MDOT Use Only
Checked _____
Loaded _____
Keyed _____

08 -

SM No. CSTP0039020531

PROPOSAL AND CONTRACT DOCUMENTS

FOR THE CONSTRUCTION OF

08
Mill & Overlay approximately 12 miles of SR 18 from the beginning of the 4-lane South of Raymond to I-20, known as Federal Aid Project No. STP-0039-02(053) / 107631301 in Hinds County.

Project Completion: 201 Working Days

(STATE DELEGATED)

NOTICE

BIDDERS MUST COMPLETE AN ONLINE REQUEST FOR PERMISSION TO BID THIS PROJECT.

Electronic addendum updates will be posted on www.gomdot.com

SECTION 900

OF THE CURRENT 2017 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION

JACKSON, MISSISSIPPI

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
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Progress Schedule

(REVISIONS TO THE ABOVE WILL BE INDICATED ON THE SECOND SHEET
OF SECTION 905 AS ADDENDA)

01/30/2019 02:50 PM

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 901 - ADVERTISEMENT

Electronic bids will be received by the Mississippi Transportation Commission at 10:00 o'clock A.M., Tuesday, February 26, 2019, from the Bid Express Service and shorty thereafter publicly read on the Sixth Floor For:

Mill & Overlay approximately 12 miles of SR 18 from the beginning of the 4-lane South of Raymond to I-20, known as Federal Aid Project No. STP-0039-02(053) / 107631301 in Hinds County.

The attention of bidders is directed to the Contract Provisions governing selection and employment of labor. Minimum wage rates have been predetermined by the Secretary of Labor and are subject to Public Law 87-581, Work Hours Act of 1962, as set forth in the Contract Provisions.

The Mississippi Department of Transportation hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, sex, age, disability, religion or national origin in consideration for an award.

The award of this contract will be contingent upon the Contractor satisfying the DBE requirements.

The specifications are on file in the offices of the Mississippi Department of Transportation.

Contractors may request permission to bid online at http://shopmdot.ms.gov at no cost. Upon approval, Contractors shall be eligible to submit a bid using Bid Express at http://bidx.com. Specimen proposals may be viewed and downloaded online at no cost at http://mdot.ms.gov or purchased online at http://shopmdot.ms.gov at a cost of Ten Dollars ($10.00) per proposal plus a small convenience fee. Cash or checks will not be accepted as payment.

Bid bond, signed or countersigned by a Mississippi Agent or Qualified Nonresident Agent, with Power of Attorney attached, a Cashier's check or Certified Check for five (5%) percent of bid, payable to STATE OF MISSISSIPPI, must accompany each proposal.

The attention of bidders is directed to the provisions of Subsection 102.07 pertaining to irregular proposals and rejection of bids.

MELINDA L. MCGRATH
EXECUTIVE DIRECTOR

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1 **CODE: (IS)**

DATE: 03/01/2017

SUBJECT: Governing Specifications

The current (2017) Edition of the Standard Specifications for Road and Bridge Construction adopted by the Mississippi Transportation Commission is made a part hereof fully and completely as if it were attached hereto, except where superseded by special provisions, or amended by revisions of the Specifications contained within this proposal. Copies of the specification book may be purchased from the MDOT Construction Division, or online at shopmdot/default.aspx?StoreIndex=1.

A reference in any contract document to controlling requirements in another portion of the contract documents shall be understood to apply equally to any revision or amendment thereof included in the contract.

In the event the plans or proposal contain references to the 2004 Edition of the Standard Specifications for Road and Bridge Construction, it is to be understood that such references shall mean the comparable provisions of the 2017 Edition of the Standard Specifications.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 2 **CODE: (IS)**

DATE: 03/01/2017

SUBJECT: Status of Right-of-Way

Although it is desirable to have acquired all rights-of-way and completed all railroad agreements, utility adjustments and work to be performed by others prior to receiving bids, sometimes it is not considered to be in the public interest to wait until each and every such clearance has been obtained. The bidder is hereby advised of possible unacquired rights-of-way, relocates, railroad agreements and utilities adjustments which have not been completed.

The status of right-of-way acquisition, utility adjustments, encroachments, potentially contaminated sites, railroad facilities, improvements, and asbestos contamination are set forth in the following attachments.

In the event right of entry is not available to ALL parcels of right-of-way and/or all work that is to be accomplished by others on the date set forth in the contract for the Notice to Proceed is not complete, the Department will issue a restricted Notice to Proceed.

STATUS OF RIGHT-OF-WAY

STP-0039-02(053)

107631-301000

Hinds County

All rights of way and legal rights of entry have been acquired **except:**

None.

ASBESTOS CONTAMINATION STATUS OF BUILDINGS
TO BE REMOVED BY THE CONTRACTOR
STP-0039-02(053)
107631-301000
Hinds County
May 8, 2018

Reference is made to notices to bidders entitled "Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP)" and "Removal of Obstructions".

The following pertinent information is furnished concerning asbestos containing materials (ACMs), if any, found in buildings to be removed by the Contractor.

There is no Right of Way required for this project. There are no buildings to be removed by the contractor.

STATUS OF POTENTIALLY CONTAMINATED SITES
STP-0039-02(053)
107631-301000
Hinds County
May 8, 2018

THERE IS NO RIGHT OF WAY REQUIRED FOR THIS PROJECT. NO INITIAL SITE ASSESSMENT WILL BE PERFORMED. IF CONTAMINATION ON EXISTING RIGHT OF WAY IS DISCOVERED, IT WILL BE HANDLED BY THE DEPARTMENT.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

Inter-Departmental Memorandum

TO: Trudi Loflin
ROW Division

DATE: July 5, 2018

FROM: Christopher M. Nail CMN
District Five

SUBJECT OR PROJECT NO: STP-0039-02(053) / 107631-301000
ROW Certification Documents

INFORMATION COPY TO:

COUNTY: Hinds

Project File

District Status Report

1. STATUS OF RIGHT OF WAY: All work to be done within existing ROW.
2. RIGHT OF WAY CLEARANCE: All areas of the project appear to be free of encroachments.
3. STATUS OF AFFECTED RAILROAD OPERATING FACILITIES: No railroads are affected.
4. STATUS OF REQUIRED UTILITY RELOCATIONS: It appears that no utility conflicts are present. However, the contractor should contact MS 811 prior to performing any subsurface activities within the project limits.
5. STATUS OF CONSTRUCTION AGREEMENT: None required.

CMN:cmn

Improvements to be included in Notice to Bidders to be removed by the Construction Contractor
FMS Construction Project No: 107631-301000
External ROW No: STP-0039-02(053)

Parcel No:
Station No:
Property Owner:
Description/Pictures:

NA

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3 **CODE: (SP)**

DATE: 01/17/2017

SUBJECT: Final Clean-Up

Immediately prior to final inspection for release of maintenance, the Contractor shall pick up, load, transport and properly dispose of all litter from the entire highway right-of-way that is within the termini of the project.

Litter shall include, but not be limited to, solid wastes such a glass, paper products, tires, wood products, metal, synthetic materials and other miscellaneous debris.

Litter removal is considered incidental to other items of work and will not be measured for separate payment.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO NOTICE TO BIDDERS NO. 7

DATE: 01/17/2017

The goal is 6 percent for the Disadvantaged Business Enterprise. The low bidder is required to submit Form OCR-481 for all DBEs. Bidders are advised to check the bid tabulation link for this project on the MDOT website at:

http://sp.gomdot.com/Contract%20Administration/BidSystems/Pages/letting%20calendar.aspx

Bid tabulations are usually posted by 3:00 pm on Letting Day.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 7 **CODE: (IS)**

DATE: 03/01/2017

SUBJECT: Disadvantaged Business Enterprises In Federal-Aid Highway Construction

This contract is subject to the "Moving Ahead for Progress in the 21st Century Act (MAP-21)" and applicable requirements of "Part 26, Title 49, Code of Federal Regulations". Portions of the Act are set forth in this Notice as applicable to compliance by the Contractor and all of the Act, and the MDOT DBE Program, is incorporated by reference herein.

The Department has developed a Disadvantaged Business Enterprise Program that is applicable to this contract and is made a part thereof by reference.

Copies of the program may be obtained from:

Office of Civil Rights
Mississippi Department of Transportation
P. O. Box 1850
Jackson, Mississippi 39215-1850

POLICY

It is the policy of the Mississippi Department of Transportation to provide a level playing field, to foster equal opportunity in all federally assisted contracts, to improve the flexibility of the DBE Program, to reduce the burdens on small businesses, and to achieve that amount of participation that would be obtained in a non-discriminatory market place. In doing so, it is the policy of MDOT that there will be no discrimination in the award and performance of federally assisted contracts on the basis of race, color, sex, age, religion, national origin, or any handicap.

ASSURANCES THAT CONTRACTORS MUST TAKE

MDOT will require that each contract which MDOT signs with a sub-recipient or a Contractor, and each subcontract the Prime Contractor signs with a Subcontractor, includes the following assurances:

"The Contractor, sub-recipient or Subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR 26 in the award and administration of federally assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as MDOT deems appropriate."

DEFINITIONS

For purposes of this provision the following definitions will apply:

"Disadvantaged Business" means a small business concern: (a) which is at least 51 percent owned by one or more socially and economically disadvantaged individual(s) or in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more socially and economically disadvantaged individual(s); and (b) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individual(s) who own it. It is important to note that the business owners themselves must control the operations of the business. Absentee ownership or title ownership by an individual who does not take an active role in controlling the business is not consistent with eligibility as a DBE under CFR 49 Part 26.71.

CONTRACTOR'S OBLIGATION

The Contractor and all Subcontractors shall take all necessary and reasonable steps to ensure that DBE firms can compete for and participate in the performance of a portion of the work in this contract and shall not discriminate on the basis of race, color, national origin, religion or sex. Failure on the part of the Contractor to carry out the DBE requirements of this contract constitutes a breach of contract and after proper notification the Department may terminate the contract or take other appropriate action as determined by the Department.

When a contract requires a zero percent (0%) DBE goal, the Contractor still has the responsibility to take all necessary and reasonable steps to ensure that DBE firms can compete for and participate in the performance of the work in the contract. In this case, all work performed by a certified DBE firm is considered to be a "race neutral" measure and the Department will receive DBE credit towards the overall State goals when the DBE firm is paid for their work. If the Prime Contractor is a certified DBE firm, the Department can receive DBE credit only for the work performed by the Prime Contractor's work force or any work subcontracted to another DBE firm. Work performance by a non-DBE Subcontractor is not eligible for DBE credit.

CONTRACT GOAL

The goal for participation by DBEs is established for this contract in the attached Supplement. The Contractor shall exercise all necessary and reasonable steps to ensure that participation is equal to or exceeds the contract goal.

If the percentage of the contract that is proposed for DBEs is 1% or greater, the Contractor shall agree to meet or exceed the contract goal on the last bid sheet of the proposal.

The apparent lowest responsive bidder shall submit to the Office of Civil Rights Form OCR-481, signed by the Prime Contractor and the DBE Subcontractors, no later than the 3rd business day after opening of the bids.

Form OCR-481 is available on the MDOT website at GoMDOT.com, then Divisions, Civil Rights, Forms, DBE, MDOT Projects, or by calling 601-359-7466.

The OCR-481 Form must contain the following information:

The name and address of each certified DBE Contractor / Supplier;

The Reference Number, percent of work and the dollar amount of each item. If a portion of an item is subcontracted, a breakdown of that item including quantities and unit price must be attached, detailing what part of the item the DBE firm is to perform and who will perform the remainder of the item.

If the DBE Commitment shown on the last bid sheet of the proposal, does not equal or exceed the contract goal, the bidder must submit, to MDOT Contract Administration Division prior to bid opening, information to satisfy the Department that adequate good faith efforts have been made to meet the contract goal.

Failure of the lowest bidder to furnish acceptable proof of good faith efforts, submitted to MDOT Contract Administration Division prior to bid opening, shall be just cause for rejection of the proposal. Award may then be made to the next lowest responsive bidder or the work may be re-advertised.

The following factors are illustrative of matters the Department will consider in judging whether or not the bidder has made adequate good faith effort to satisfy the contract goal.

(1) Whether the bidder attended the pre-bid meeting that was scheduled by the Department to inform DBEs of subcontracting opportunities;

(2) Whether the bidder advertised in general circulation, trade association, and minority-focus media concerning the subcontracting opportunities;

(3) Whether the bidder provided written notice to a reasonable number of specific DBEs that their interest in the contract is being solicited;

(4) Whether the bidder followed up initial solicitations of interest by contacting DBEs to determine with certainty whether they were interested;

(5) Whether the bidder selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goal;

(6) Whether the bidder provided interested DBEs with adequate information about the plans, specifications and requirements of the contract;

(7) Whether the bidder negotiated in good faith with interested DBEs and did not reject them as unqualified without sound reasons based on a thorough investigation of their capabilities; and

(8) Whether the bidder made efforts to assist interested DBEs in obtaining any required bonding or insurance.

(9) Whether the bidder has written notification to certified DBE Contractors soliciting subcontracting for items of work in the contract.

(10) Whether the bidder has a statement of why an agreement was not reached.

The bidder's execution of the signature portion of the proposal shall constitute execution of the following assurance:

> The bidder hereby gives assurance pursuant to the applicable requirements of "Moving Ahead for Progress in the 21st Century Act (MAP-21)" and applicable requirements of "Part 26, Title 49, Code of Federal Regulations" that the bidder has made a good faith effort to meet the contract goal for DBE participation for which this proposal is submitted.

DIRECTORY

A list of "Certified DBE Contractors" which have been certified as such by the Mississippi Department of Transportation and other Unified Certification Partners (UPC) can be found on the Mississippi Department of Transportation website at www.gomdot.com. The list is in the top left corner of the current Letting Calendar under Contracts & Letting. The DBE firm must be certified at the time the project is let and approved by MDOT to count towards meeting the DBE goal.

REPLACEMENT

If a DBE Subcontractor cannot perform satisfactorily, and this causes the OCR-481 commitment to fall below the contract goal, the Contractor shall take all necessary reasonable steps to replace the DBE with another certified DBE Subcontractor or submit information to satisfy the Mississippi Department of Transportation that adequate good faith efforts have been made to replace the DBE. The replacement DBE must be a DBE who was on the Department's list of "Certified DBE Contractors" when the job was let, and who is still active. All DBE replacements must be approved by the Department.

Under no circumstances shall the Prime or any Subcontractor perform the DBE's work (as shown on the OCR-481) without prior written approval from the Department. See "Sanctions" at the end of this document for penalties for performing DBE's work.

When a Contractor proposes to substitute/replace/terminate a DBE that was originally named on the OCR-481, the Contractor must obtain a release, in writing, from the named DBE explaining why the DBE Subcontractor cannot perform the work. A copy of the original DBE's release must be attached to the Contractor's written request to substitute/replace/terminate along with appropriate Subcontract Forms for the substitute/replacement/terminated Subcontractor, all of which must be submitted to the DBE Coordinator and approved, in advance, by MDOT.

GOOD FAITH EFFORTS

To demonstrate good faith efforts to replace any DBE that is unable to perform successfully, the Contractor must document steps taken to subcontract with another certified DBE Contractor. Such documentation shall include no less than the following:

(1) Proof of written notification to certified DBE Contractors by certified mail that their interest is solicited in subcontracting the work defaulted by the previous DBE or in subcontracting other items of work in the contract.

(2) If the Prime Contractor is a certified DBE firm, only the value of the work actually performed by the DBE Prime can be counted towards the project goal, along with any work subcontracted to a certified DBE firm.

(3) If the Contractor is not a DBE, the work subcontracted to a certified DBE Contractor will be counted toward the goal.

(4) The Contractor may count toward the goal a portion of the total dollar value of a contract with a joint venture eligible under the standards of this provision equal to the percentage of the DBE partner in the joint venture.

(5) Expenditures to DBEs that perform a commercially useful function may be counted toward the goal. A business is considered to perform a commercially useful function when it is responsible for the execution of a distinct element of the work and carries out its responsibilities by actually performing, managing, and supervising the work involved.

(6) The Contractor may count 100% of the expenditures for materials and supplies obtained from certified DBE suppliers and manufacturers that produce goods from raw materials or substantially alters them for resale provided the suppliers and manufacturers assume the actual and contractual responsibility for the provision of the materials and supplies. The Contractor may count sixty percent (60%) of the expenditures to suppliers that are not manufacturers, provided the supplier performs a commercially useful function in the supply process. Within 30 days after receipt of the materials, the Contractor shall furnish to the DBE Coordinator invoices from the certified supplier to verify the DBE goal.

(7) Any work that a certified DBE firm subcontracts or sub-subcontracts to a non-DBE firm will not count towards the DBE goal.

(8) Only the dollars actually paid to the DBE firm may be counted towards the DBE goal.

Failure of the Contractor to demonstrate good faith efforts to replace a DBE Subcontractor that cannot perform as intended with another DBE Subcontractor, when required, shall be a breach of contract and may be just cause to be disqualified from further bidding for a period of up to 12 months after notification by certified mail.

PRE-BID MEETING

A pre-bid meeting will be held in Amphitheater 1 & 2 of the Hilton Jackson located at I-55 and County Line Road, Jackson, Mississippi at 2:00 P.M. on the day preceding the date of the bid opening.

This meeting is to inform DBE firms of subcontracting and material supply opportunities. Attendance at this meeting is considered of prime importance in demonstrating good faith effort to meet the contract goal.

PARTICIPATION / DBE CREDIT

Participation shall be counted toward meeting the goal in this contract as follows:

(1) If the Prime Contractor is a certified DBE firm, only the value of the work actually performed by the DBE Prime can be counted towards the project goal, along with any work subcontracted to a certified DBE firm.

(2) If the Contractor is not a DBE, the work subcontracted to a certified DBE Contractor will be counted toward the goal.

(3) The Contractor may count toward the goal a portion of the total dollar value of a contract with a joint venture eligible under the standards of this provision equal to the percentage of the DBE partner in the joint venture.

(4) Expenditures to DBEs that perform a commercially useful function may be counted toward the goal. A business is considered to perform a commercially useful function when it is responsible for the execution of a distinct element of the work and carries out its responsibilities by actually performing, managing, and supervising the work involved.

(5) The Contractor may count 100% of the expenditures for materials and supplies obtained from certified DBE suppliers and manufacturers that produce goods from raw materials or substantially alters them for resale provided the suppliers and manufacturers assume the actual and contractual responsibility for the provision of the materials and supplies. The Contractor may count sixty percent (60%) of the expenditures to suppliers that are not manufacturers, provided the supplier performs a commercially useful function in the supply process. Within 30 days after receipt of the materials, the Contractor shall furnish to the DBE Coordinator invoices from the certified supplier to verify the DBE goal.

(6) Any work that a certified DBE firm subcontracts or sub-subcontracts to a non-DBE firm will not count towards the DBE goal.

(7) Only the dollars actually paid to the DBE firm may be counted towards the DBE goal. The participation of a DBE Firm cannot be counted towards the Prime Contractor's DBE goal until the amount being counted towards the goal has been paid to the DBE.

AWARD

Award of this contract to the low bidder will be contingent upon the following conditions:

(1) Concurrence from Federal Highway Administration, when applicable.

(2) Bidder must submit to the Office of Civil Rights for approval, Form OCR-481 (DBE Commitment) no later than the 3rd business day after opening of the bids to satisfy the Department and that adequate good faith efforts have been made to meet the contract goal. For answers to questions regarding Form OCR-481, contact the MDOT Office of Civil Rights at (601) 359-7466.

(3) Bidder must include OCR-485 information with their bid proposal listing all firms that submitted quotes for material supplies or items to be subcontracted. OCR-485 information

must be included with the bid proposal. If the OCR-485 information is not included as part of bid proposal, your bid will be deemed irregular.

Prior to the start of any work, the bidder must notify the Project Engineer, in writing, of the name of the designated "DBE Liaison Officer" for this project. This notification must be posted on the bulletin board at the project site.

DEFAULT

If the contract goal established by MDOT in this proposal is 1% or greater, it must be met to fulfill the terms of the contract. The Contractor may list DBE Subcontractors and items that exceed MDOT's contract goal, but should unforeseen problems arise that would prevent a DBE from completing its total commitment percentage, the Contractor will meet the terms of the contract as long as it meets or exceeds MDOT's Contract Goal. For additional information, refer to "Replacement" section of this Notice.

DBE REPORTS

(1) OCR-481: Refer to "CONTRACT GOAL" section of this Notice to Bidders for information regarding this form.

(2) OCR-482: OCR-482: At the conclusion of the project, before the final estimate is paid and the project is closed out, the Prime Contractor will submit to the Project Engineer for verification of quantities and further handling Form OCR-482 whereby the Contractor certifies to the amounts of payments made to all Contractors / Suppliers over the life of the contract. The Project Engineer shall submit the completed Form OCR-482 to the DBE Coordinator (Office of Civil Rights). Final acceptance of the project is dependent upon Contract Administration Division's receipt of completed Form OCR-482 which they will receive from the Office of Civil Rights.

