 424 mixes and the designated ESAL Range for the Section 424 mixes shall be ESAL Range C/D.

Simultaneous placement of the inside lane and narrow width inside shoulder shall be encouraged in order to reduce traffic control and traffic flow disruption. For projects that require a small amount of shoulder paving, it will be acceptable for the shoulder plant mix to have the same ESAL Range and/or mix designation (423, 424) as that of the mainline travelway.

If a shoulder is to be used as a travel lane during construction operations, the shoulder plant mix shall have the same ESAL Range designation as that of the mainline travelway with the exception of Section 423 (SMA). Section 423 (SMA) will not be used on the shoulder to facilitate traffic handling during construction operations.

Also, on widening/lane addition projects wherein traffic is shifted onto the shoulders to facilitate construction, carbonate stone restrictions shall apply to the bituminous plant mix wearing layer placed on the shoulders if it is anticipated that traffic will be utilizing the shoulders for a period of six months or longer. This requirement shall be handled by a plan note.

4. **BITUMINOUS PLANT MIX FOR RAMPS**

In general, if Section 420 (OGFC) is approved for the mainline travelway, it shall also be used on the acceleration/deceleration lanes. Section 420 (OGFC) placed on the ramp shall not extend more than 100 feet up the ramp from the gore. Since Section 420 (OGFC) does not taper down well, a 1" deep wedge shall be removed from the underlying layer to allow tie-in of the Section 420 (OGFC) to the ramp travelway.

In general, the bituminous plant mix layers placed on the ramp travelway shall have the same ESAL Range and/or mix designation (423, 424) as that of the mainline travelway and this shall also apply to any bituminous plant mix applications that are required for the shoulders adjacent to the ramp travelway, except that Section 423 (SMA) mixes shall not be used for patching, leveling, or widening (See item No. 6 below).

5. **BITUMINOUS PLANT MIX FOR CROSSOVERS**

For those projects wherein the number of 20-year ESALs is ESAL Ranges A/B or C/D, the bituminous plant mix layers placed on crossovers shall have the same ESAL Range designation as that required for the mainline travelway.

In general, for those projects wherein the number of 20-year ESALs is ESAL Range E, the bituminous plant mix layers placed on crossovers shall be designated as ESAL Range C/D.

Section 423 (SMA) mixes are not recommended for and shall not be utilized for crossovers.

Widening pay items shall be used for paving turn-outs, crossovers, and turn lanes of less than 200 feet for crossovers.

6. **PATCHING, LEVELING AND WIDENING**

Section 423 (SMA) and Section 424T (Thin-Lift) mixes are not recommended for and shall not be used for these types of operations (pay items).

Section 424A or 424B mixes shall be utilized for patching, leveling and widening operations on projects.

Specified Placement Rates, Leveling

The placement rate for leveling shall be specified with a minimum and maximum rate of placement. The minimum placement rate for leveling shall be specified as a rate that is equivalent to one half the minimum laydown rate for the maximum aggregate size of the Section 424 mix designated.

Referenced Layer	Pay Item	Laydown Rate	Approx. Thickness
3/8" Max. Agg. Size (9.5 mm)			
Leveling	424A-, 424B-	40 lb/sy	0.36 in
		22 kg/m²	0.91 cm
1/2" Max. Agg. Size (12.5 mm)			
Leveling	424A-, 424B-	68 lb/sy	0.61 in
		38 kg/m²	1.55 cm
3/4" Max. Agg. Size (19.0 mm)			
Leveling	424A-, 424B-	82 lb/sy	0.61 in
		45 kg/m²	1.55 cm
1" Max. Agg. Size (25.0 mm)			
Leveling	424B-	125 lb/sy	1.13 in
		68 kg/m²	2.86 cm
1 1/2" Max. Agg. Size (37.5 mm)			
Leveling	424B-	165 lb/sy	1.49 in
		90 kg/m²	3.77 cm

Example:

Leveling using Pay Item 424B-287 Superpave Bituminous Concrete Upper Binder Layer, Leveling, 1/2" Maximum Aggregate Size Mix, ESAL Range E

Shall be shown on typical sections as:
424B-287 Ton Superpave Bituminous Concrete Upper Binder Layer, Leveling, 1/2" Maximum Aggregate Size Mix, ESAL Range E (68 lb/sy to XXX lb/sy)

Section 424 items, the definitive pay item designation for **Wearing Surface Patching, Wearing Surface Leveling and Wearing Surface Widening** shall be used only when the layer is the final layer subject to traffic and shall not be specified as an underlying layer.