(3) OCR-483: The Project Engineer/Inspector will complete Form OCR-483, the Commercially Useful Function (CUF) Performance Report, in accordance with MDOT S.O.P. No. OCR-03-09-01-483. Evaluations reported on this form are used to determine whether or not the DBE firm is performing a CUF. The Prime Contractor should take corrective action when the report contains any negative evaluations. DBE credit may be disallowed and/or other sanctions imposed if it is determined the DBE firm is not performing a CUF. This form should also be completed and returned to the DBE Coordinator (Office of Civil Rights).

(4) OCR-484: Each month, the Prime Contractor will submit to the Project Engineer OCR-484 that certifies payments to all Subcontractors and shows all firms even if the Prime Contractor has paid no monies to the firm during that estimate period (negative report). The Project Engineer will attach the form to the monthly estimate before forwarding to the Contract Administration Division for further processing. Failure of the Contractor to submit the OCR-484 will result in the estimate not being processed and paid.

(5) OCR-485: ALL BIDDERS must submit signed form with bid proposal of all firms that submitted quotes for material supplies or items to be subcontracted. If the OCR-485 information is not included as part of bid proposal, the bid will be deemed irregular.

(6) OCR-487: Only used by Prime Contractors that are certified DBE firms. This form is used in determining the exact percentage of DBE credit for the specified project. It should be returned to MDOT with the OCR-481 form, or can also be returned with the Permission to Subcontract Forms (CAD-720, CAD-725 and CAD-521).

DBE Forms, can be obtained from the Office of Civil Rights Division, MDOT Administration Building, 401 North West Street, Jackson, MS, or at www.gomdot.com under Divisions, Civil Rights, and Forms.

SANCTIONS

The Department has the option to enforce any of the following penalties for failure of the Prime Contractor to fulfill the DBE goal as stated on the OCR-481 form or any violations of the DBE program guidelines:

(1) Disallow credit towards the DBE goal

(2) Withhold progress estimate payments

(3) Deduct from the final estimate or recover an amount equal to the unmet portion of the DBE goal which may include additional monetary penalties as outlined below based on the number of offenses and the severity of the violation as determined by MDOT.

1st Offense	10% of unmet portion of goal	or	$5,000 lump sum payment	or	Both
2nd Offense	20% of unmet portion of goal	or	$10,000 lump sum payment	or	Both
3rd Offense	40% of unmet portion of goal	or	$20,000 lump sum payment	or	$20,000 lump sum payment and debarment

(4) Debar the Contractor involved from bidding on MDOT federally funded projects.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 9 **CODE: (IS)**

DATE: 03/01/2017

SUBJECT: Federal Bridge Formula

Bidders are hereby advised that the latest revision of Federal Highway Administration Publication No. FHWA-HOP-06-105, **BRIDGE FORMULA WEIGHTS**, dated August 2006, is made a part of this contract when applicable.

Prior to the preconstruction conference, the Contractor shall advise the Engineer, in writing, what materials, if any, will be delivered to the jobsite via Interstate route(s).

Copies of the **BRIDGE FORMULA WEIGHTS** publication may be obtained by contacting:

Federal Highway Administration
400 7th Street, SW
Washington, DC 20590
(202) 366-2212

or

http://www.ops.fhwa.dot.gov/Freight/publications/brdg_frm_wghts/bridge_formula_all_rev.pdf

An on line **BRIDGE FORMULA WEIGHTS CALCULATOR** is available at

http://ops.fhwa.dot.gov/freight/sw/brdgcalc/calc_page.htm

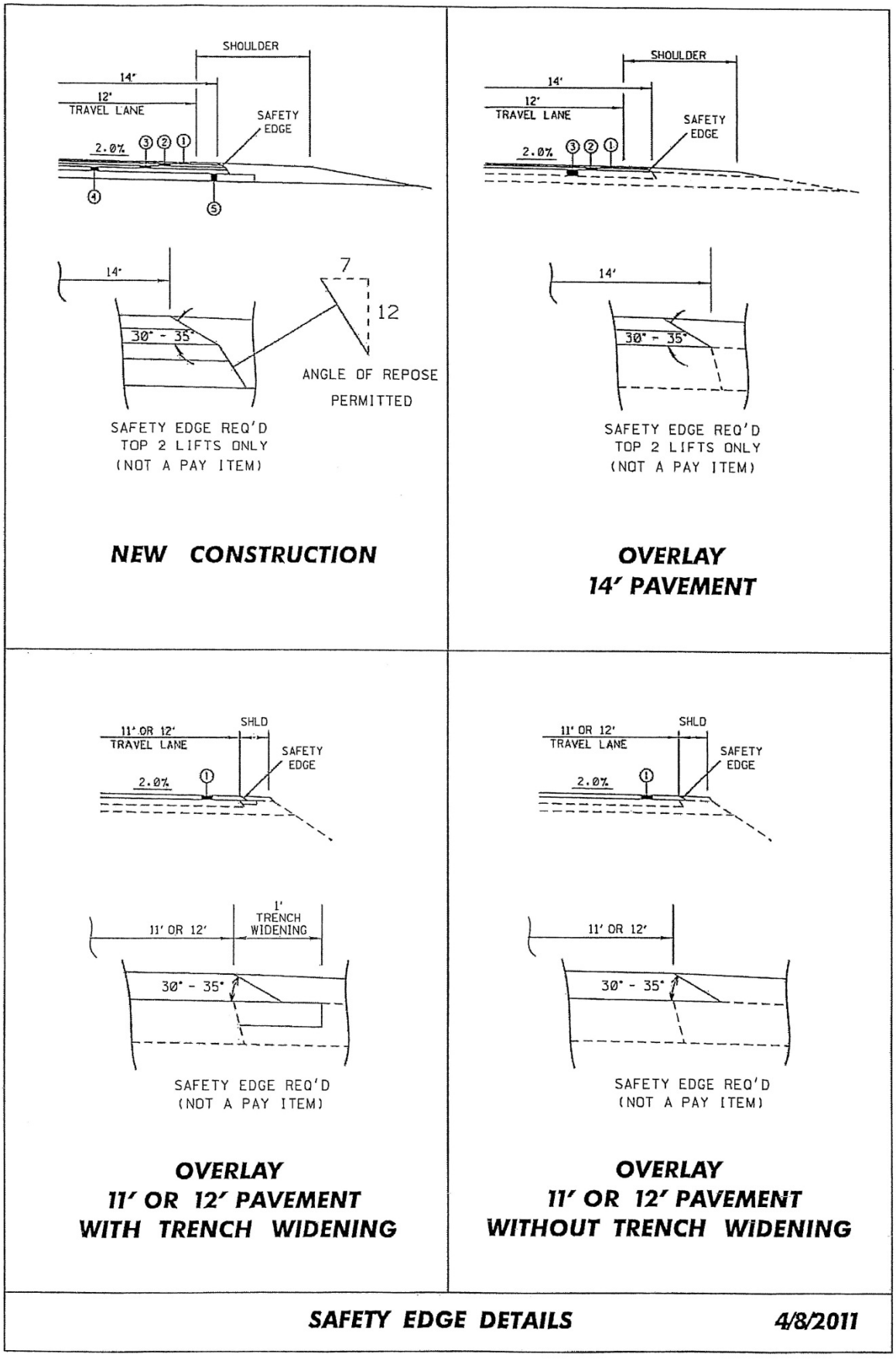
MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 13 **CODE: (IS)**

DATE: 03/01/2017

SUBJECT: Safety Edge

Bidders are hereby advised that the Shoulder Wedge (Safety Edge) specified in Section 401, Asphalt Pavements, shall only apply to the top two (2) lifts of asphalt. Open Graded Friction Courses (OGFC) are not to be considered a lift as it pertains to safety edge. Attached is a drawing showing the safety edge. Note that the shoulder dimensions in the bottom two drawings will be less than three feet (3').


SHOULDER
14'
12'
TRAVEL LANE
SAFETY EDGE
2.0%
③ ② ①
④
⑤
14'
7
12
30° - 35°
ANGLE OF REPOSE PERMITTED
SAFETY EDGE REQ'D TOP 2 LIFTS ONLY (NOT A PAY ITEM)
NEW CONSTRUCTION
SHOULDER
14'
12'
TRAVEL LANE
SAFETY EDGE
2.0%
③ ② ①
14'
30° - 35°
SAFETY EDGE REQ'D TOP 2 LIFTS ONLY (NOT A PAY ITEM)
OVERLAY 14' PAVEMENT
11' OR 12'
TRAVEL LANE
SHLD
SAFETY EDGE
2.0%
①
1' TRENCH WIDENING
11' OR 12'
30° - 35°
SAFETY EDGE REQ'D (NOT A PAY ITEM)
OVERLAY 11' OR 12' PAVEMENT WITH TRENCH WIDENING
11' OR 12'
TRAVEL LANE
SHLD
SAFETY EDGE
2.0%
①
11' OR 12'
30° - 35°
SAFETY EDGE REQ'D (NOT A PAY ITEM)
OVERLAY 11' OR 12' PAVEMENT WITHOUT TRENCH WIDENING
SAFETY EDGE DETAILS
4/8/2011

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 113 **CODE: (SP)**

DATE: 04/18/2017

SUBJECT: Tack Coat

Bidders are advised that in addition to the products listed on the Department's APL as referenced in Subsection 401.03.1.2 on page 256, the Contractor may use one of the following as a tack coat.

- CSS-1
- CSS-1h
- SS-1
- SS-1h

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 296 **CODE: (SP)**

DATE: 07/25/2017

SUBJECT: Reduced Speed Limit Signs

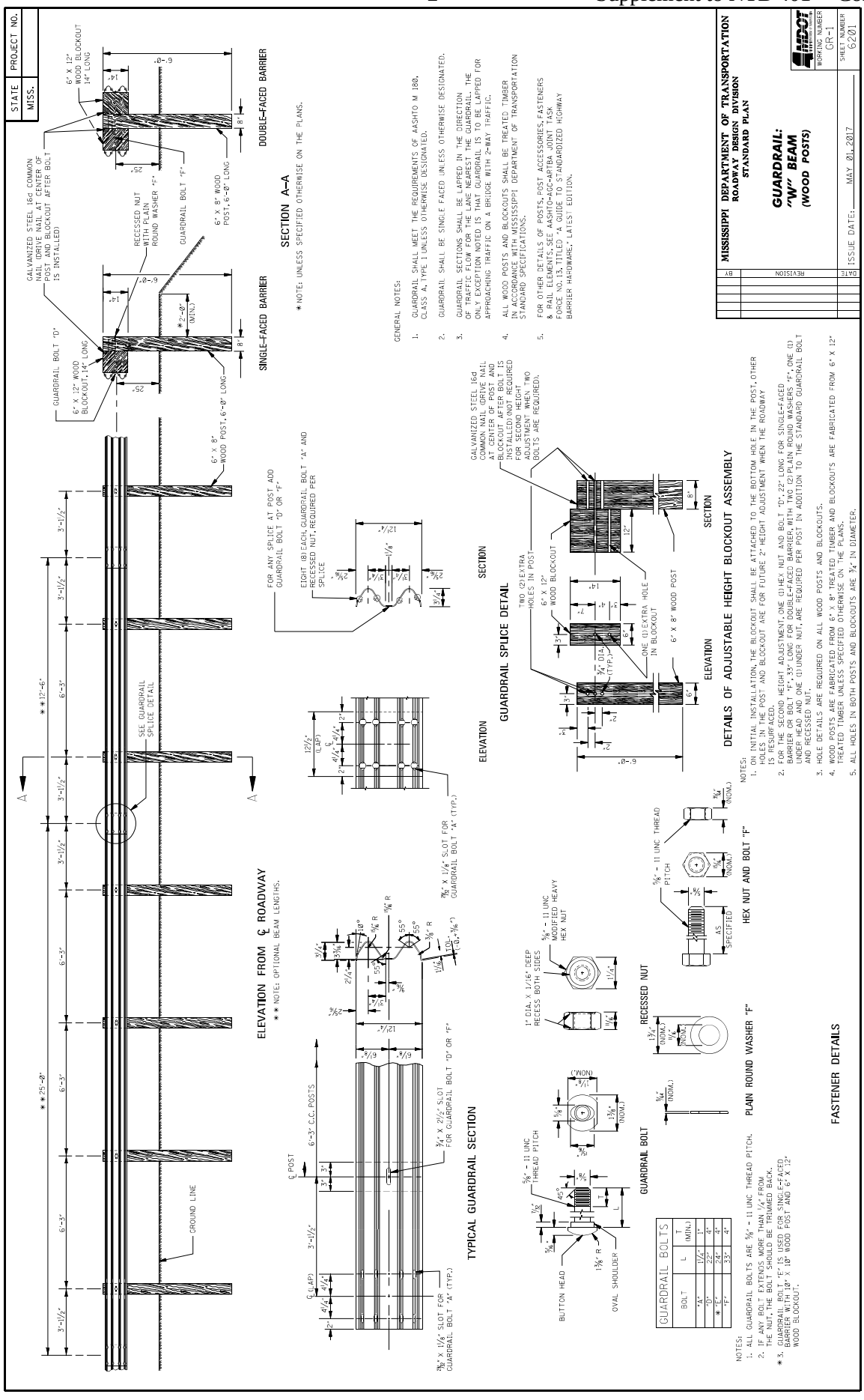
Bidders are advised that when the plans or contract documents require the speed limit on a project to be reduced, the Contractor shall begin work within 48 hours of installing the reduced speed limit signs. Should the Contractor not start work or have no plans to start work within 48 hours of installing the signs, the reduced speed limit signs shall be covered and existing speed limit signs uncovered.