Example:

Non-uniform Wearing Surface using Pay Item 424A-366 Superpave Bituminous Concrete Wearing Surface Layer, Leveling, 1/2" Maximum Aggregate Size Mix, ESAL Range C/D

Shall be shown on typical sections as:

424A-366 Ton Superpave Bituminous Concrete Wearing Surface Layer, Leveling, 1/2" Maximum Aggregate Size Mix, ESAL Range C/D (185 lb/sy to 220 lb/sy)

7. PROJECT APPLICATION OF MIXES

Section 420, Polymer Modified Open Graded Friction Course (OGFC) Safety Layer

Section 420 (OGFC) will always be placed on top of a bituminous wearing surface layer. Unless micro milling is specified, the placement of a Section 420 (OGFC) mix directly upon a milled surface is undesirable. The use of OGFC is considered to be for the purpose of eliminating a hazardous condition and is therefore a part of the hazard elimination system. Section 420, Polymer Modified Open Graded Friction Course shall not have a layer coefficient nor shall the layer be considered as a structural layer necessary to achieve the required design SN.

The service life of this mix typically ranges from 6 to 8 years, thus making the use of this mix a very costly investment with respect to life-cycle cost. Accordingly, the use of this mix shall be restricted to flexible pavement projects or portions thereof that have had wet weather crashes. Also, other countermeasures such as advisory signs (slippery when wet, advisory speed signs, etc.) could be used.

Wet weather crash data from the hazardous elimination system or other sources must be documented for the use of OGFC to be considered. When evaluating the crash data, possible areas to be considered are steep grades, superelevated sections, horizontal curves, and/or other geometric configurations where there is an overriding tendency for water to flow longitudinally (downgrade) on the pavement and then transversely across the pavement in a superelevated section, causing a sheet flow condition.

The Designer must submit a written request to and obtain written approval from the Chief Engineer in order to be allowed to use OGFC on a project.

Use of OGFC in this application is considered to be for the purpose of eliminating a hazardous condition. OGFC use is therefore a part of the hazard elimination system. Any use of crash data in this application shall be for the express purpose of hazard elimination and, thus, considered to be within the confidentiality provisions of 23 U.S.C. Section 409. Any OGFC use as outlined above shall be

reported to the safety programs manager of the Transportation Planning and Modal Programs Bureau.

Any exceptions to this guideline regarding the use of Section 420 (OGFC) must have written approval from the Chief Engineer.

Section 424T, Superpave Thin-Lift Bituminous Concrete Wearing Surface Layer

Application of Section 424T (Thin-Lift) will be limited to projects that already possess adequate structure, exhibit less than or equal to 1/4" of rutting and exhibit no cracking to only localized minor severity cracking. The use of a Thin-Lift is meant to extend the service life of an existing pavement but is generally not intended to increase structural capacity of a pavement.

Section 423, Stone Matrix Asphalt Wearing Surface Layer (SMA), and Binder Layer(s)

For the Section 423 (SMA), the definitive pay item designation shall include the appropriate unique number, the maximum aggregate size mix, and descriptive terminology: wearing surface, binder as appropriate and the specified placement rate.

These mixes shall be used on those projects wherein the number of 20-year ESALs is equal to or greater than 3.0×10^7. These mixes may also be used on those projects where rutting is a significant problem, such as occurs at intersections.

Note:
In consideration of permeability issues, under no circumstances is a ¾" maximum aggregate size SMA wearing layer to be shown as being specified/required for any project.

Section 424 Superpave Bituminous Concrete Wearing Surface Layer (424A), Binder Layer(s) (424B) and Base Layer(s) (424C)

For Section 424A, 424B and 424C items, the definitive pay item designation shall include the appropriate unique number, the maximum aggregate size mix, and descriptive terminology: wearing surface, upper binder, lower binder, patching, leveling, or widening, as appropriate, along with the appropriate ESAL Range designation, and the specified placement rate.

Application of Section 424A as a layer less than or equal to 110 lb/sy(60 kg/m²) as part of a Preventative Maintenance 1(PM1) as defined by the ALDOT Pavement Preservation Policy will be limited to projects that already possess

adequate structure, exhibit less than or equal to 1/4" of rutting and exhibit no cracking to only localized minor severity cracking. The use of Section 424A in a PM1 is meant to extend the service life of an existing pavement but is generally not intended to increase structural capacity of a pavement.

These mixes shall be used for all projects except those projects wherein the number of 20-year ESALs is equal to or greater than 3.0×10^7 (SMA).

Expanded ESALs

For those projects wherein the actual calculated number of ESALs is 75% or greater than the ESAL range designation and there are numerous stopping and starting movements within the project limits, it will be acceptable to specify mixes for the project corresponding to the next higher ESAL range designation.

Section 327E, Permeable Asphalt Treated Base (PATB)

This mix shall only be used in conjunction with pavement edge drains on a project by project basis as conditions warrant. As previously noted, the desired placement thickness for this mix, if used, is 4 inches (100mm).

Since there are no density requirements on Section 327E (PATB), and in consideration of the open-graded nature of the mix, it is important to have sufficient bituminous plant mix material above the PATB to support the anticipated traffic loadings.

In consideration of the above, the use of PATB shall be limited to those projects wherein the required structural number (SN) is high enough to require a minimum of six inches of bituminous plant mix material above the PATB, excluding any Section 420 (OGFC) mix.

8. SPECIFIC RECOMMENDATIONS FOR DESIGN

Optimum Ride Quality

In an effort to afford paving contractors the opportunity to achieve optimum ride quality on new construction projects, the upper lift of bituminous binder mix shall be specified, when possible, at 250 lb/sy to 300 lb/sy. When determining which rate to specify within the range of 250 lb/sy to 300 lb/sy, consideration shall be given to meeting the structural number (SN) requirements of the project, as well as to the types, application rate, and number of lifts of bituminous plant mix materials above and below the upper lift of bituminous binder mix. In other words, layers of material above and below the upper lift of bituminous binder mix can possibly be adjusted to help ensure that the upper lift of bituminous binder mix is placed at a rate that falls within the range of 250 lb/sy to 300 lb/sy while still meeting the SN requirements of the project.

To the extent practical, consideration shall be given to using an application rate of 250 lb/sy to 300 lb/sy for the upper lift of binder mix if used on resurfacing projects. When specifying a placement rate for plant mix layers on a resurfacing project, consideration shall be given to the depth of any required milling prior to resurfacing, the sequence of construction, and to the traffic handling scheme. A drop-off in excess of 2 inches is not allowed between travel lanes or between a travel lane and shoulder. Specifying a bituminous plant mix application rate in the range of 250 lb/sy to 300 lb/sy could result in the requirement of a wedge of material to prevent having a drop-off in excess of 2 inches.

Minimum Placement Rate Restriction

On individual projects wherein you can reasonably expect the fine aggregate for the hot mix asphalt to consist of material from a manufactured source, for those maximum aggregate size (3/8", 1/2", 3/4", 1", and 1 1/2") mixes having an allowable range given for the placement rate, consideration shall be given to specifying a placement rate other than the minimum provided for the range in order to help ensure that density requirements are met.

State Route Minimum Build-up

On new construction projects for State routes, the minimum bituminous asphalt thickness to be placed for the travelways, in addition to the other pavement structural layers (e. g. soil aggregate base, crushed aggregate base, improved roadbed, etc.), is 5 inches. If the required design structural number (SN) is such that the resulting total bituminous asphalt thickness is less than 5 inches, taking into account the other pavement structural layers necessary to achieve the required SN, the placement rate of the bituminous asphalt layers shall be adjusted as required in order to achieve a total bituminous asphalt thickness of 5 inches. Any necessary adjustments in the bituminous asphalt placement rates to achieve the total bituminous asphalt thickness of 5 inches shall adhere to the established placement rate range for the applicable maximum aggregate size.