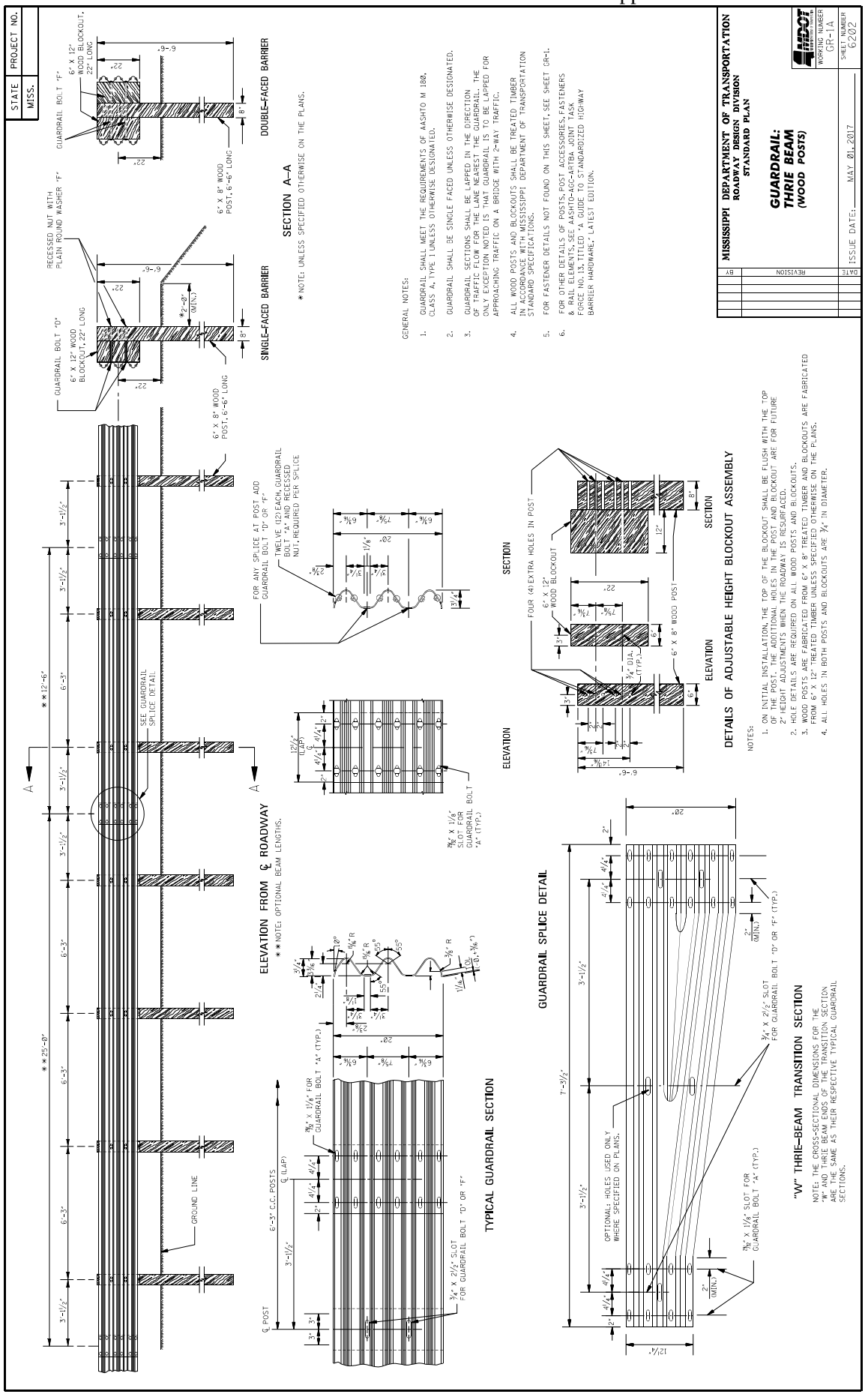
MISSISSIPPI DEPARTMENT OF TRANSPORTATION

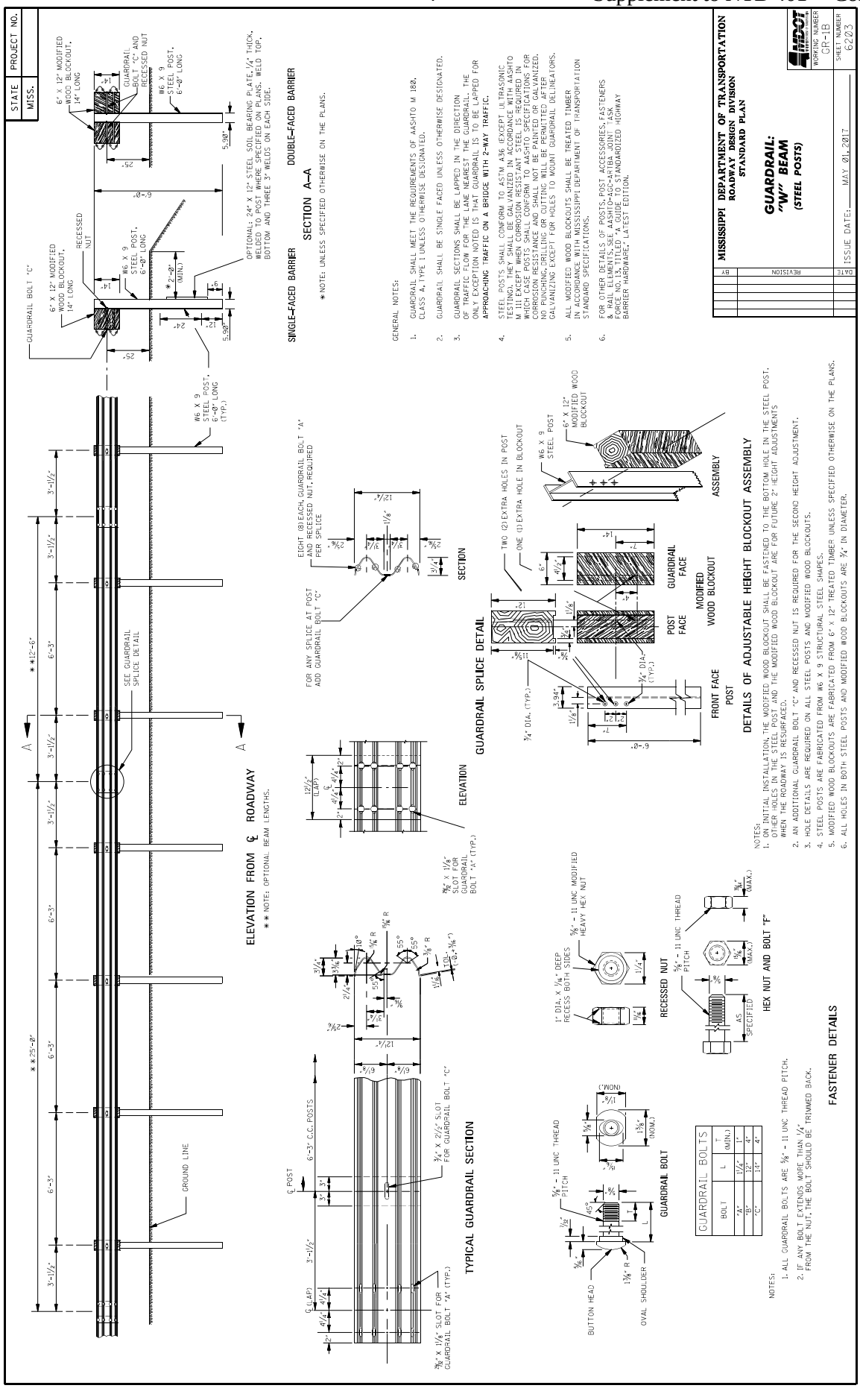
SUPPLEMENT TO NOTICE TO BIDDERS NO. 401

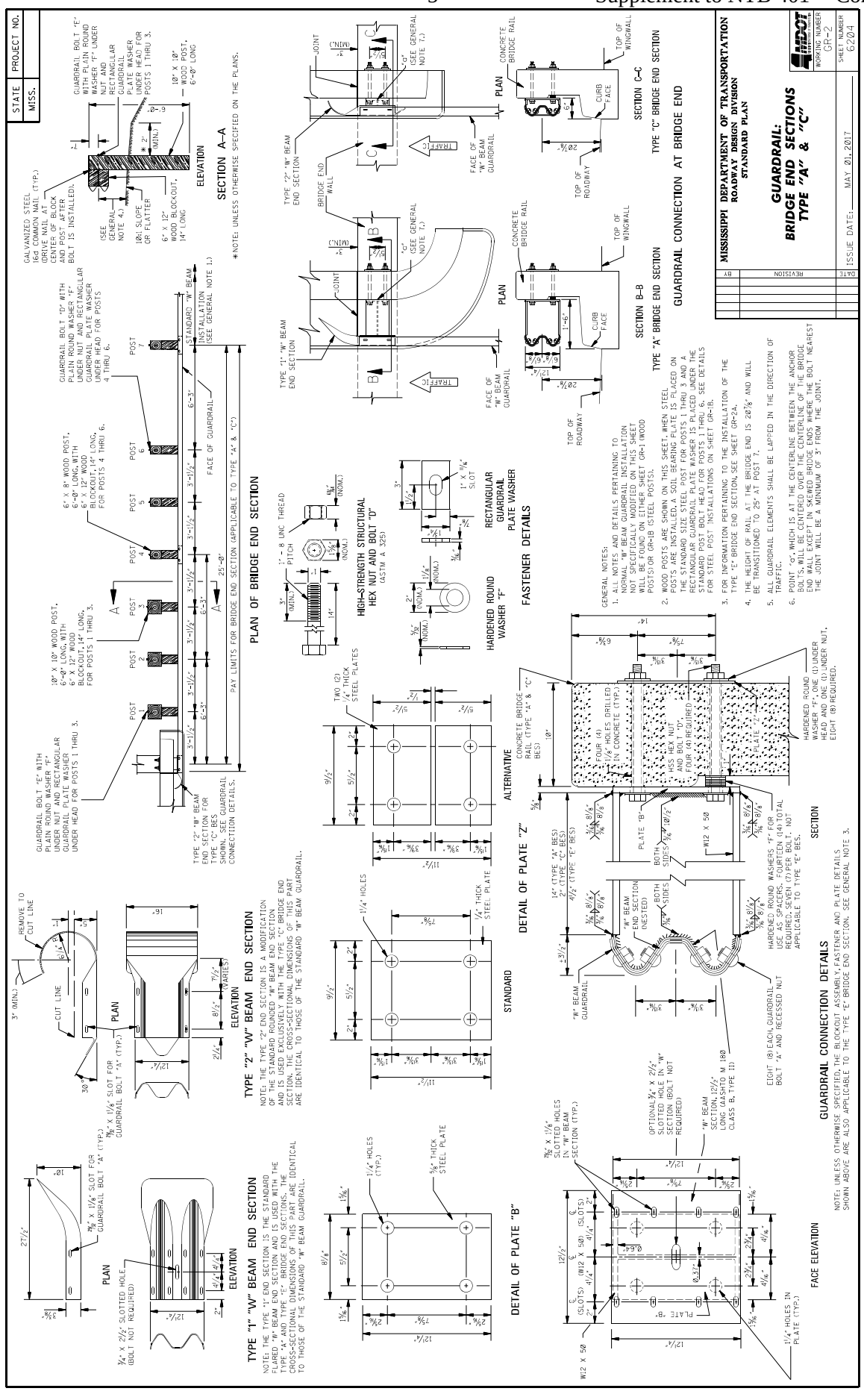
DATE: 09/12/2017

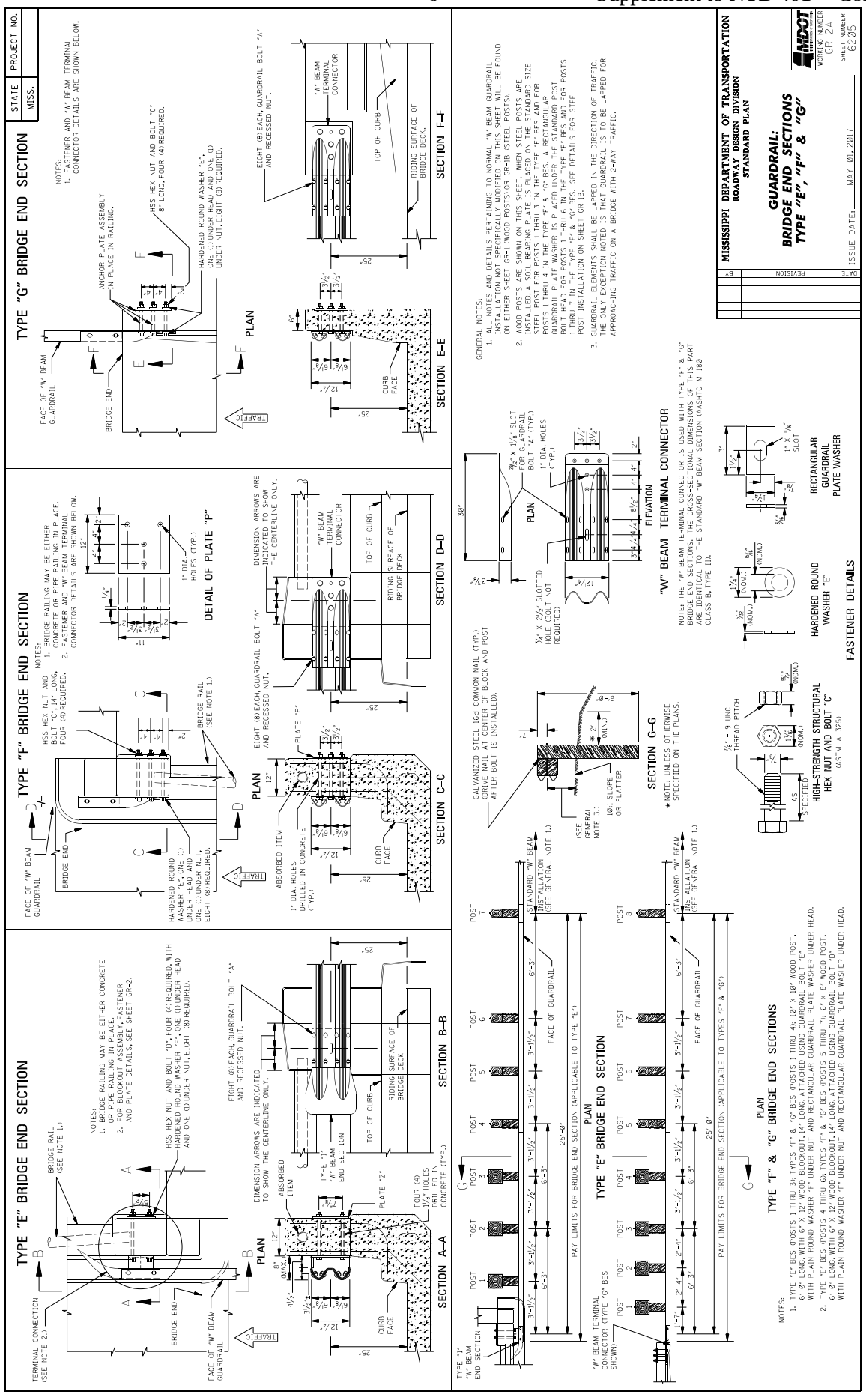
After the last drawing on page 25, add the following.

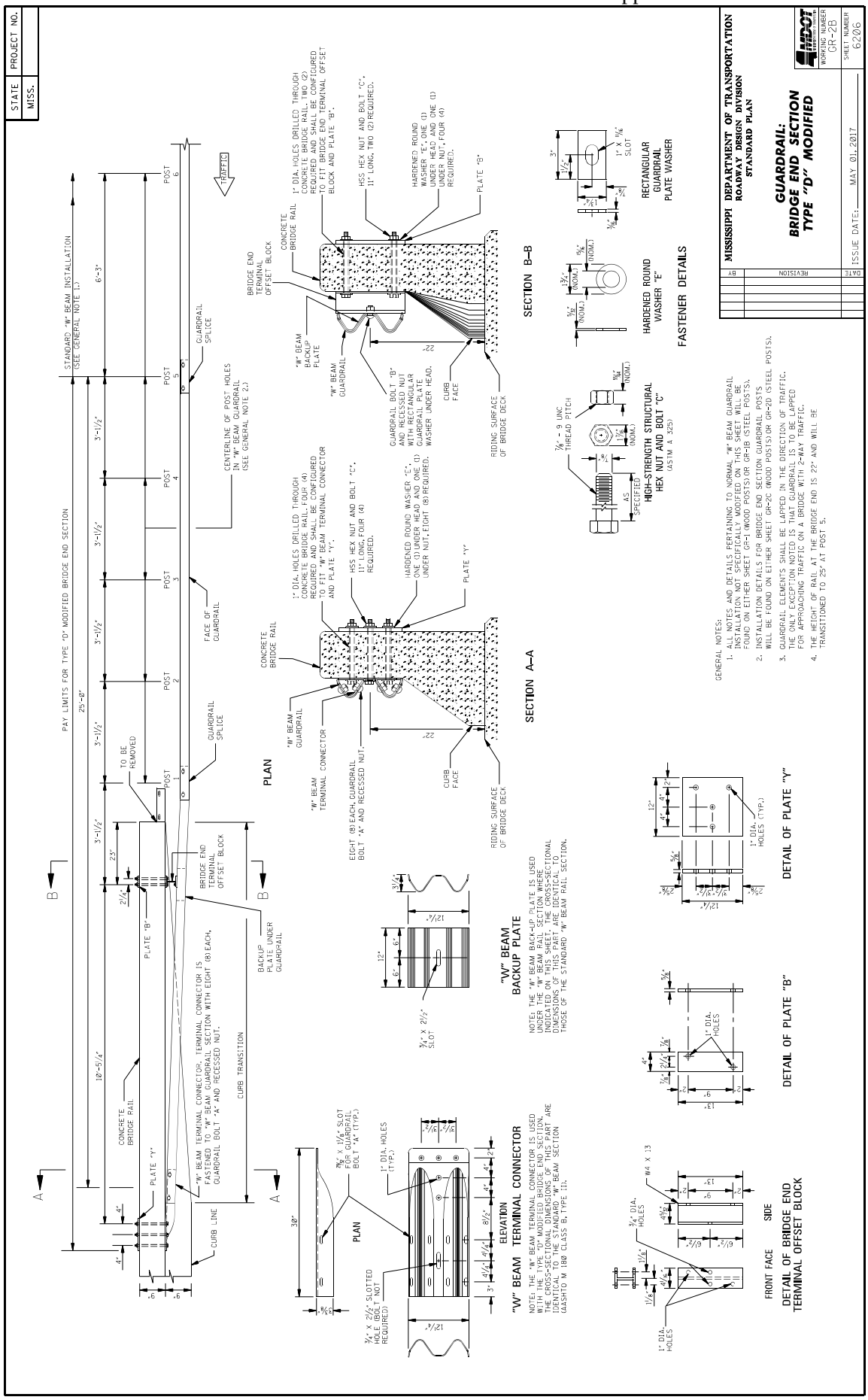

STATE
MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
"W" BEAM
(WOOD POSTS)
WORKING NUMBER
GR-1
SHEET NUMBER
6201
ISSUE DATE: MAY 01, 2017
BY
REVISION
DATE
GENERAL NOTES:
1. GUARDRAIL SHALL MEET THE REQUIREMENTS OF AASHTO M 180, CLASS A, TYPE 1 UNLESS OTHERWISE DESIGNATED.
2. GUARDRAIL SHALL BE SINGLE FACED UNLESS OTHERWISE DESIGNATED.
3. GUARDRAIL SECTIONS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW FOR THE LANE NEAREST THE GUARDRAIL. THE ONLY EXCEPTION NOTED IS THAT GUARDRAIL IS TO BE LAPPED FOR APPROACHING TRAFFIC ON A BRIDGE WITH 2-WAY TRAFFIC.
4. ALL WOOD POSTS AND BLOCKOUTS SHALL BE TREATED TIMBER IN ACCORDANCE WITH MISSISSIPPI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
5. FOR OTHER DETAILS OF POSTS, POST ACCESSORIES, FASTENERS & RAIL ELEMENTS, SEE AASHTO-AGC-ARTBA JOINT TASK FORCE NO. 13, TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE," LATEST EDITION.
SINGLE-FACED BARRIER
DOUBLE-FACED BARRIER
SECTION A–A
*NOTE: UNLESS SPECIFIED OTHERWISE ON THE PLANS.
GALVANIZED STEEL 16d COMMON NAIL DRIVE NAIL AT CENTER OF POST AND BLOCKOUT AFTER BOLT IS INSTALLED)
RECESSED NUT WITH PLAIN ROUND WASHER "F"
GUARDRAIL BOLT "F"
6" X 12" WOOD BLOCKOUT 14" LONG
6" X 8" WOOD POST, 6'-0" LONG
GUARDRAIL BOLT "D"
6" X 12" WOOD BLOCKOUT, 14" LONG
*2'-0" (MIN.)
ELEVATION FROM ℄ ROADWAY
** NOTE: OPTIONAL BEAM LENGTHS.
SEE GUARDRAIL SPLICE DETAIL
GROUND LINE
TYPICAL GUARDRAIL SECTION
℄ POST
6'-3" C.C. POSTS
℄ (LAP)
3/4" X 1 1/2" SLOT FOR GUARDRAIL BOLT "A" (TYP.)
3/4" X 2 1/2" SLOT FOR GUARDRAIL BOLT "D" OR "F"
GUARDRAIL BOLTS
BOLT | L | T (MIN.)
"A" | 1 1/4" | 1"
"D" | 22" | 4"
* "E" | 24" | 4"
"F" | 33" | 4"
NOTES:
1. ALL GUARDRAIL BOLTS ARE 5/8" - 11 UNC THREAD PITCH.
2. IF ANY BOLT EXTENDS MORE THAN 1/4" FROM THE NUT, THE BOLT SHOULD BE TRIMMED BACK.
* 3. GUARDRAIL BOLT "E" IS USED FOR SINGLE-FACED BARRIER WITH 10" X 10" WOOD POST AND 6" X 12" WOOD BLOCKOUT.
BUTTON HEAD
OVAL SHOULDER
5/8" - 11 UNC THREAD PITCH
GUARDRAIL BOLT
PLAIN ROUND WASHER "F"
1" DIA. X 1/16" DEEP RECESS BOTH SIDES
5/8" - 11 UNC MODIFIED HEAVY HEX NUT
RECESSED NUT
HEX NUT AND BOLT "F"
FASTENER DETAILS
FOR ANY SPLICE AT POST ADD GUARDRAIL BOLT "D" OR "F"
EIGHT (8) EACH GUARDRAIL BOLT "A" AND RECESSED NUT, REQUIRED PER SPLICE
ELEVATION
SECTION
GUARDRAIL SPLICE DETAIL
GALVANIZED STEEL 16d COMMON NAIL DRIVE NAIL AT CENTER OF POST AND BLOCKOUT AFTER BOLT IS INSTALLED) (NOT REQUIRED FOR SECOND HEIGHT ADJUSTMENT WHEN TWO BOLTS ARE REQUIRED).
TWO (2) EXTRA HOLES IN POST
6" X 12" WOOD BLOCKOUT
ONE (1) EXTRA HOLE IN BLOCKOUT
6" X 8" WOOD POST
ELEVATION
SECTION
DETAILS OF ADJUSTABLE HEIGHT BLOCKOUT ASSEMBLY
NOTES:
1. ON INITIAL INSTALLATION, THE BLOCKOUT SHALL BE ATTACHED TO THE BOTTOM HOLE IN THE POST. OTHER HOLES IN THE POST AND BLOCKOUT ARE FOR FUTURE 2" HEIGHT ADJUSTMENT WHEN THE ROADWAY IS RESURFACED.
2. FOR THE SECOND HEIGHT ADJUSTMENT, ONE (1) HEX NUT AND BOLT "D", 22" LONG FOR SINGLE-FACED BARRIER OR BOLT "F", 33" LONG FOR DOUBLE-FACED BARRIER, WITH TWO (2) PLAIN ROUND WASHERS "F", ONE (1) UNDER HEAD AND ONE (1) UNDER NUT, ARE REQUIRED PER POST IN ADDITION TO THE STANDARD GUARDRAIL BOLT AND RECESSED NUT.
3. HOLE DETAILS ARE REQUIRED ON ALL WOOD POSTS AND BLOCKOUTS.
4. WOOD POSTS ARE FABRICATED FROM 6" X 8" TREATED TIMBER AND BLOCKOUTS ARE FABRICATED FROM 6" X 12" TREATED TIMBER UNLESS SPECIFIED OTHERWISE ON THE PLANS.
5. ALL HOLES IN BOTH POSTS AND BLOCKOUTS ARE 3/4" IN DIAMETER.

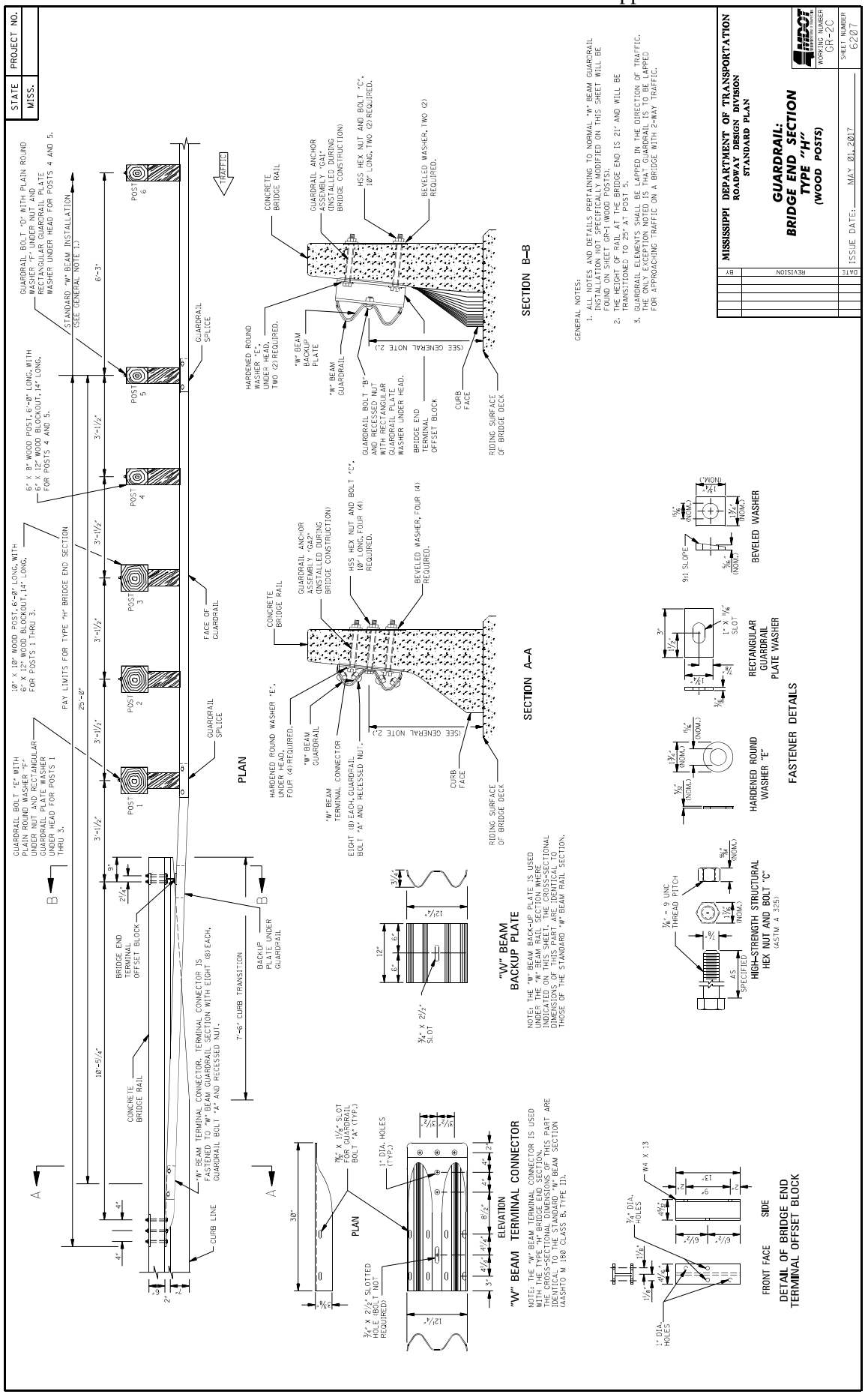

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL: THRIE BEAM (WOOD POSTS)
WORKING NUMBER GR-1A
SHEET NUMBER 6202
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
GENERAL NOTES:
1. GUARDRAIL SHALL MEET THE REQUIREMENTS OF AASHTO M 180, CLASS A, TYPE I UNLESS OTHERWISE DESIGNATED.
2. GUARDRAIL SHALL BE SINGLE FACED UNLESS OTHERWISE DESIGNATED.
3. GUARDRAIL SECTIONS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW FOR THE LANE NEAREST THE GUARDRAIL. THE ONLY EXCEPTION NOTED IS THAT GUARDRAIL IS TO BE LAPPED FOR APPROACHING TRAFFIC ON A BRIDGE WITH 2-WAY TRAFFIC.
4. ALL WOOD POSTS AND BLOCKOUTS SHALL BE TREATED TIMBER IN ACCORDANCE WITH MISSISSIPPI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
5. FOR FASTENER DETAILS NOT FOUND ON THIS SHEET, SEE SHEET GR-1.
6. FOR OTHER DETAILS OF POSTS, POST ACCESSORIES, FASTENERS & RAIL ELEMENTS, SEE AASHTO-AGC-ARTBA JOINT TASK FORCE NO. 13, TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE," LATEST EDITION.
SECTION A–A
* NOTE: UNLESS SPECIFIED OTHERWISE ON THE PLANS.
SINGLE-FACED BARRIER
DOUBLE-FACED BARRIER
GUARDRAIL BOLT "D"
6" X 12" WOOD BLOCKOUT, 22" LONG
GUARDRAIL BOLT "F"
6" X 12" WOOD BLOCKOUT, 22" LONG
RECESSED NUT WITH PLAIN ROUND WASHER "F"
6" X 8" WOOD POST, 6'-6" LONG
ELEVATION FROM ℄ ROADWAY
** NOTE: OPTIONAL BEAM LENGTHS.
SEE GUARDRAIL SPLICE DETAIL
GROUND LINE
TYPICAL GUARDRAIL SECTION
℄ POST
6'-3" C.C. POSTS
℄ LAP
OPTIONAL HOLES USED ONLY WHERE SPECIFIED ON PLANS.
FOR ANY SPLICE AT POST ADD GUARDRAIL BOLT "D" OR "F"
TWELVE (12) EACH, GUARDRAIL BOLT "A" AND RECESSED NUT, REQUIRED PER SPLICE
SECTION
ELEVATION
GUARDRAIL SPLICE DETAIL
"W" THRIE-BEAM TRANSITION SECTION
NOTE: THE CROSS-SECTIONAL DIMENSIONS FOR THE "W" AND THRIE BEAM ENDS OF THE TRANSITION SECTION ARE THE SAME AS THEIR RESPECTIVE TYPICAL GUARDRAIL SECTIONS.
DETAILS OF ADJUSTABLE HEIGHT BLOCKOUT ASSEMBLY
FOUR (4) EXTRA HOLES IN POST
6" X 12" WOOD BLOCKOUT
6" X 8" WOOD POST
NOTES:
1. ON INITIAL INSTALLATION, THE TOP OF THE BLOCKOUT SHALL BE FLUSH WITH THE TOP OF THE POST. THE ADDITIONAL HOLES IN THE POST AND BLOCKOUT ARE FOR FUTURE 2" HEIGHT ADJUSTMENTS WHEN THE ROADWAY IS RESURFACED.
2. HOLE DETAILS ARE REQUIRED ON ALL WOOD POSTS AND BLOCKOUTS.
3. WOOD POSTS ARE FABRICATED FROM 6" X 8" TREATED TIMBER AND BLOCKOUTS ARE FABRICATED FROM 6" X 12" TREATED TIMBER UNLESS SPECIFIED OTHERWISE ON THE PLANS.
4. ALL HOLES IN BOTH POSTS AND BLOCKOUTS ARE ¾" IN DIAMETER.

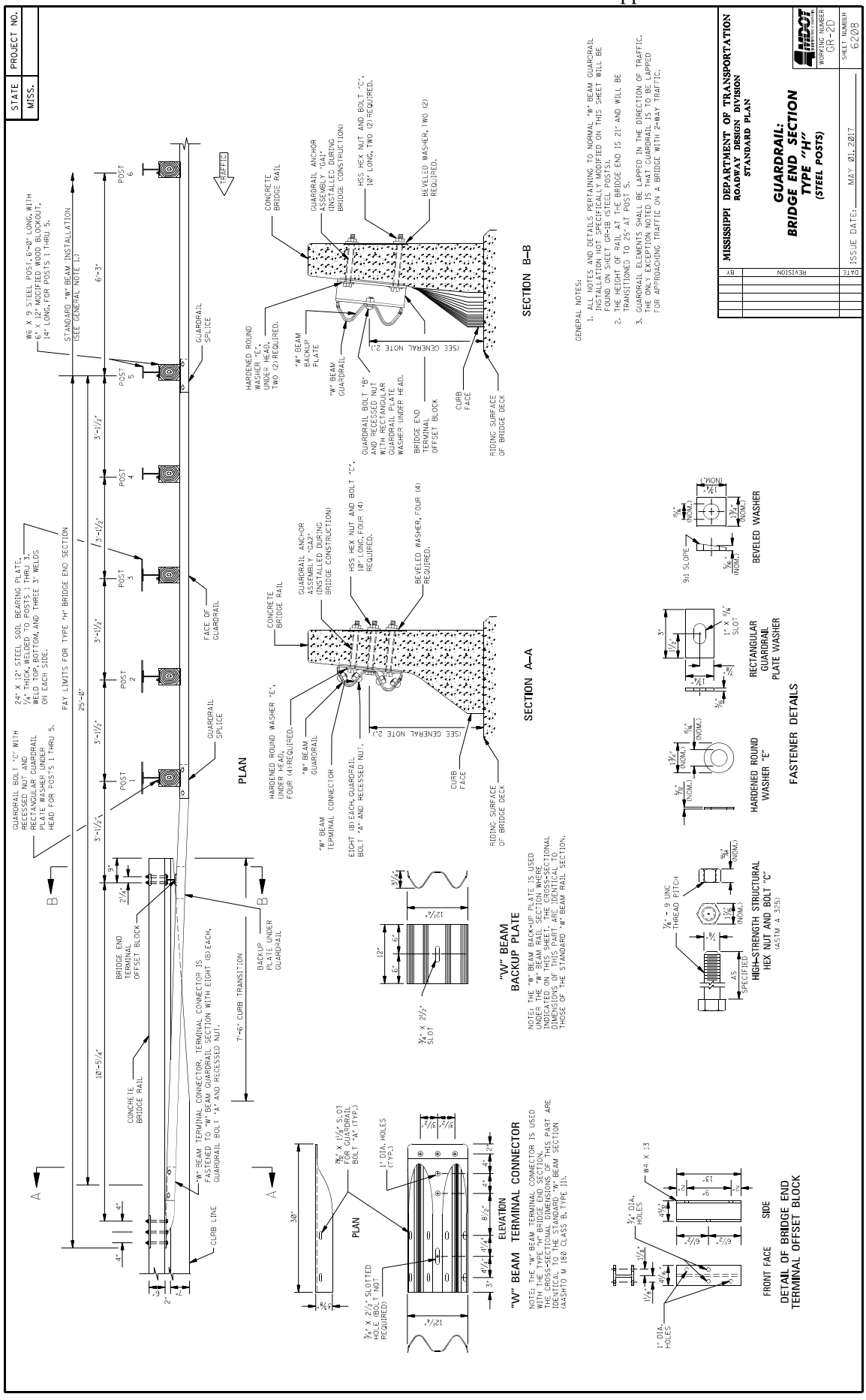

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL: "W" BEAM (STEEL POSTS)
WORKING NUMBER GR-1B
SHEET NUMBER 6203
ISSUE DATE: MAY 01, 2017
BY REVISION DATE
SINGLE-FACED BARRIER
SECTION A-A
DOUBLE-FACED BARRIER
* NOTE: UNLESS SPECIFIED OTHERWISE ON THE PLANS.
GENERAL NOTES:
1. GUARDRAIL SHALL MEET THE REQUIREMENTS OF AASHTO M 180, CLASS A, TYPE 1 UNLESS OTHERWISE DESIGNATED.
2. GUARDRAIL SHALL BE SINGLE FACED UNLESS OTHERWISE DESIGNATED.
3. GUARDRAIL SECTIONS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW FOR THE LANE NEAREST THE GUARDRAIL. THE ONLY EXCEPTION NOTED IS THAT GUARDRAIL IS TO BE LAPPED FOR APPROACHING TRAFFIC ON A BRIDGE WITH 2-WAY TRAFFIC.
4. STEEL POSTS SHALL CONFORM TO ASTM A36 (EXCEPT ULTRASONIC TESTING) AND SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH AASHTO M 111 EXCEPT WHEN CORROSION RESISTANT STEEL IS REQUIRED IN WHICH CASE POSTS SHALL CONFORM TO AASHTO SPECIFICATIONS FOR CORROSION RESISTANCE AND SHALL NOT BE PAINTED OR GALVANIZED. NO PUNCHING, DRILLING OR CUTTING WILL BE PERMITTED AFTER GALVANIZING EXCEPT FOR HOLES TO MOUNT GUARDRAIL DELINEATORS.
5. ALL MODIFIED WOOD BLOCKOUTS SHALL BE TREATED TIMBER IN ACCORDANCE WITH MISSISSIPPI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
6. FOR OTHER DETAILS OF POSTS, POST ACCESSORIES, FASTENERS & RAIL ELEMENTS, SEE AASHTO-AGC-ARTBA JOINT TASK FORCE NO. 13, TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE," LATEST EDITION.
ELEVATION FROM ℄ ROADWAY
** NOTE: OPTIONAL BEAM LENGTHS.
SEE GUARDRAIL SPLICE DETAIL
GROUND LINE
TYPICAL GUARDRAIL SECTION
GUARDRAIL SPLICE DETAIL
FOR ANY SPLICE AT POST ADD GUARDRAIL BOLT "C"
EIGHT (8) EACH, GUARDRAIL BOLT "A" AND RECESSED NUT, REQUIRED PER SPLICE
SECTION
ELEVATION
TWO (2) EXTRA HOLES IN POST
ONE (1) EXTRA HOLE IN BLOCKOUT
POST FACE
GUARDRAIL FACE
MODIFIED WOOD BLOCKOUT
FRONT FACE POST
ASSEMBLY
DETAILS OF ADJUSTABLE HEIGHT BLOCKOUT ASSEMBLY
NOTES:
1. ON INITIAL INSTALLATION, THE MODIFIED WOOD BLOCKOUT SHALL BE FASTENED TO THE BOTTOM HOLE IN THE STEEL POST. OTHER HOLES IN THE STEEL POST AND THE MODIFIED WOOD BLOCKOUT ARE FOR FUTURE 2" HEIGHT ADJUSTMENTS WHEN THE ROADWAY IS RESURFACED.
2. AN ADDITIONAL GUARDRAIL BOLT "C" AND RECESSED NUT IS REQUIRED FOR THE SECOND HEIGHT ADJUSTMENT.
3. HOLE DETAILS ARE REQUIRED ON ALL STEEL POSTS AND MODIFIED WOOD BLOCKOUTS.
4. STEEL POSTS ARE FABRICATED FROM W6 X 9 STRUCTURAL STEEL SHAPES.
5. MODIFIED WOOD BLOCKOUTS ARE FABRICATED FROM 6" X 12" TREATED TIMBER UNLESS SPECIFIED OTHERWISE ON THE PLANS.
6. ALL HOLES IN BOTH STEEL POSTS AND MODIFIED WOOD BLOCKOUTS ARE 3/4" IN DIAMETER.
FASTENER DETAILS
GUARDRAIL BOLTS
BOLT L T (MIN.)
"A" 1 1/4" 1"
"B" 12" 4"
"C" 14" 4"
GUARDRAIL BOLT
RECESSED NUT
HEX NUT AND BOLT "F"
NOTES:
1. ALL GUARDRAIL BOLTS ARE 5/8" - 11 UNC THREAD PITCH.
2. IF ANY BOLT EXTENDS MORE THAN 1/4" FROM THE NUT, THE BOLT SHOULD BE TRIMMED BACK.

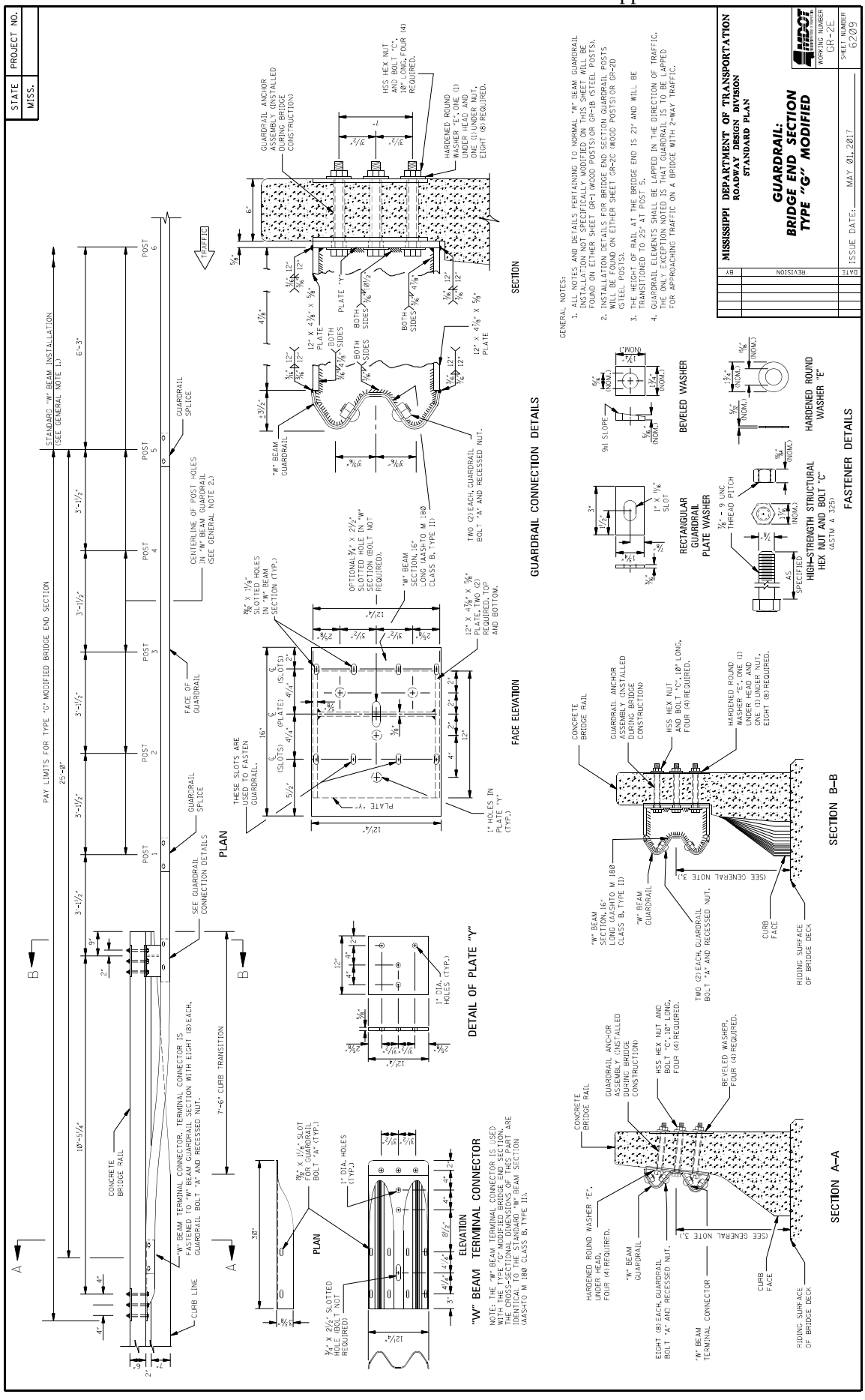

STATE
MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
BRIDGE END SECTIONS
TYPE "A" & "C"
WORKING NUMBER GR-2
SHEET NUMBER 6204
ISSUE DATE: MAY 01, 2017
REVISION
BY
DATE
PLAN OF BRIDGE END SECTION
PAY LIMITS FOR BRIDGE END SECTION (APPLICABLE TO TYPE "A" & "C")
*NOTE: UNLESS OTHERWISE SPECIFIED ON THE PLANS.
SECTION A–A
ELEVATION
PLAN
TYPE "2" "W" BEAM END SECTION
TYPE "1" "W" BEAM END SECTION
DETAIL OF PLATE "B"
DETAIL OF PLATE "Z"
ALTERNATIVE
STANDARD
FASTENER DETAILS
HIGH-STRENGTH STRUCTURAL HEX NUT AND BOLT "D" (ASTM A 325)
HARDENED ROUND WASHER "F"
RECTANGULAR GUARDRAIL PLATE WASHER
GUARDRAIL CONNECTION DETAILS
FACE ELEVATION
SECTION
GENERAL NOTES:
1. ALL NOTES AND DETAILS PERTAINING TO NORMAL "W" BEAM GUARDRAIL INSTALLATION NOT SPECIFICALLY MODIFIED ON THIS SHEET WILL BE FOUND ON EITHER SHEET GR-1 (WOOD POSTS) OR GR-1B (STEEL POSTS).
2. WOOD POSTS ARE SHOWN ON THIS SHEET. WHEN STEEL POSTS ARE INSTALLED, A SOIL BEARING PLATE IS PLACED ON THE STANDARD SIZE STEEL POST FOR POSTS 1 THRU 3 AND A RECTANGULAR GUARDRAIL PLATE WASHER IS PLACED UNDER THE STANDARD BOLT HEAD FOR POSTS 1 THRU 6. SEE DETAILS FOR STEEL POST INSTALLATIONS ON SHEET GR-1B.
3. FOR INFORMATION PERTAINING TO THE INSTALLATION OF THE TYPE "E" BRIDGE END SECTION, SEE SHEET GR-2A.
4. THE HEIGHT OF RAIL AT THE BRIDGE END IS 20⅞" AND WILL BE TRANSITIONED TO 25" AT POST 7.
5. ALL GUARDRAIL ELEMENTS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC.
6. POINT "a", WHICH IS AT THE CENTERLINE BETWEEN THE ANCHOR BOLTS, WILL BE CENTERED OVER THE CENTERLINE OF THE BRIDGE END WALL EXCEPT IN SKEWED BRIDGE ENDS WHERE THE BOLT NEAREST THE JOINT WILL BE A MINIMUM OF 3" FROM THE JOINT.
TYPE "A" BRIDGE END SECTION
GUARDRAIL CONNECTION AT BRIDGE END
TYPE "C" BRIDGE END SECTION
SECTION B–B
SECTION C–C