An example of bituminous asphalt layering scheme to obtain the 5-inch thickness is as follows:

140 lb/sy Wearing Layer (1/2" maximum aggregate size) (Approx. 1.26")
165 lb/sy Upper Binder Layer (3/4" maximum aggregate size) (Approx. 1.49")
250 lb/sy Lower Binder Layer (1" maximum aggregate size) (Approx. 2.25")

The total bituminous asphalt thickness of 5 inches is based upon using a structural layer coefficient of 0.54 per inch of thickness for the bituminous asphalt binder and wearing layers. The 0.54 layer coefficient is to be used in lieu of the 0.44 layer coefficient previously used for Section 423 and Section 424 wearing layers and binder layers, with the 0.54 value having been determined from

flexible pavement structural experiments/studies conducted on these pavement layers in 2003 and 2006 at the National Center for Asphalt Technology (NCAT) test track facility and documented in a subsequent NCAT research report entitled "RECALIBRATION OF THE ASPHALT LAYER COEFFICIENT".

RECOMMENDED FOR APPROVAL: _____
BUREAU CHIEF

APPROVAL: _____
DEPUTY DIRECTOR, OPERATIONS

APPROVAL: _____
TRANSPORTATION DIRECTOR

12·3·2019
DATE:

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: PAVEMENT TREATMENT AND DESIGN IN RESURFACING – REHABILITATION OF ASPHALT PAVEMENTS

BUILD-UP:

Roadways that are to be resurfaced or rehabilitated should be given careful evaluation and designed so that the most cost effective treatment is used. This evaluation must consider the existing condition of the roadway to include not only the surface but the subsurface layers. All roadways should be cored to determine the structural condition of the underlying asphalt layers. Milling the existing surface should be considered when there is sufficient existing plant mix to maintain structural stability, and when one or more of the following conditions exist: (1) rutting, (2) oxidized and hardened pavement, (3) extensive surface cracking, (4) template improvement is needed. Written justification for not milling must be included in the materials report for the resurfacing project.

When milling is not desirable, sufficient amounts of leveling must be utilized to ensure a stable base material and a proper template so that compaction can be obtained on the overlying layer. Bituminous surface treatments should be considered when cracking and oxidized pavements exist. Unless otherwise directed by the Engineer, any bituminous surface treatments shown on typical section sketches in plan assemblies must be placed in the order shown on the typical section sketches. Please see Guidelines for Operation 6-8, Bituminous Surface Treatments, for guidance on the use of surface treatments.

When determining the amount of additional structural overlay to be utilized, consideration should be given to the original design build-up, the results from the falling weight deflectometer (FWD) analysis (when used) and to any significant loss of structural capacity as evidenced by the cores. When it is not economically feasible to provide the total structural design that is apparently needed, consideration should be

given to providing sufficient build-up for current traffic, with plans for future overlays as traffic increases. Managing our pavements and using available funds to achieve optimum life in our pavements should always be considered in each pavement design.

SHOULDERS:

As soon as practical after resurfacing, any unpaved shoulder areas should be brought up to the grade of the newly placed overlay by flushing the shoulders with a suitable borrow material or other suitable material. The material that is utilized for this purpose should have suitable binder or cohesive properties to keep the material in place and to help prevent it from being washed away during rainfall events. Vehicles, such as 18-wheelers pulling off onto the material, can also cause the material to be lost if it does not have suitable binder or cohesive properties.

Simply specifying an A-4 or better material to be placed on the shoulders will not ensure that the material will not be washed away or otherwise lost. Specifying an A-4 or better material to be placed on the shoulders could result in a sandy material with no binder or cohesive properties being used to flush the shoulders, which is undesirable.

Preferably, some type of soil aggregate base course material, crushed aggregate base course material, crusher run material, or other materials with similar binder or cohesive properties should be used to flush the shoulders adjacent to an overlay, when required. Materials reports that are submitted for resurfacing projects should specify the material that is to be used to flush the shoulders when this operation is required.

Recommended for Approval: _____
Bureau Chief/Division Engineer

Approval: _____
Chief Engineer

Approval: _____ 12/05/07
Transportation Director Date

STATE OF ALABAMA

DEPARTMENT OF TRANSPORTATION

GUIDELINES FOR OPERATION

SUBJECT: **SMOOTHNESS REQUIREMENTS FOR ASPHALT PAVEMENTS.**

Smoothness requirements for contract price adjustments shall be included in contracts meeting the following criteria:

- New construction projects,
- Resurfacing projects where the final two layers are specified at uniform thicknesses.

Exceptions to the above may include the following:

- Projects one mile or less in length,
- Bridge projects with less than a ½ mile of roadway on each side of the bridge, and
- Projects with roads exhibiting poor geometric characteristics (e.g. numerous horizontal and/or vertical curves, large degrees of curvature, or numerous intersections).

Smoothness requirements shall be included in contracts for resurfacing projects greater than one mile in length that meet the above criteria.

Section 410 of the Standard Specifications gives the asphalt pavement smoothness requirements and method of data collection utilizing the inertial profiler.

RECOMMENDED FOR APPROVAL:

Scott W. George, P.E.
State Materials & Tests Engineer

Kyle M. Leverette. P.E.
State Construction Engineer

APROVAL:

George H. Conner, P.E.
Deputy Director Operations

John Cooper
Transportation Director

Date: MAY 6, 2021

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: REQUIRED INFORMATION FOR RECYCLED ASPHALT PAVEMENT (RAP) MIX

To assist the Contractor, the type of aggregate and the Los Angeles Abrasion or the Duval Wear Value, whichever is appropriate, will be furnished for the coarse aggregate used in the layer of bituminous plant mix to be milled. In addition, data concerning the original job mix formula of the material to be milled, including gradation, crushed particle count of the aggregate, the percent of asphalt, etc., will be furnished. Job mix formula and aggregate information is available from the Bituminous and Aggregate Laboratories, respectively, of the Bureau of Materials and Tests.

All of the above information should be presented on the proper plan sheets or notes of the plan assembly for the project.

Any additional information that may be of assistance to the Department or the Contractor will be given consideration.

RECOMMENDED FOR APPROVAL: _____Larry Lockett_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____7/7/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: USE OF NON-SKID AGGREGATES FOR STRIP PATCHING

The use of non-skid aggregates (slag, crushed quartz river gravel, granite, etc.) for patching and routine maintenance will be restricted to high traffic volume interstate and primary roadways.

RECOMMENDED FOR APPROVAL: Larry Lockett
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: Tom Espy, Jr.
CHIEF ENGINEER

APPROVAL: Royce G. King 5/20/88
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: USE OF FILTER BLANKET BENEATH RIPRAP

A filter blanket either aggregate or fabric should be used under all riprap installations used for permanent erosion control. For example, on projects in which pay item 610A is established for permanent erosion control, an equal quantity of item 610D filter blanket should also be established. Likewise, when pay item 610C is used, a quantity of item 610D filter blanket sufficient to underlie all riprapped areas should be used.

Guidelines according to the type filter blanket should be those outlined in Section 610 of the Standard Specifications.

RECOMMENDED FOR APPROVAL: _____Larry Lockett_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE

STATE OF ALABAMA

HIGHWAY DEPARTMENT

GUIDELINES FOR OPERATION

SUBJECT: PERFORMANCE OF ROADBED PROCESSING

Roadbed Processing will be eliminated on Grade and Drain Projects. It will be included in the Base and Pave portion.

RECOMMENDED FOR APPROVAL: _____Wm. J. Hartzog_____
BUREAU CHIEF/DIVISION ENGINEER

APPROVAL: _____Tom Espy, Jr._____
CHIEF ENGINEER

APPROVAL: _____Royce G. King_____ _____5/20/88_____
HIGHWAY DIRECTOR DATE