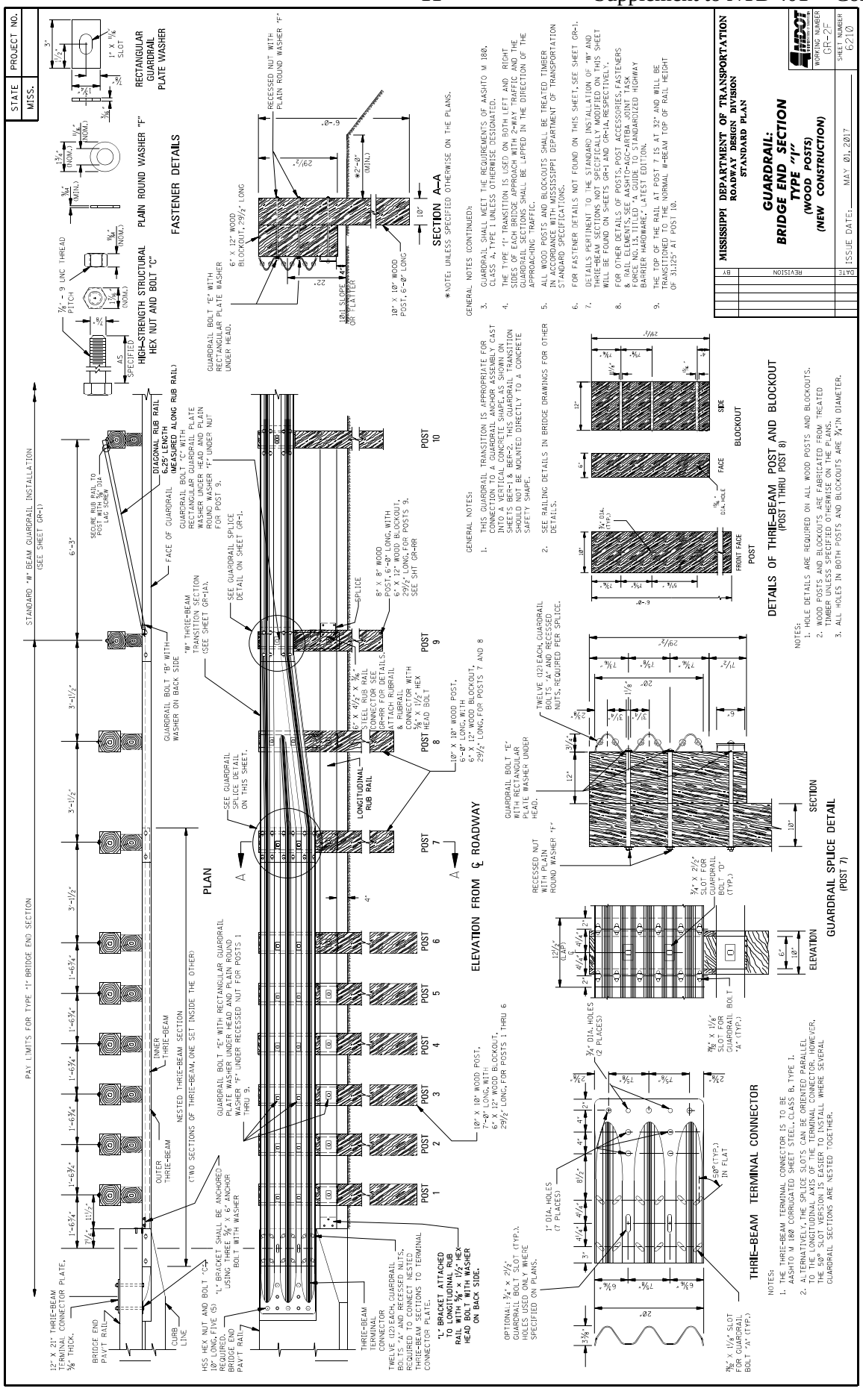

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
BRIDGE END SECTIONS
TYPE "E", "F" & "G"
WORKING NUMBER GR-24
SHEET NUMBER 6205
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
TYPE "E" BRIDGE END SECTION
TYPE "F" BRIDGE END SECTION
TYPE "G" BRIDGE END SECTION
DETAIL OF PLATE "P"
"W" BEAM TERMINAL CONNECTOR
ELEVATION
PLAN
SECTION A–A
SECTION B–B
SECTION C–C
SECTION D–D
SECTION E–E
SECTION F–F
SECTION G–G
TYPE "1" "W" BEAM END SECTION
TYPE "E" BRIDGE END SECTION
TYPE "F" & "G" BRIDGE END SECTIONS
FASTENER DETAILS
HARDENED ROUND WASHER "E"
RECTANGULAR GUARDRAIL PLATE WASHER
HIGH-STRENGTH STRUCTURAL HEX NUT AND BOLT "C"
GENERAL NOTES:
NOTES:
GALVANIZED STEEL 16d COMMON NAIL (TYP.) (DRIVE NAIL AT CENTER OF BLOCK AND POST AFTER BOLT IS INSTALLED).
3/4" X 2 1/2" SLOTTED HOLE (BOLT NOT REQUIRED)
1" DIA. HOLES (TYP.)
7/8" X 1 1/4" SLOT FOR GUARDRAIL BOLT "A" (TYP.)
1" X 1 3/4" SLOT
7/8" - 9 UNC THREAD PITCH
AS SPECIFIED
(NOM.)
(SEE GENERAL NOTE 1.)
10:1 SLOPE OR FLATTER
* 2' MIN.
* NOTE: UNLESS OTHERWISE SPECIFIED ON THE PLANS.
NOTE: THE "W" BEAM TERMINAL CONNECTOR IS USED WITH TYPE "F" & "G" BRIDGE END SECTIONS. THE CROSS-SECTIONAL DIMENSIONS OF THIS PART ARE IDENTICAL TO THE STANDARD "W" BEAM SECTION (AASHTO M 180 CLASS B, TYPE II).
PAY LIMITS FOR BRIDGE END SECTION (APPLICABLE TO TYPE "E")
PAY LIMITS FOR BRIDGE END SECTION (APPLICABLE TO TYPES "F" & "G")
STANDARD "W" BEAM INSTALLATION (SEE GENERAL NOTE 1.)
FACE OF GUARDRAIL
"W" BEAM TERMINAL CONNECTOR (TYPE "G" BES SHOWN)
TERMINAL CONNECTION (SEE NOTE 2.)
BRIDGE RAIL (SEE NOTE 1.)
BRIDGE END
FACE OF "W" BEAM GUARDRAIL
TRAFFIC
CURB FACE
TOP OF CURB
RIDING SURFACE OF BRIDGE DECK
ABSORBED ITEM
PLATE "2"
FOUR (4) 1 1/8" HOLES DRILLED IN CONCRETE (TYP.)
TYPE "1" "W" BEAM END SECTION
DIMENSION ARROWS ARE INDICATED TO SHOW THE CENTERLINE ONLY.
EIGHT (8) EACH, GUARDRAIL BOLT "A" AND RECESSED NUT.
ANCHOR PLATE ASSEMBLY IN PLACE IN RAILING.
HSS HEX NUT AND BOLT "C" 8" LONG, FOUR (4) REQUIRED.
HARDENED ROUND WASHER "E", ONE (1) UNDER HEAD AND ONE (1) UNDER NUT, EIGHT (8) REQUIRED.
HSS HEX NUT AND BOLT "C", 14" LONG, FOUR (4) REQUIRED.
HARDENED ROUND WASHER "E", ONE (1) UNDER HEAD AND ONE (1) UNDER PLATE NUT, EIGHT (8) REQUIRED.
1" DIA. HOLES (TYP.)
ABSORBED ITEM
PLATE "P"
1" DIA. HOLES DRILLED IN CONCRETE (TYP.)
NOTES:
1. BRIDGE RAILING MAY BE EITHER CONCRETE OR PIPE RAILING IN PLACE.
2. FASTENER AND "W" BEAM TERMINAL CONNECTOR DETAILS ARE SHOWN BELOW.
NOTES:
1. BRIDGE RAILING MAY BE EITHER CONCRETE OR PIPE RAILING IN PLACE.
2. FOR BLOCKOUT ASSEMBLY, FASTENER AND PLATE DETAILS, SEE SHEET GR-2.
NOTES:
1. FASTENER AND "W" BEAM TERMINAL CONNECTOR DETAILS ARE SHOWN BELOW.
1. ALL NOTES AND DETAILS PERTAINING TO NORMAL "W" BEAM GUARDRAIL INSTALLATION NOT SPECIFICALLY MODIFIED ON THIS SHEET WILL BE FOUND ON EITHER SHEET GR-1 (WOOD POSTS) OR GR-1B (STEEL POSTS).
2. WOOD POSTS ARE SHOWN ON THIS SHEET. WHEN STEEL POSTS ARE INSTALLED, A SOIL BEARING PLATE IS PLACED ON THE STANDARD SIZE STEEL POST FOR POSTS 1 THRU 3 IN THE TYPE "E" BES AND FOR POSTS 1 THRU 5 IN THE TYPE "F" & "G" BES. A RECTANGULAR GUARDRAIL PLATE WASHER IS PLACED UNDER THE STANDARD POST BOLT HEAD FOR POSTS 1 THRU 6 IN THE TYPE "E" BES AND FOR POSTS 1 THRU 7 IN THE TYPE "F" & "G" BES. SEE DETAILS FOR STEEL POST INSTALLATION ON SHEET GR-1B.
3. GUARDRAIL ELEMENTS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC. THE ONLY EXCEPTION NOTED IS THAT GUARDRAIL IS TO BE LAPPED FOR APPROACHING TRAFFIC ON A BRIDGE WITH 2-WAY TRAFFIC.
NOTES:
1. TYPE "E" BES (POSTS 1 THRU 3 & TYPES "F" & "G" BES (POSTS 1 THRU 4): 10" X 10" WOOD POST, 6'-0" LONG, WITH 6" X 12" WOOD BLOCKOUT, 14" LONG, ATTACHED USING GUARDRAIL BOLT "E", WITH PLAIN ROUND WASHER "F" UNDER NUT AND RECTANGULAR GUARDRAIL PLATE WASHER UNDER HEAD.
2. TYPE "E" BES (POSTS 4 THRU 6) & TYPES "F" & "G" BES (POSTS 5 THRU 7): 6" X 8" WOOD POST, 6'-0" LONG, WITH 6" X 12" WOOD BLOCKOUT, 14" LONG, ATTACHED USING GUARDRAIL BOLT "D", WITH PLAIN ROUND WASHER "F" UNDER NUT AND RECTANGULAR GUARDRAIL PLATE WASHER UNDER HEAD.

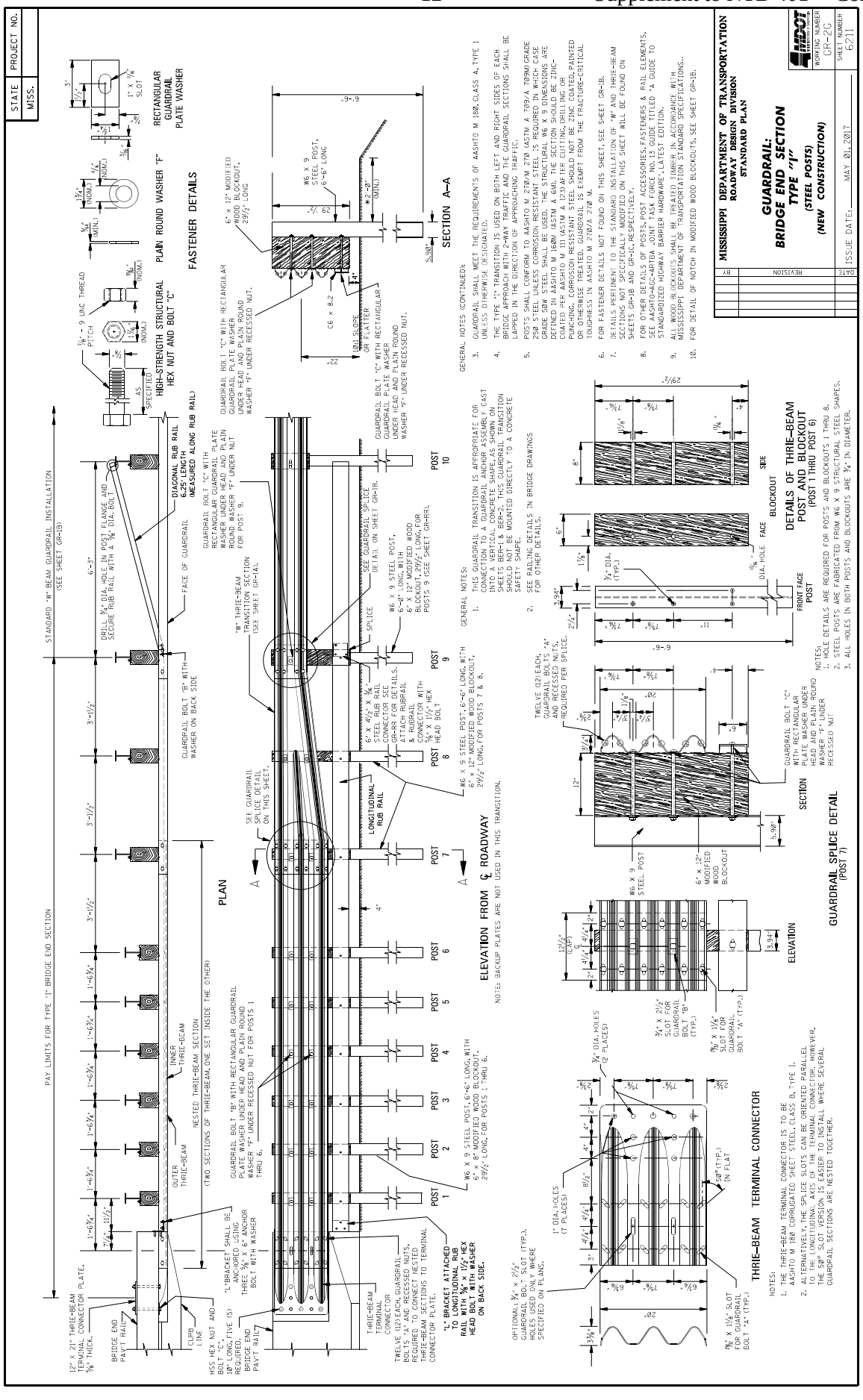

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
BRIDGE END SECTION
TYPE "D" MODIFIED
WORKING NUMBER GR-2B
SHEET NUMBER 6206
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
PAY LIMITS FOR TYPE "D" MODIFIED BRIDGE END SECTION
STANDARD "W" BEAM INSTALLATION (SEE GENERAL NOTE 1.)
25'-0"
10'-5 1/4"
6'-3"
3'-1 1/2"
POST 1
POST 2
POST 3
POST 4
POST 5
POST 6
TRAFFIC
TO BE REMOVED
GUARDRAIL SPLICE
FACE OF GUARDRAIL
CENTERLINE OF POST HOLES IN "W" BEAM GUARDRAIL (SEE GENERAL NOTE 2.)
CONCRETE BRIDGE RAIL
PLATE "Y"
PLATE "B"
BRIDGE END TERMINAL OFFSET BLOCK
BACKUP PLATE UNDER GUARDRAIL
"W" BEAM TERMINAL CONNECTOR, TERMINAL CONNECTOR IS FASTENED TO "W" BEAM GUARDRAIL SECTION WITH EIGHT (8) EACH, GUARDRAIL BOLT "A" AND RECESSED NUT.
CURB TRANSITION
CURB LINE
PLAN
SECTION A–A
SECTION B–B
"W" BEAM GUARDRAIL
"W" BEAM TERMINAL CONNECTOR
EIGHT (8) EACH, GUARDRAIL BOLT "A" AND RECESSED NUT.
1" DIA. HOLES DRILLED THROUGH CONCRETE BRIDGE RAIL, FOUR (4) REQUIRED AND SHALL BE CONFIGURED TO FIT "W" BEAM TERMINAL CONNECTOR AND PLATE "Y".
HSS HEX NUT AND BOLT "C", 11" LONG, FOUR (4) REQUIRED.
HARDENED ROUND WASHER "E", ONE (1) UNDER HEAD AND ONE (1) UNDER NUT, EIGHT (8) REQUIRED.
CURB FACE
RIDING SURFACE OF BRIDGE DECK
"W" BEAM BACKUP PLATE
GUARDRAIL BOLT "B" AND RECESSED NUT WITH RECTANGULAR GUARDRAIL PLATE WASHER UNDER HEAD.
1" DIA. HOLES DRILLED THROUGH CONCRETE BRIDGE RAIL, TWO (2) REQUIRED AND SHALL BE CONFIGURED TO FIT BRIDGE END TERMINAL OFFSET BLOCK AND PLATE "B".
HSS HEX NUT AND BOLT "C", 11" LONG, TWO (2) REQUIRED.
HARDENED ROUND WASHER "E", ONE (1) UNDER HEAD AND ONE (1) UNDER NUT, FOUR (4) REQUIRED.
PLATE "B"
"W" BEAM BACKUP PLATE
NOTE: THE "W" BEAM BACK-UP PLATE IS USED UNDER THE "W" BEAM RAIL SECTION WHERE MOUNTING HEIGHT DIFFERS FROM STANDARD. DIMENSIONS OF THIS PART ARE IDENTICAL TO THOSE OF THE STANDARD "W" BEAM RAIL SECTION.
"W" BEAM TERMINAL CONNECTOR
NOTE: THE "W" BEAM TERMINAL CONNECTOR IS USED WITH THE TYPE "D" MODIFIED BRIDGE END SECTION. THE CROSS-SECTIONAL DIMENSIONS OF THIS PART ARE IDENTICAL TO THE STANDARD "W" BEAM SECTION (AASHTO M 180 CLASS B, TYPE II).
ELEVATION
PLAN
FRONT FACE
SIDE
DETAIL OF BRIDGE END TERMINAL OFFSET BLOCK
DETAIL OF PLATE "B"
DETAIL OF PLATE "Y"
FASTENER DETAILS
RECTANGULAR GUARDRAIL PLATE WASHER
HARDENED ROUND WASHER "E"
HIGH-STRENGTH STRUCTURAL HEX NUT AND BOLT "C" (ASTM A 325)
GENERAL NOTES:
1. ALL NOTES AND DETAILS PERTAINING TO NORMAL "W" BEAM GUARDRAIL INSTALLATION AND SPECIFICALLY MODIFIED ON THIS SHEET WILL BE FOUND ON EITHER SHEET GR-1C (WOOD POSTS) OR GR-1D (STEEL POSTS).
2. INSTALLATION DETAILS FOR BRIDGE END SECTION GUARDRAIL POSTS WILL BE FOUND ON EITHER SHEET GR-2C (WOOD POSTS) OR GR-2D (STEEL POSTS).
3. GUARDRAIL ELEMENTS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC. THE ONLY EXCEPTION NOTED IS THAT GUARDRAIL IS TO BE LAPPED FOR APPROACHING TRAFFIC ON A BRIDGE WITH 2-WAY TRAFFIC.
4. THE "HEIGHT" OF RAIL AT THE BRIDGE END IS 22" AND WILL BE TRANSITIONED TO 25" AT POST 5.

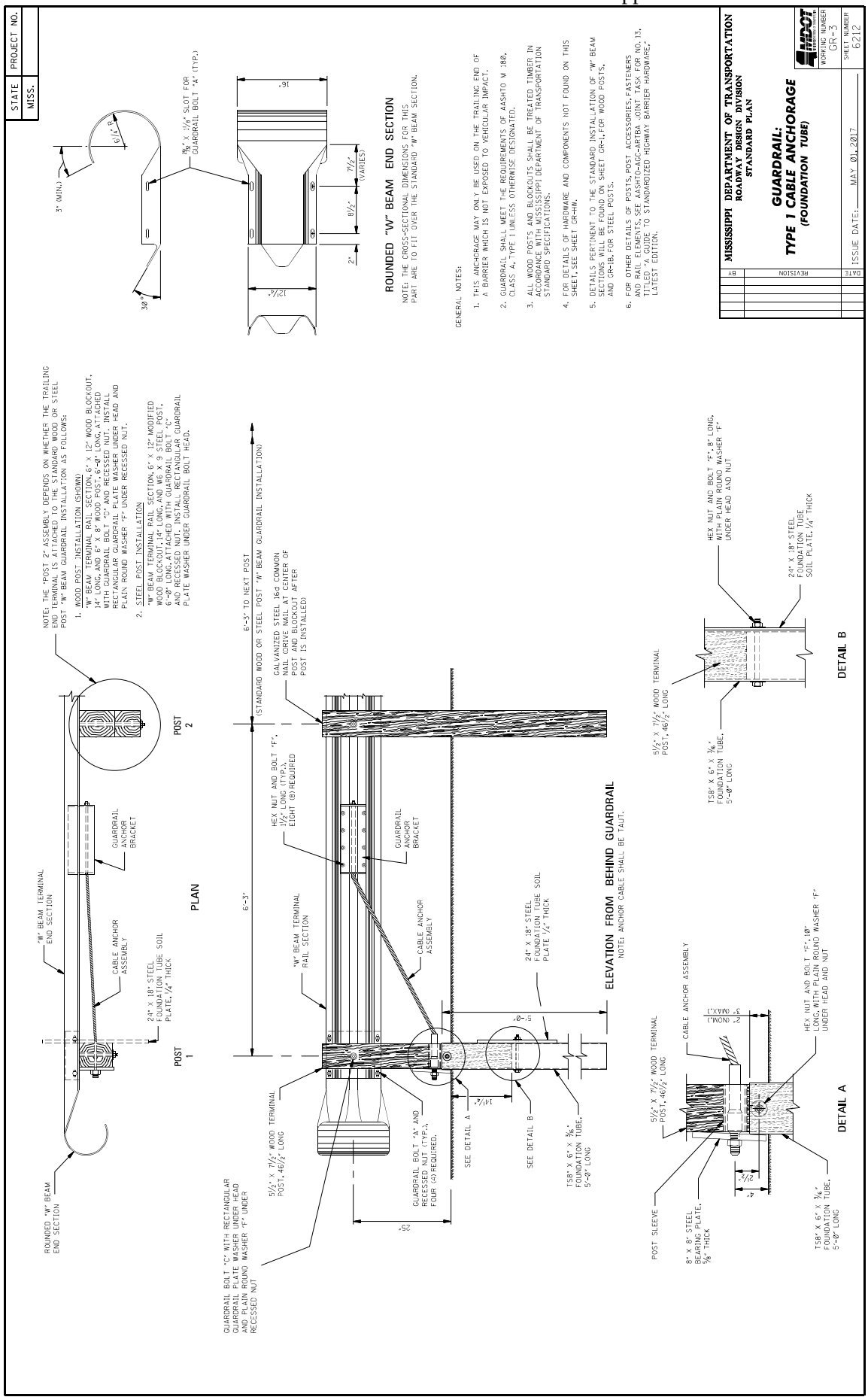

STATE
MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
BRIDGE END SECTION
TYPE "H"
(WOOD POSTS)
WORKING NUMBER
GR-2C
SHEET NUMBER
6207
ISSUE DATE: MAY 01, 2017
REVISION
BY
DATE
GENERAL NOTES:
1. ALL NOTES AND DETAILS PERTAINING TO NORMAL "W" BEAM GUARDRAIL INSTALLATION NOT SPECIFICALLY MODIFIED ON THIS SHEET WILL BE FOUND ON SHEET GR-1 (WOOD POSTS).
2. THE HEIGHT OF RAIL AT THE BRIDGE END IS 21" AND WILL BE TRANSITIONED TO 25" AT POST 5.
3. GUARDRAIL ELEMENTS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC. THE ONLY EXCEPTION NOTED IS THAT GUARDRAIL IS TO BE LAPPED FOR APPROACHING TRAFFIC ON A BRIDGE WITH 2-WAY TRAFFIC.
PLAN
SECTION A–A
SECTION B–B
"W" BEAM TERMINAL CONNECTOR
"W" BEAM BACKUP PLATE
FASTENER DETAILS
DETAIL OF BRIDGE END TERMINAL OFFSET BLOCK
TRAFFIC
CONCRETE BRIDGE RAIL
BRIDGE END TERMINAL OFFSET BLOCK
BACKUP PLATE UNDER GUARDRAIL
7'-6" CURB TRANSITION
CURB LINE
FACE OF GUARDRAIL
GUARDRAIL SPLICE
PAY LIMITS FOR TYPE "H" BRIDGE END SECTION
25'-0"
10'-5¼"
STANDARD "W" BEAM INSTALLATION (SEE GENERAL NOTE 1.)
6'-3"
3'-1½"
POST 1
POST 2
POST 3
POST 4
POST 5
POST 6
10" X 10" WOOD POST, 6'-8" LONG, WITH 6" X 12" WOOD BLOCKOUT, 14" LONG, FOR POSTS 1 THRU 3.
6" X 8" WOOD POST, 6'-0" LONG, WITH 6" X 12" WOOD BLOCKOUT, 14" LONG, FOR POSTS 4 AND 5.
GUARDRAIL BOLT "D" WITH PLAIN ROUND WASHER, UNDER NUT AND RECTANGULAR GUARDRAIL PLATE WASHER UNDER HEAD FOR POSTS 4 AND 5.
GUARDRAIL BOLT "E" WITH PLAIN ROUND WASHER "F" UNDER NUT AND RECTANGULAR GUARDRAIL PLATE WASHER UNDER HEAD FOR POSTS 1 THRU 3.
"W" BEAM TERMINAL CONNECTOR. TERMINAL CONNECTOR IS FASTENED TO "W" BEAM GUARDRAIL SECTION WITH EIGHT (8) EACH, GUARDRAIL BOLT "A" AND RECESSED NUT.
CONCRETE BRIDGE RAIL
GUARDRAIL ANCHOR ASSEMBLY 'GA1' (INSTALLED DURING BRIDGE CONSTRUCTION)
HSS HEX NUT AND BOLT "C", 10" LONG, TWO (2) REQUIRED.
BEVELED WASHER, TWO (2) REQUIRED.
HARDENED ROUND WASHER "E", UNDER HEAD, TWO (2) REQUIRED.
"W" BEAM BACKUP PLATE
"W" BEAM GUARDRAIL
GUARDRAIL BOLT "B" AND RECESSED NUT WITH RECTANGULAR GUARDRAIL PLATE WASHER UNDER HEAD.
BRIDGE END TERMINAL OFFSET BLOCK
CURB FACE
RIDING SURFACE OF BRIDGE DECK
(SEE GENERAL NOTE 2.)
HARDENED ROUND WASHER "E", UNDER HEAD, FOUR (4) REQUIRED.
"W" BEAM TERMINAL CONNECTOR
EIGHT (8) EACH, GUARDRAIL BOLT "A" AND RECESSED NUT.
HSS HEX NUT AND BOLT "C", 10" LONG, FOUR (4) REQUIRED.
BEVELED WASHER, FOUR (4) REQUIRED.
9:1 SLOPE
BEVELED WASHER
RECTANGULAR GUARDRAIL PLATE WASHER
HARDENED ROUND WASHER "E"
HIGH-STRENGTH STRUCTURAL HEX NUT AND BOLT "C" (ASTM A 325)
NOTE: THE "W" BEAM BACK-UP PLATE IS USED UNDER THE "W" BEAM RAIL SECTION WHERE INDICATED ON THIS SHEET. THE CROSS-SECTIONAL DIMENSIONS OF THIS PART ARE IDENTICAL TO THOSE OF THE STANDARD "W" BEAM RAIL SECTION.
NOTE: THE "W" BEAM TERMINAL CONNECTOR IS USED WITH THE TYPE "H" BRIDGE END SECTION. THE CROSS-SECTIONAL DIMENSIONS OF THIS PART ARE IDENTICAL TO THOSE OF THE STANDARD "W" BEAM SECTION (AASHTO M 180 CLASS B, TYPE II).
FRONT FACE
SIDE

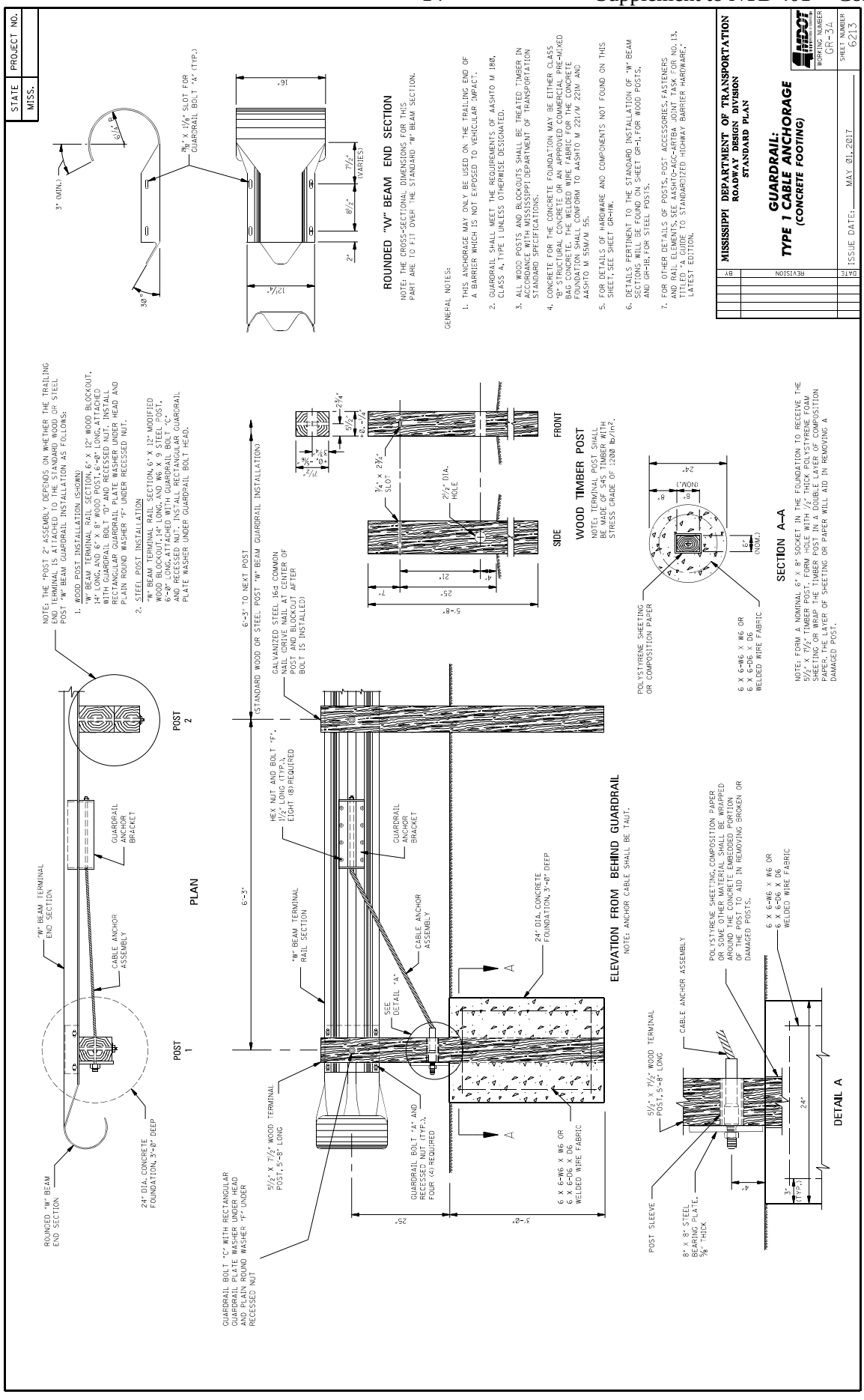

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
BRIDGE END SECTION
TYPE "H"
(STEEL POSTS)
WORKING NUMBER GR-2D
SHEET NUMBER 6208
ISSUE DATE: MAY 01, 2017
BY REVISION DATE
GENERAL NOTES:
1. ALL NOTES AND DETAILS PERTAINING TO NORMAL "W" BEAM GUARDRAIL INSTALLATION NOT SPECIFICALLY MODIFIED ON THIS SHEET WILL BE FOUND ON SHEET GR-1B (STEEL POSTS).
2. THE HEIGHT OF RAIL AT THE BRIDGE END IS 21" AND WILL BE TRANSITIONED TO 25" AT POST 5.
3. GUARDRAIL ELEMENTS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC. THE ONLY EXCEPTION NOTED IS THAT GUARDRAIL IS TO BE LAPPED FOR APPROACHING TRAFFIC ON A BRIDGE WITH 2-WAY TRAFFIC.
PLAN
SECTION A–A
SECTION B–B
"W" BEAM TERMINAL CONNECTOR
"W" BEAM BACKUP PLATE
FASTENER DETAILS
DETAIL OF BRIDGE END TERMINAL OFFSET BLOCK
TRAFFIC
PAY LIMITS FOR TYPE "H" BRIDGE END SECTION
STANDARD "W" BEAM INSTALLATION (SEE GENERAL NOTE 1.)
CONCRETE BRIDGE RAIL
GUARDRAIL SPLICE
FACE OF GUARDRAIL
BRIDGE END TERMINAL OFFSET BLOCK
BACKUP PLATE UNDER GUARDRAIL
7'-6" CURB TRANSITION
CURB LINE
GUARDRAIL BOLT "C" WITH RECESSED NUT AND RECTANGULAR GUARDRAIL WASHER PLATE UNDER HEAD FOR POSTS 1 THRU 5.
24" X 12" STEEL SOIL BEARING PLATE, 1/4" THICK, WELDED TO POSTS 1 THRU 3. WELD TOP, BOTTOM, AND THREE 3" WELDS ON EACH SIDE.
W6 X 9 STEEL POST, 6'-0" LONG, WITH 6" X 12" MODIFIED WOOD BLOCKOUT, 14" LONG, FOR POSTS 1 THRU 5.
POST 1
POST 2
POST 3
POST 4
POST 5
POST 6
HARDENED ROUND WASHER "E", UNDER HEAD, FOUR (4) REQUIRED.
"W" BEAM GUARDRAIL
"W" BEAM TERMINAL CONNECTOR
EIGHT (8) EACH, GUARDRAIL BOLT "A" AND RECESSED NUT.
GUARDRAIL ANCHOR ASSEMBLY "GA2" (INSTALLED DURING BRIDGE CONSTRUCTION)
HSS HEX NUT AND BOLT "C", 10" LONG, FOUR (4) REQUIRED.
BEVELED WASHER, FOUR (4) REQUIRED.
(SEE GENERAL NOTE 2.)
CURB FACE
RIDING SURFACE OF BRIDGE DECK
HARDENED ROUND WASHER "E", UNDER HEAD, TWO (2) REQUIRED.
"W" BEAM BACKUP PLATE
GUARDRAIL BOLT "B" AND RECESSED NUT WITH RECTANGULAR GUARDRAIL PLATE WASHER UNDER HEAD.
BEVELED WASHER, TWO (2) REQUIRED.
HSS HEX NUT AND BOLT "C", 10" LONG, TWO (2) REQUIRED.
"W" BEAM TERMINAL CONNECTOR IS FASTENED TO "W" BEAM GUARDRAIL SECTION WITH EIGHT (8) EACH, GUARDRAIL BOLT "A" AND RECESSED NUT.
NOTE: THE "W" BEAM BACK-UP PLATE IS USED UNDER THE "W" BEAM RAIL SECTION WHERE INDICATED ON THIS SHEET. THE CROSS-SECTIONAL DIMENSIONS OF THIS PART ARE IDENTICAL TO THOSE OF THE STANDARD "W" BEAM RAIL SECTION.
NOTE: THE "W" BEAM TERMINAL CONNECTOR IS USED WITH THE TYPE "H" BRIDGE END SECTION. THE CROSS-SECTIONAL DIMENSIONS OF THIS PART ARE IDENTICAL TO THOSE OF THE STANDARD "W" BEAM SECTION (AASHTO M 180 CLASS B, TYPE II).
ELEVATION
PLAN
FRONT FACE
SIDE
HIGH-STRENGTH STRUCTURAL HEX NUT AND BOLT "C" (ASTM A 325)
HARDENED ROUND WASHER "E"
RECTANGULAR GUARDRAIL PLATE WASHER
BEVELED WASHER

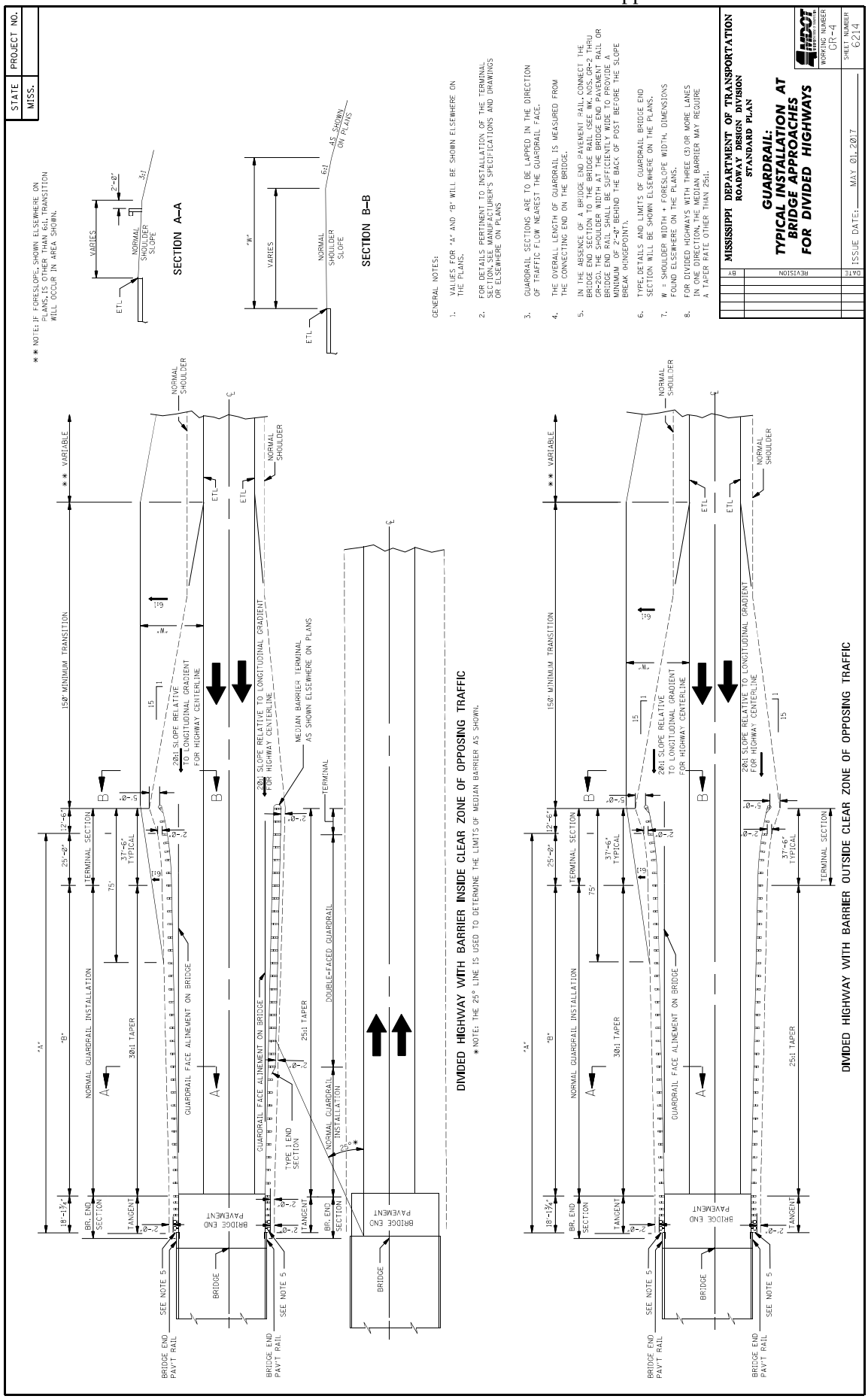

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
BRIDGE END SECTION
TYPE "G" MODIFIED
WORKING NUMBER GR-2E
SHEET NUMBER 6209
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
GENERAL NOTES:
1. ALL NOTES AND DETAILS PERTAINING TO NORMAL "W" BEAM GUARDRAIL INSTALLATION NOT SPECIFICALLY MODIFIED ON THIS SHEET WILL BE FOUND ON EITHER SHEET GR-1 (WOOD POSTS) OR GR-1B (STEEL POSTS).
2. INSTALLATION DETAILS FOR BRIDGE END SECTION GUARDRAIL POSTS WILL BE FOUND ON EITHER SHEET GR-2C (WOOD POSTS) OR GR-2D (STEEL POSTS).
3. THE HEIGHT OF RAIL AT THE BRIDGE END IS 21" AND WILL BE TRANSITIONED TO 25" AT POST 5.
4. GUARDRAIL ELEMENTS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC. THE ONLY EXCEPTION NOTED IS THAT GUARDRAIL IS TO BE LAPPED FOR APPROACHING TRAFFIC ON A BRIDGE WITH 2-WAY TRAFFIC.
PLAN
FACE ELEVATION
GUARDRAIL CONNECTION DETAILS
SECTION
DETAIL OF PLATE "Y"
"W" BEAM TERMINAL CONNECTOR
ELEVATION
PLAN
NOTE: THE "W" BEAM TERMINAL CONNECTOR IS USED WITH THE TYPE "G" MODIFIED BRIDGE END SECTION. THE CROSS-SECTIONAL DIMENSIONS OF THIS PART ARE IDENTICAL TO THE STANDARD "W" BEAM SECTION (AASHTO M 180 CLASS B, TYPE II).
SECTION A–A
SECTION B–B
BEVELED WASHER
RECTANGULAR GUARDRAIL PLATE WASHER
HARDENED ROUND WASHER "E"
HIGH-STRENGTH STRUCTURAL HEX NUT AND BOLT "C" (ASTM A 325)
FASTENER DETAILS
PAY LIMITS FOR TYPE "G" MODIFIED BRIDGE END SECTION
STANDARD "W" BEAM INSTALLATION (SEE GENERAL NOTE 1.)
CONCRETE BRIDGE RAIL
CENTERLINE OF POST HOLES IN "W" BEAM GUARDRAIL (SEE GENERAL NOTE 2.)
FACE OF GUARDRAIL
GUARDRAIL SPLICE
SEE GUARDRAIL CONNECTION DETAILS
CURB LINE
7'-6" CURB TRANSITION
"W" BEAM TERMINAL CONNECTOR, TERMINAL CONNECTOR IS FASTENED TO "W" BEAM GUARDRAIL SECTION WITH EIGHT (8) EACH, GUARDRAIL BOLT "A" AND RECESSED NUT.
TRAFFIC
POST 1
POST 2
POST 3
POST 4
POST 5
POST 6
GUARDRAIL ANCHOR ASSEMBLY (INSTALLED DURING BRIDGE CONSTRUCTION)
HSS HEX NUT AND BOLT "C", 10" LONG, FOUR (4) REQUIRED.
HARDENED ROUND WASHER "E", ONE (1) UNDER HEAD AND ONE (1) UNDER NUT, EIGHT (8) REQUIRED.
"W" BEAM GUARDRAIL
PLATE "Y"
BOTH SIDES
TWO (2) EACH, GUARDRAIL BOLT "A" AND RECESSED NUT.
12" X 4 7/8" X 5/8" PLATE
12" X 4 7/8" X 5/8" PLATE, TWO (2) REQUIRED, TOP AND BOTTOM.
OPTIONAL 3/4" X 2 1/2" SLOTTED HOLE IN "W" SECTION (BOLT NOT REQUIRED).
"W" BEAM SECTION, 16' LONG (AASHTO M 180 CLASS B, TYPE II)
5/8" X 1 1/8" SLOTTED HOLES IN "W" BEAM SECTION (TYP.)
THESE SLOTS ARE USED TO FASTEN GUARDRAIL.
1" HOLES IN PLATE "Y" (TYP.)
3/4" X 2 1/2" SLOTTED HOLE (BOLT NOT REQUIRED)
1" DIA. HOLES (TYP.)
3/4" X 1 1/8" SLOT FOR GUARDRAIL BOLT "A" (TYP.)
CONCRETE BRIDGE RAIL
GUARDRAIL ANCHOR ASSEMBLY (INSTALLED DURING BRIDGE CONSTRUCTION)
HSS HEX NUT AND BOLT "C", 10" LONG, FOUR (4) REQUIRED.
HARDENED ROUND WASHER "E", ONE (1) UNDER HEAD AND ONE (1) UNDER NUT, EIGHT (8) REQUIRED.
"W" BEAM SECTION, 16' LONG (AASHTO M 180 CLASS B, TYPE II)
"W" BEAM GUARDRAIL
TWO (2) EACH, GUARDRAIL BOLT "A" AND RECESSED NUT.
CURB FACE
RIDING SURFACE OF BRIDGE DECK
(SEE GENERAL NOTE 3.)
HARDENED ROUND WASHER "E", UNDER HEAD, FOUR (4) REQUIRED.
EIGHT (8) EACH, GUARDRAIL BOLT "A" AND RECESSED NUT.
"W" BEAM TERMINAL CONNECTOR
BEVELED WASHER, FOUR (4) REQUIRED.
9:1 SLOPE
1" X 1 1/8" SLOT
3/4" - 9 UNC THREAD PITCH
A5 SPECIFIED

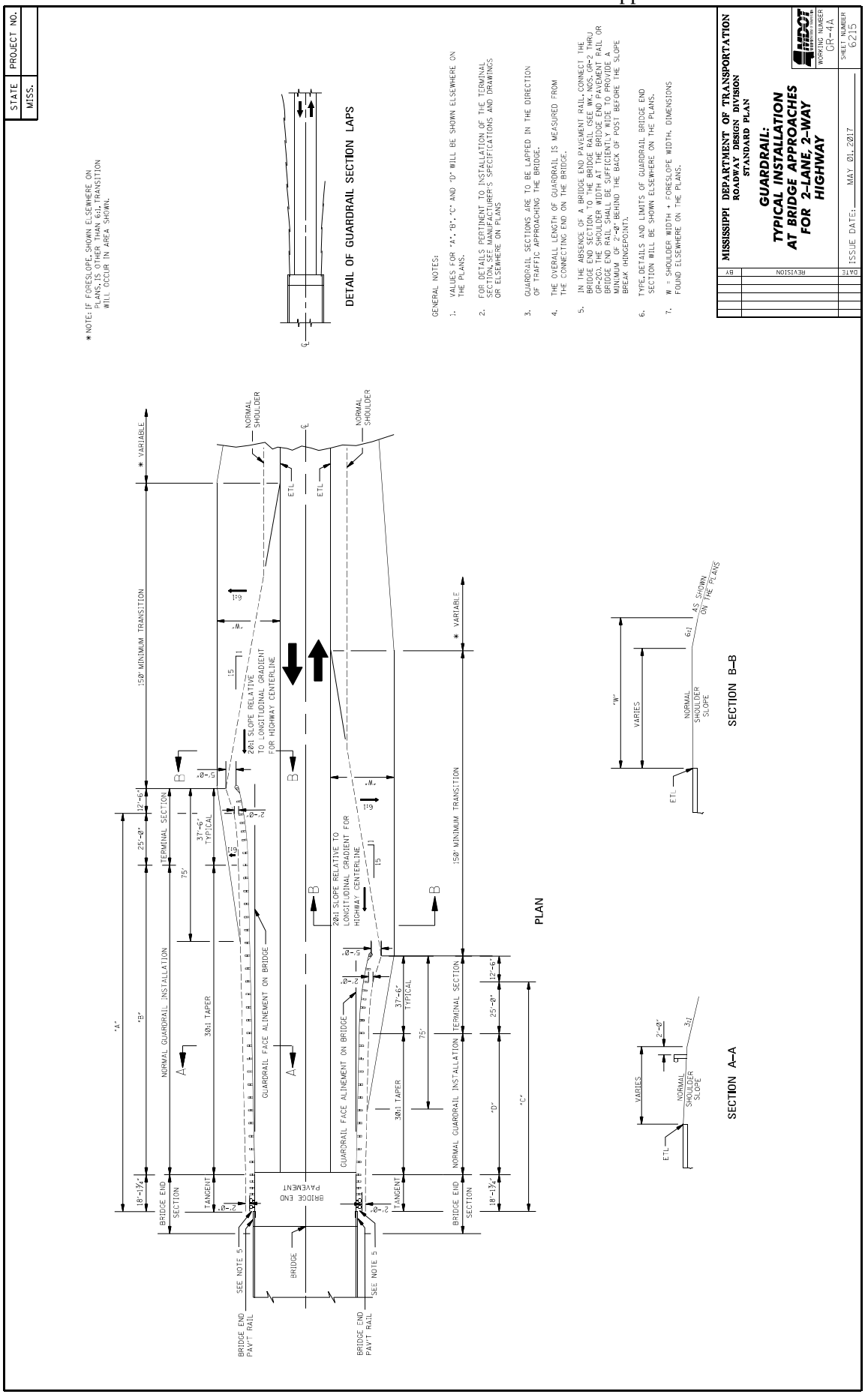

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
BRIDGE END SECTION
TYPE "I"
(WOOD POSTS)
(NEW CONSTRUCTION)
WORKING NUMBER GR-2F
SHEET NUMBER 6210
ISSUE DATE: MAY 01, 2017
REVISION
BY
DATE
STANDARD "W" BEAM GUARDRAIL INSTALLATION (SEE SHEET GR-1)
PAY LIMITS FOR TYPE "I" BRIDGE END SECTION
PLAN
ELEVATION FROM ℄ ROADWAY
SECTION A–A
*NOTE: UNLESS SPECIFIED OTHERWISE ON THE PLANS.
FASTENER DETAILS
HIGH-STRENGTH STRUCTURAL HEX NUT AND BOLT "C"
PLAIN ROUND WASHER "F"
RECTANGULAR GUARDRAIL PLATE WASHER
THRIE–BEAM TERMINAL CONNECTOR
GUARDRAIL SPLICE DETAIL (POST 7)
DETAILS OF THRIE–BEAM POST AND BLOCKOUT (POST 1 THRU POST 8)
GENERAL NOTES:
1. THIS GUARDRAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO A GUARDRAIL ANCHOR ASSEMBLY CAST INTO A VERTICAL CONCRETE SHAPE AS SHOWN ON SHEETS BER-1 & BER-2. THIS GUARDRAIL TRANSITION SHOULD NOT BE MOUNTED DIRECTLY TO A CONCRETE SAFETY SHAPE.
2. SEE RAILING DETAILS IN BRIDGE DRAWINGS FOR OTHER DETAILS.
3. GUARDRAIL SHALL MEET THE REQUIREMENTS OF AASHTO M 180, CLASS A, TYPE I UNLESS OTHERWISE DESIGNATED.
4. THE TYPE "I" TRANSITION IS USED ON BOTH LEFT AND RIGHT SIDES OF EACH BRIDGE APPROACH WITH 2-WAY TRAFFIC AND THE GUARDRAIL SECTIONS SHALL BE LAPPED IN THE DIRECTION OF THE APPROACHING TRAFFIC.
5. ALL WOOD POSTS AND BLOCKOUTS SHALL BE TREATED TIMBER IN ACCORDANCE WITH MISSISSIPPI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
6. FOR FASTENER DETAILS NOT FOUND ON THIS SHEET, SEE SHEET GR-1.
7. DETAILS PERTINENT TO THE STANDARD INSTALLATION OF "W" AND THRIE-BEAM SECTIONS NOT SPECIFICALLY MODIFIED ON THIS SHEET WILL BE FOUND ON SHEETS GR-1 AND GR-1A, RESPECTIVELY.
8. FOR OTHER DETAILS OF POSTS, POST ACCESSORIES, FASTENERS & ALL LUMBER NOT SPECIFICALLY DETAILED ON THIS SHEET, FORGE NO. 13, TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE", LATEST EDITION.
9. THE TOP OF THE RAIL AT POST 7 IS AT 32" AND WILL BE TRANSITIONED TO THE NORMAL W-BEAM TOP OF RAIL HEIGHT OF 31.125" AT POST 10.
NOTES:
1. HOLE DETAILS ARE REQUIRED ON ALL WOOD POSTS AND BLOCKOUTS.
2. WOOD POSTS AND BLOCKOUTS ARE FABRICATED FROM TREATED TIMBER UNLESS SPECIFIED OTHERWISE ON THE PLANS.
3. ALL HOLES IN BOTH POSTS AND BLOCKOUTS ARE 3/4"IN DIAMETER.
NOTES:
1. THE THRIE-BEAM TERMINAL CONNECTOR IS TO BE AASHTO M 180 CORRUGATED SHEET STEEL, CLASS B, TYPE I.
2. ALTERNATIVELY, THE SPLICE SLOTS CAN BE ORIENTED PARALLEL TO THE LONGITUDINAL AXIS OF THE TERMINAL CONNECTOR, HOWEVER, THE 50° SLOT VERSION IS EASIER TO INSTALL WHERE SEVERAL GUARDRAIL SECTIONS ARE NESTED TOGETHER.

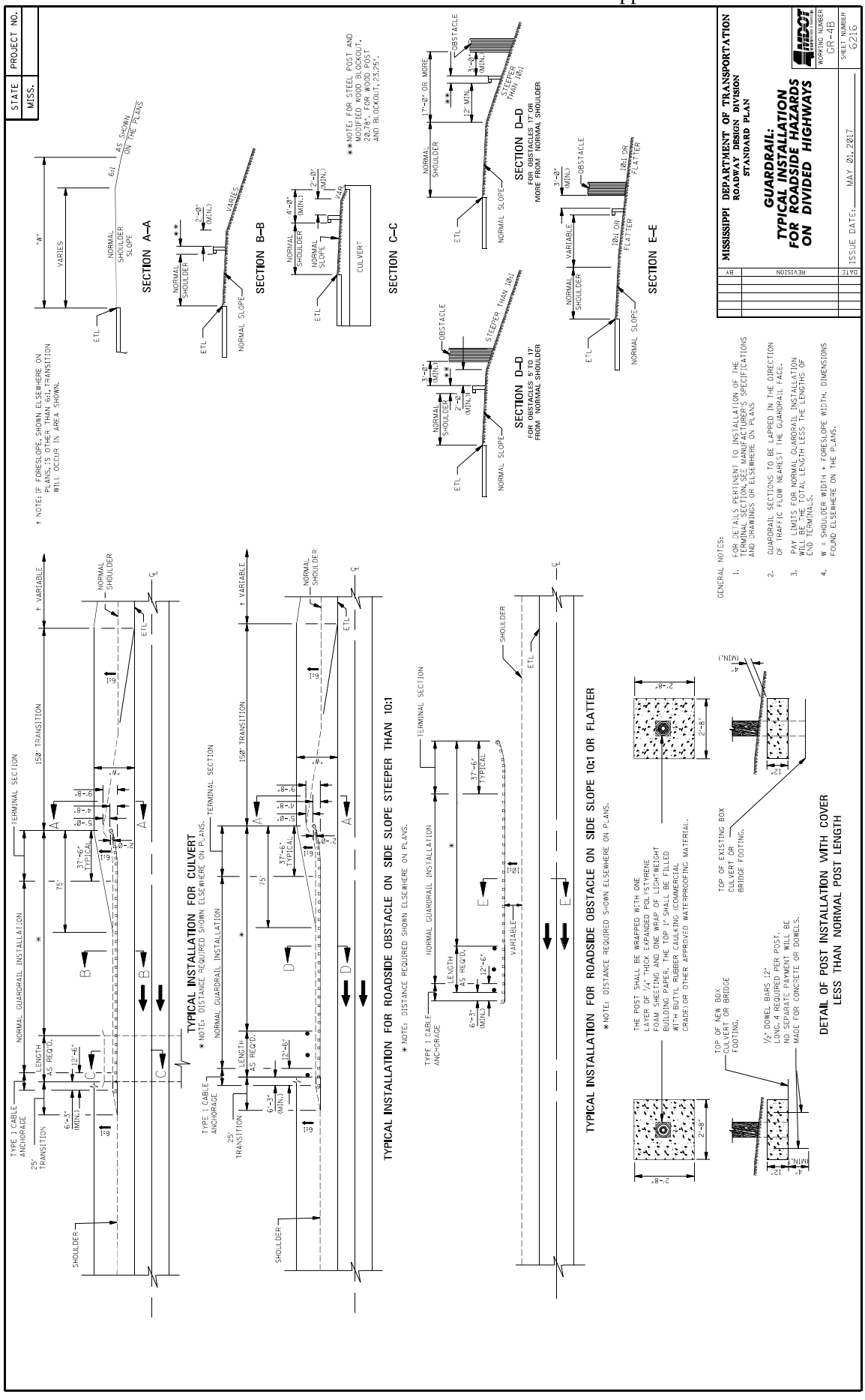

STATE
MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
BRIDGE END SECTION
TYPE "1"
(STEEL POSTS)
(NEW CONSTRUCTION)
WORKING NUMBER GR-26
SHEET NUMBER 6211
ISSUE DATE: MAY 01, 2017
REVISION
BY
DATE
PLAN
ELEVATION FROM ℄ ROADWAY
NOTE: BACKUP PLATES ARE NOT USED IN THIS TRANSITION.
GENERAL NOTES:
1. THIS GUARDRAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO A GUARDRAIL ANCHOR ASSEMBLY CAST INTO A VERTICAL CONCRETE SHAPE, AS SHOWN ON SHEET GR-1A. A SEPARATE GUARDRAIL TRANSITION SHOULD NOT BE MOUNTED DIRECTLY TO A CONCRETE SAFETY SHAPE.
2. SEE RAILING DETAILS IN BRIDGE DRAWINGS FOR OTHER DETAILS.
3. GUARDRAIL SHALL MEET THE REQUIREMENTS OF AASHTO M 180, CLASS A, TYPE 1 UNLESS OTHERWISE DESIGNATED.
4. THE TYPE "1" TRANSITION IS USED ON BOTH LEFT AND RIGHT SIDES OF EACH BRIDGE APPROACH WITH 2-WAY TRAFFIC AND THE GUARDRAIL SECTIONS SHALL BE LAPPED IN THE DIRECTION OF APPROACHING TRAFFIC.
5. POSTS SHALL CONFORM TO AASHTO M 270/M 270 (ASTM A 709/A 709M) GRADE 250 STEEL UNLESS CORROSION RESISTANT STEEL IS REQUIRED IN WHICH CASE GRADE 345W STEEL SHALL BE USED. THE STRUCTURAL W6 X 9 DIMENSIONS ARE DEFINED IN AASHTO M 270/M 270 (ASTM A 709/A 709M). ALL STEEL SHALL BE ZINC-COATED PER AASHTO M 111/ASTM A 123/AFTER CUTTING, DRILLING OR PUNCHING. CORROSION RESISTANT STEEL SHOULD NOT BE ZINC COATED, PAINTED OR OTHERWISE TREATED. GUARDRAIL IS EXEMPT FROM THE FRACTURE-CRITICAL TOUGHNESS IN AASHTO M 270/A 270 W.
6. FOR FASTENER DETAILS NOT FOUND ON THIS SHEET, SEE SHEET GR-1B.
7. DETAILS PERTINENT TO THE STANDARD INSTALLATION OF "W" AND THRIE-BEAM SECTIONS NOT SPECIFICALLY MODIFIED ON THIS SHEET WILL BE FOUND ON SHEETS GR-1B AND GR-1C, RESPECTIVELY.
8. FOR OTHER DETAILS OF POSTS, POST ACCESSORIES, FASTENERS & RAIL ELEMENTS, SEE AASHTO-AGC-ARTBA JOINT TASK FORCE NO.13 GUIDE TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE", LATEST EDITION.
9. ALL WOOD BLOCKOUTS SHALL BE TREATED TIMBER IN ACCORDANCE WITH MISSISSIPPI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
10. FOR DETAIL OF NOTCH IN MODIFIED WOOD BLOCKOUTS, SEE SHEET GR-1B.
FASTENER DETAILS
HIGH-STRENGTH STRUCTURAL HEX NUT AND BOLT "C"
PLAIN ROUND WASHER "F"
RECTANGULAR GUARDRAIL PLATE WASHER
SECTION A–A
GUARDRAIL SPLICE DETAIL (POST 7)
DETAILS OF THRIE-BEAM POST AND BLOCKOUT (POST 1 THRU POST 6)
THRIE-BEAM TERMINAL CONNECTOR
NOTES:
1. THE THRIE-BEAM TERMINAL CONNECTOR IS TO BE AASHTO M 180 CORRUGATED SHEET STEEL, CLASS B, TYPE 1.
2. ALTERNATIVELY, THE SPLICE SLOTS CAN BE ORIENTED PARALLEL TO THE LONGITUDINAL AXIS OF THE TERMINAL CONNECTOR; HOWEVER, THE 50° SLOT VERSION IS EASIER TO INSTALL WHERE SEVERAL GUARDRAIL SECTIONS ARE NESTED TOGETHER.

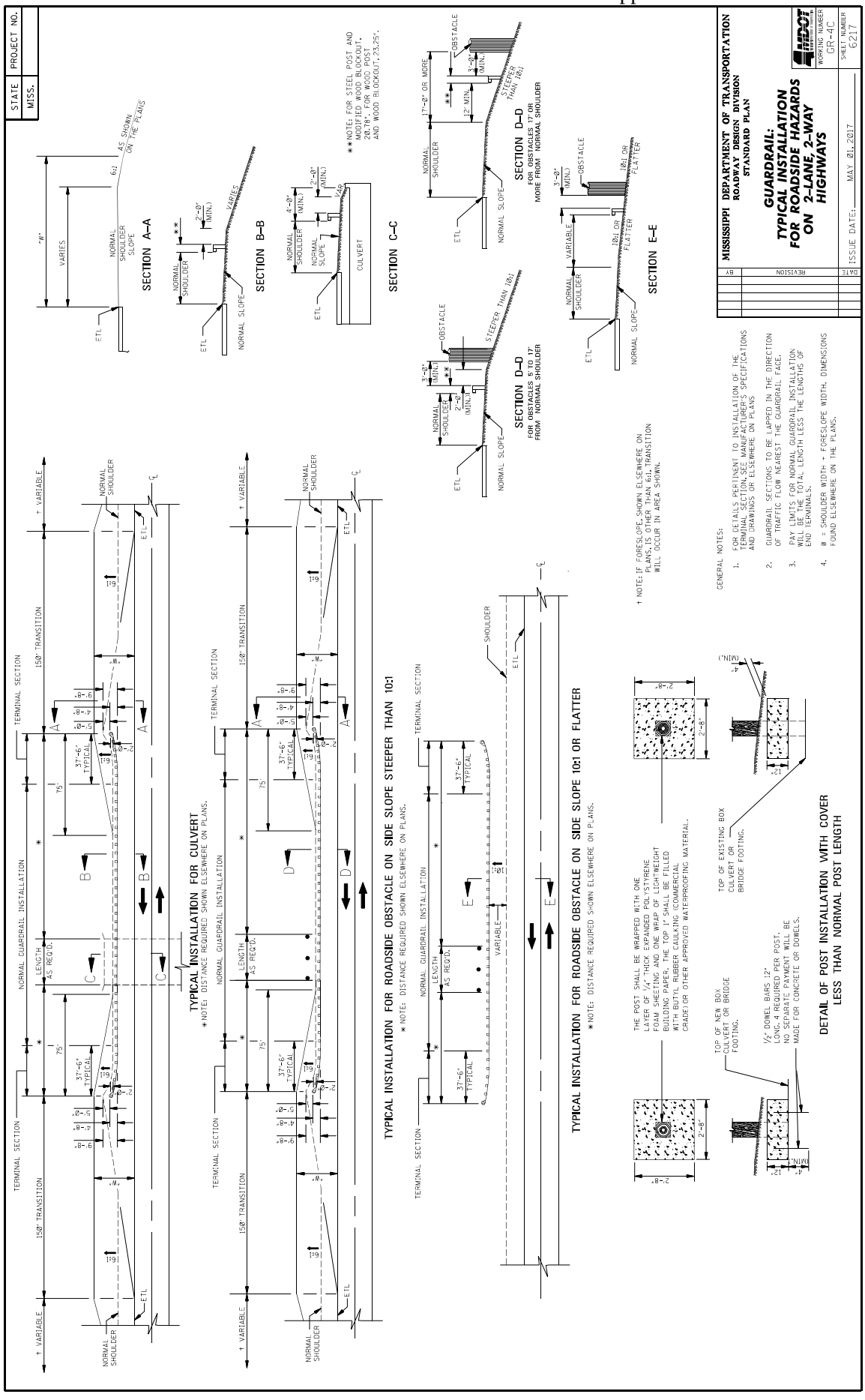

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
TYPE 1 CABLE ANCHORAGE
(FOUNDATION TUBE)
WORKING NUMBER GR-3
SHEET NUMBER 6212
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
GENERAL NOTES:
1. THIS ANCHORAGE MAY ONLY BE USED ON THE TRAILING END OF A BARRIER WHICH IS NOT EXPOSED TO VEHICULAR IMPACT.
2. GUARDRAIL SHALL MEET THE REQUIREMENTS OF AASHTO M 180, CLASS A, TYPE I UNLESS OTHERWISE DESIGNATED.
3. ALL WOOD POSTS AND BLOCKOUTS SHALL BE TREATED TIMBER IN ACCORDANCE WITH MISSISSIPPI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
4. FOR DETAILS OF HARDWARE AND COMPONENTS NOT FOUND ON THIS SHEET, SEE SHEET GR-HW.
5. DETAILS PERTINENT TO THE STANDARD INSTALLATION OF "W" BEAM SECTIONS WILL BE FOUND ON SHEET GR-1, FOR WOOD POSTS, AND GR-1B, FOR STEEL POSTS.
6. FOR OTHER DETAILS OF POSTS, POST ACCESSORIES, FASTENERS AND RAIL ELEMENTS, SEE AASHTO-AGC-ARTBA JOINT TASK FOR NO. 13, TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE," LATEST EDITION.
ROUNDED "W" BEAM END SECTION
NOTE: THE CROSS-SECTIONAL DIMENSIONS FOR THIS PART ARE TO FIT OVER THE STANDARD "W" BEAM SECTION.
3" (MIN.)
6 1/4" R
30°
25/32"
2"
8 1/2"
7 1/2" (VARIES)
13/16" X 1 1/4" SLOT FOR GUARDRAIL BOLT "A" (TYP.)
NOTE: THE 'POST 2' ASSEMBLY DEPENDS ON WHETHER THE TRAILING END TERMINAL IS ATTACHED TO THE STANDARD WOOD OR STEEL POST "W" BEAM GUARDRAIL INSTALLATION AS FOLLOWS:
1. WOOD POST INSTALLATION (SHOWN)
"W" BEAM TERMINAL RAIL SECTION, 6" X 12" WOOD BLOCKOUT, 14" LONG, AND 6" X 8" WOOD POST, 6'-0" LONG, ATTACHED WITH GUARDRAIL BOLT "C" AND RECESSED NUT. INSTALL RECTANGULAR GUARDRAIL PLATE WASHER UNDER HEAD AND PLAIN ROUND WASHER "F" UNDER RECESSED NUT.
2. STEEL POST INSTALLATION
"W" BEAM TERMINAL RAIL SECTION, 6" X 12" MODIFIED WOOD BLOCKOUT, 14" LONG, AND WF 8 X 31 STEEL POST, 6'-0" LONG, ATTACHED WITH GUARDRAIL BOLT "C" AND RECESSED NUT. INSTALL RECTANGULAR GUARDRAIL PLATE WASHER UNDER GUARDRAIL BOLT HEAD.
ROUNDED "W" BEAM END SECTION
"W" BEAM TERMINAL END SECTION
CABLE ANCHOR ASSEMBLY
GUARDRAIL ANCHOR BRACKET
24" X 18" STEEL FOUNDATION TUBE SOIL PLATE, 1/4" THICK
POST 1
POST 2
PLAN
6'-3"
6'-3" TO NEXT POST (STANDARD WOOD OR STEEL POST "W" BEAM GUARDRAIL INSTALLATION)
GALVANIZED STEEL 16d COMMON NAIL (DRIVE NAIL AT CENTER OF POST AND BLOCKOUT AFTER POST IS INSTALLED)
HEX NUT AND BOLT "F", 1/2" LONG (TYP.) EIGHT (8) REQUIRED
GUARDRAIL ANCHOR BRACKET
"W" BEAM TERMINAL RAIL SECTION
CABLE ANCHOR ASSEMBLY
24" X 18" STEEL FOUNDATION TUBE SOIL PLATE, 1/4" THICK
ELEVATION FROM BEHIND GUARDRAIL
NOTE: ANCHOR CABLE SHALL BE TAUT.
GUARDRAIL BOLT "C" WITH RECTANGULAR GUARDRAIL PLATE WASHER UNDER HEAD AND PLAIN ROUND WASHER "F" UNDER RECESSED NUT
5 1/2" X 7 1/2" WOOD TERMINAL POST, 4'-6 1/2" LONG
GUARDRAIL BOLT "A" AND RECESSED NUT (TYP.). FOUR (4) REQUIRED.
SEE DETAIL A
SEE DETAIL B
TSB" X 6'-0" X 3/16" FOUNDATION TUBE, 5'-0" LONG
14 1/4"
25"
5 1/2" X 7 1/2" WOOD TERMINAL POST, 4'-6 1/2" LONG
TSB" X 6' X 3/16" FOUNDATION TUBE, 5'-0" LONG
HEX NUT AND BOLT "F", 8" LONG, WITH PLAIN ROUND WASHER "F" UNDER HEAD AND NUT
24" X 18" STEEL FOUNDATION TUBE SOIL PLATE, 1/4" THICK
DETAIL B
5 1/2" X 7 1/2" WOOD TERMINAL POST, 4'-6 1/2" LONG
CABLE ANCHOR ASSEMBLY
2" (NOM.) 3" (MAX.)
HEX NUT AND BOLT "F", 10" LONG, WITH PLAIN ROUND WASHER "F" UNDER HEAD AND NUT
POST SLEEVE
8" X 8" STEEL BEARING PLATE, 3/8" THICK
TSB" X 6" X 3/16" FOUNDATION TUBE, 5'-0" LONG
4"
2 1/2"
DETAIL A

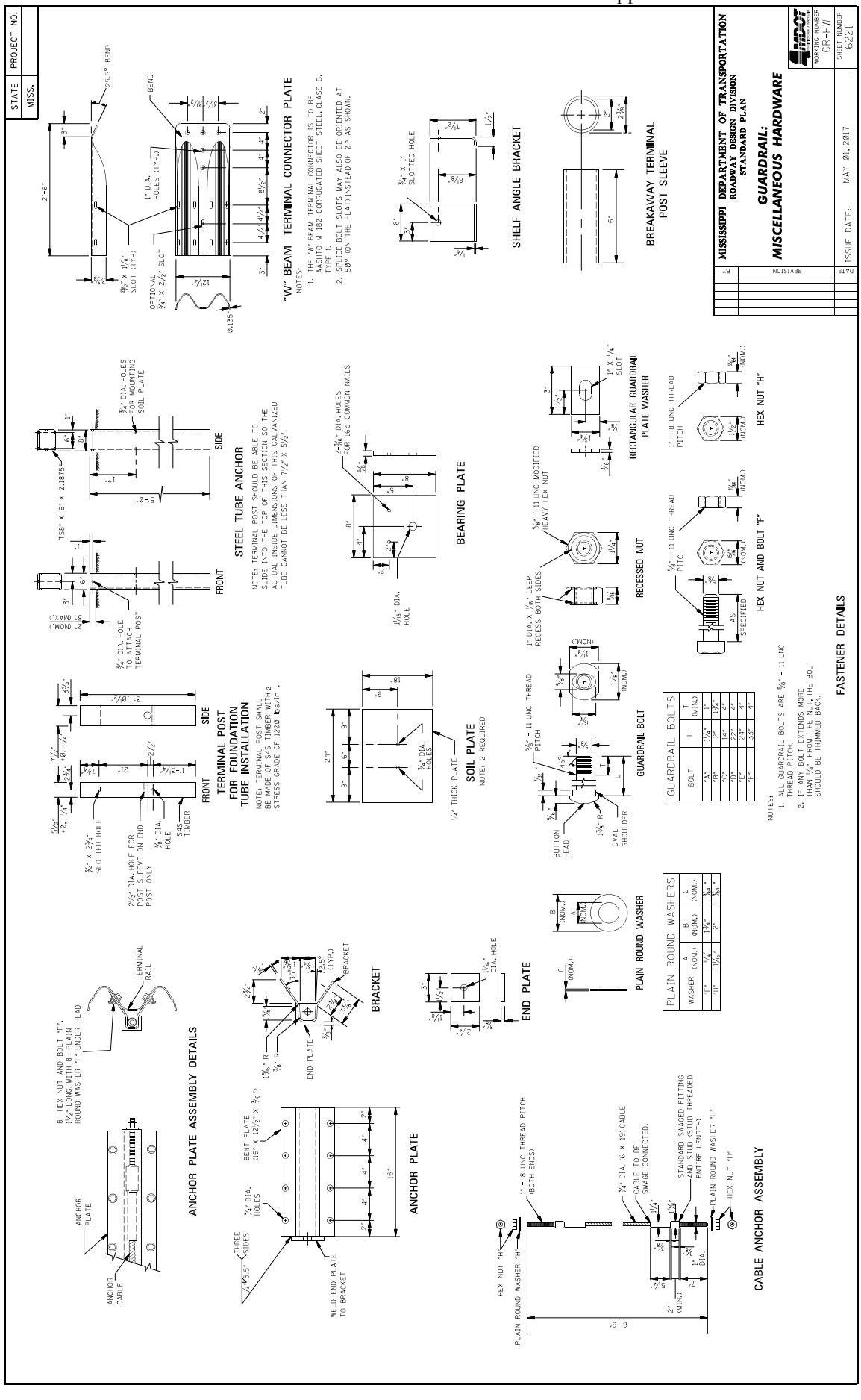

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
TYPE 1 CABLE ANCHORAGE
(CONCRETE FOOTING)
WORKING NUMBER GR-3A
SHEET NUMBER 6213
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
ROUNDED "W" BEAM END SECTION
NOTE: THE CROSS-SECTIONAL DIMENSIONS FOR THIS PART ARE TO FIT OVER THE STANDARD "W" BEAM SECTION.
GENERAL NOTES:
1. THIS ANCHORAGE MAY ONLY BE USED ON THE TRAILING END OF A BARRIER WHICH IS NOT EXPOSED TO VEHICULAR IMPACT.
2. GUARDRAIL SHALL MEET THE REQUIREMENTS OF AASHTO M 180, CLASS A, TYPE I UNLESS OTHERWISE DESIGNATED.
3. ALL WOOD POSTS AND BLOCKOUTS SHALL BE TREATED TIMBER IN ACCORDANCE WITH MISSISSIPPI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
4. CONCRETE FOR THE CONCRETE FOUNDATION MAY BE EITHER CLASS "B" STRUCTURAL CONCRETE OR AN APPROVED COMMERCIAL PRE-MIXED BAG CONCRETE. THE WELDED WIRE FABRIC FOR THE CONCRETE FOUNDATION SHALL CONFORM TO AASHTO M 221/M 221M AND AASHTO M 55M/M 55.
5. FOR DETAILS OF HARDWARE AND COMPONENTS NOT FOUND ON THIS SHEET, SEE SHEET GR-1W.
6. DETAILS PERTINENT TO THE STANDARD INSTALLATION OF "W" BEAM SECTIONS WILL BE FOUND ON SHEET GR-1, FOR WOOD POSTS, AND GR-1B, FOR STEEL POSTS.
7. FOR OTHER DETAILS OF POSTS, POST ACCESSORIES, FASTENERS AND RAIL ELEMENTS, SEE AASHTO-AGC-ARTBA JOINT TASK FOR NO. 13, TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE," LATEST EDITION.
NOTE: THE "POST 2" ASSEMBLY DEPENDS ON WHETHER THE TRAILING END TERMINAL IS ATTACHED TO THE STANDARD WOOD OR STEEL POST "W" BEAM GUARDRAIL INSTALLATION AS FOLLOWS:
1. WOOD POST INSTALLATION (SHOWN)
"W" BEAM TERMINAL RAIL SECTION, 6' X 12" WOOD BLOCKOUT, 14" LONG, AND 6' X 8" WOOD POST, 6'-6" LONG, ATTACHED WITH GUARDRAIL BOLT 'D' AND RECESSED NUT. INSTALL RECTANGULAR GUARDRAIL PLATE WASHER UNDER HEAD AND PLAIN ROUND WASHER "F" UNDER RECESSED NUT.
2. STEEL POST INSTALLATION
"W" BEAM TERMINAL RAIL SECTION, 6' X 12" MODIFIED WOOD BLOCKOUT, 14" LONG, AND W6 X 9 STEEL POST, 6'-6" LONG, ATTACHED WITH GUARDRAIL BOLT 'C' AND RECESSED NUT. INSTALL RECTANGULAR GUARDRAIL PLATE WASHER UNDER GUARDRAIL BOLT HEAD.
"W" BEAM END SECTION
ROUNDED "W" BEAM END SECTION
CABLE ANCHOR ASSEMBLY
GUARDRAIL ANCHOR BRACKET
24" DIA. CONCRETE FOUNDATION, 3'-0" DEEP
POST 1
POST 2
PLAN
6'-3" TO NEXT POST (STANDARD WOOD OR STEEL POST "W" BEAM GUARDRAIL INSTALLATION)
GALVANIZED STEEL 16d COMMON NAIL (DRIVE NAIL AT CENTER OF POST AND LEAVE 1/2" OF NAIL AFTER BOLT IS INSTALLED)
HEX NUT AND BOLT "F", 1 1/2" LONG (TYP.), EIGHT (8) REQUIRED
"W" BEAM TERMINAL RAIL SECTION
GUARDRAIL ANCHOR BRACKET
CABLE ANCHOR ASSEMBLY
SEE DETAIL "A"
24" DIA. CONCRETE FOUNDATION, 3'-0" DEEP
5 1/2" X 7 1/2" WOOD TERMINAL POST, 5'-8" LONG
GUARDRAIL BOLT "A" AND RECESSED NUT (TYP.), FOUR (4) REQUIRED
6 X 6-W6 X W6 OR 6 X 6-D6 X D6 WELDED WIRE FABRIC
GUARDRAIL BOLT "C" WITH RECTANGULAR GUARDRAIL PLATE WASHER UNDER HEAD AND PLAIN ROUND WASHER "F" UNDER RECESSED NUT
ELEVATION FROM BEHIND GUARDRAIL
NOTE: ANCHOR CABLE SHALL BE TAUT.
SIDE
FRONT
WOOD TIMBER POST
NOTE: TERMINAL POST SHALL BE MADE OF S4S TIMBER WITH STRESS GRADE OF 1200 lb/in².
POLYSTYRENE SHEETING OR COMPOSITION PAPER
6 X 6-W6 X W6 OR 6 X 6-D6 X D6 WELDED WIRE FABRIC
SECTION A–A
NOTE: FORM A NOMINAL 6" X 8" SOCKET IN THE FOUNDATION TO RECEIVE THE SIZE X 7½" TIMBER POST. FORM AROUND THE POST WITH POLYSTYRENE SHEETING OR WRAP THE TIMBER POST IN A DOUBLE LAYER OF COMPOSITION PAPER. THE LAYER OF SHEETING OR PAPER WILL AID IN REMOVING A DAMAGED POST.
5½" X 7½" WOOD TERMINAL POST, 5'-8" LONG
CABLE ANCHOR ASSEMBLY
POLYSTYRENE SHEETING, COMPOSITION PAPER OR SOME OTHER MATERIAL SHALL BE WRAPPED AROUND THE CONCRETE EMBEDDED PORTION OF THE POST TO AID IN REMOVING BROKEN OR DAMAGED POSTS.
6 X 6-W6 X W6 OR 6 X 6-D6 X D6 WELDED WIRE FABRIC
POST SLEEVE
8" X 8" STEEL BEARING PLATE, 5/8" THICK
DETAIL A

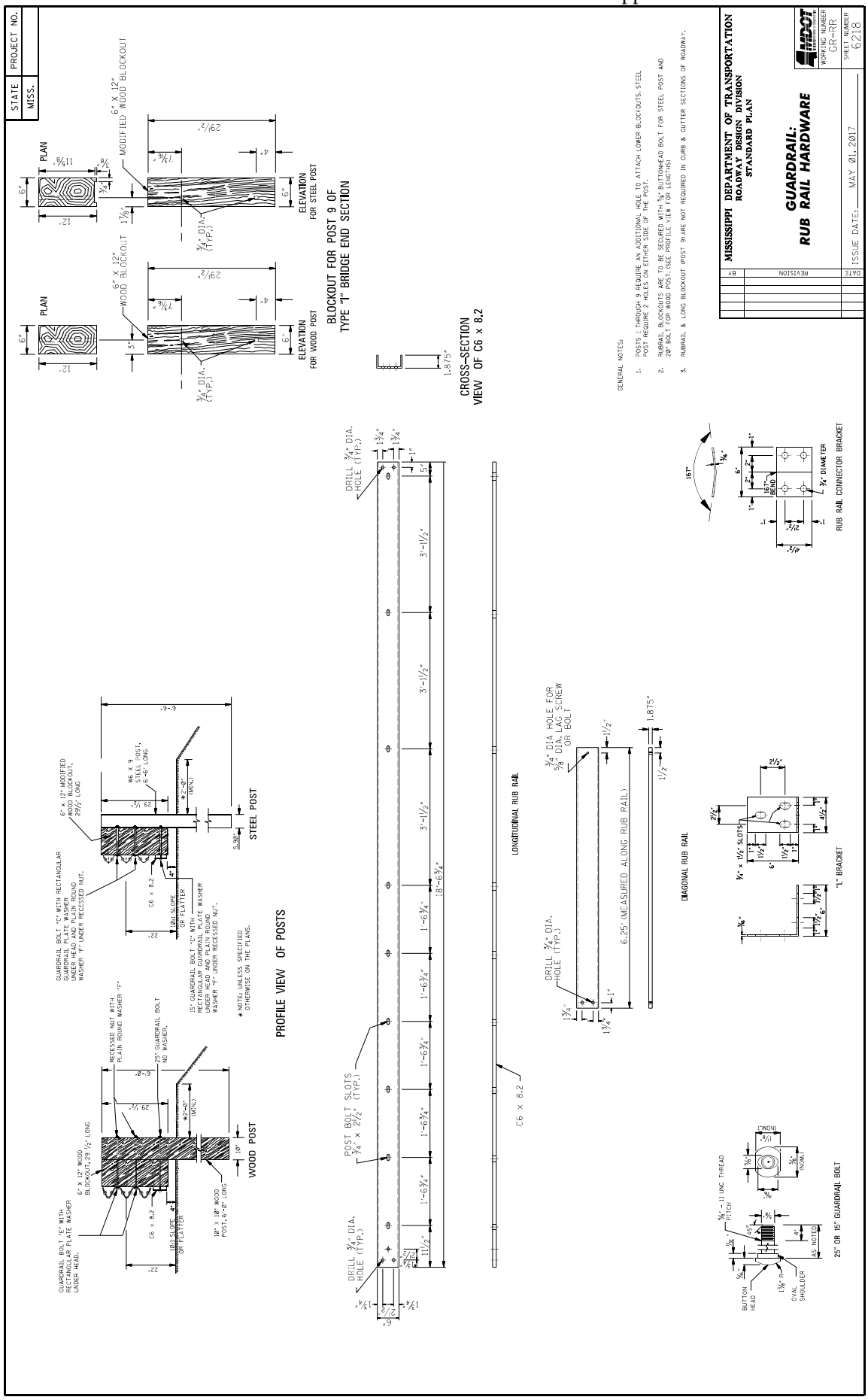

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
TYPICAL INSTALLATION AT BRIDGE APPROACHES FOR DIVIDED HIGHWAYS
WORKING NUMBER GR-4
SHEET NUMBER 6214
ISSUE DATE: MAY 01, 2017
BY
REVISION
DATE
** NOTE: IF FORESLOPE, SHOWN ELSEWHERE ON PLANS, IS OTHER THAN 6:1, TRANSITION WILL OCCUR IN AREA SHOWN.
SECTION A–A
SECTION B–B
GENERAL NOTES:
1. VALUES FOR "A" AND "B" WILL BE SHOWN ELSEWHERE ON THE PLANS.
2. FOR DETAILS PERTINENT TO INSTALLATION OF THE TERMINAL SECTION, SEE MANUFACTURER'S SPECIFICATIONS AND DRAWINGS OR ELSEWHERE ON PLANS
3. GUARDRAIL SECTIONS ARE TO BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW NEAREST THE GUARDRAIL FACE.
4. THE OVERALL LENGTH OF GUARDRAIL IS MEASURED FROM THE CONNECTING END ON THE BRIDGE.
5. IN THE ABSENCE OF A BRIDGE END PAVEMENT RAIL CONNECT THE BRIDGE END SECTION TO THE BRIDGE RAIL SEE MASS CR-2 THRU CR-2G). THE SHOULDER WIDTH AT THE BRIDGE END PAVEMENT RAIL OR BRIDGE END RAIL SHALL BE SUFFICIENTLY WIDE TO PROVIDE A MINIMUM OF 2'-0" BEHIND THE BACK OF POST BEFORE THE SLOPE BREAK (HINGEPOINT).
6. TYPE DETAILS AND LIMITS OF GUARDRAIL BRIDGE END SECTION WILL BE SHOWN ELSEWHERE ON THE PLANS.
7. W = SHOULDER WIDTH + FORESLOPE WIDTH. DIMENSIONS FOUND ELSEWHERE ON THE PLANS.
8. FOR DIVIDED HIGHWAYS WITH THREE (3) OR MORE LANES IN ONE DIRECTION, THE MEDIAN BARRIER MAY REQUIRE A TAPER RATE OTHER THAN 25:1.
DIVIDED HIGHWAY WITH BARRIER INSIDE CLEAR ZONE OF OPPOSING TRAFFIC
* NOTE: THE 25° LINE IS USED TO DETERMINE THE LIMITS OF MEDIAN BARRIER AS SHOWN.
DIVIDED HIGHWAY WITH BARRIER OUTSIDE CLEAR ZONE OF OPPOSING TRAFFIC
150' MINIMUM TRANSITION
** VARIABLE
NORMAL GUARDRAIL INSTALLATION
GUARDRAIL FACE ALINEMENT ON BRIDGE
30:1 TAPER
25:1 TAPER
TERMINAL SECTION
DOUBLE-FACED GUARDRAIL
TYPE 1 END SECTION
BRIDGE END SECTION
TANGENT
BRIDGE END PAV'T RAIL
SEE NOTE 5
BRIDGE
BRIDGE END PAVEMENT
NORMAL SHOULDER
20:1 SLOPE RELATIVE TO LONGITUDINAL GRADIENT FOR HIGHWAY CENTERLINE
MEDIAN BARRIER TERMINAL AS SHOWN ELSEWHERE ON PLANS
ETL
37'-6" TYPICAL
75'
25'-0"
12'-6"
18'-3½"

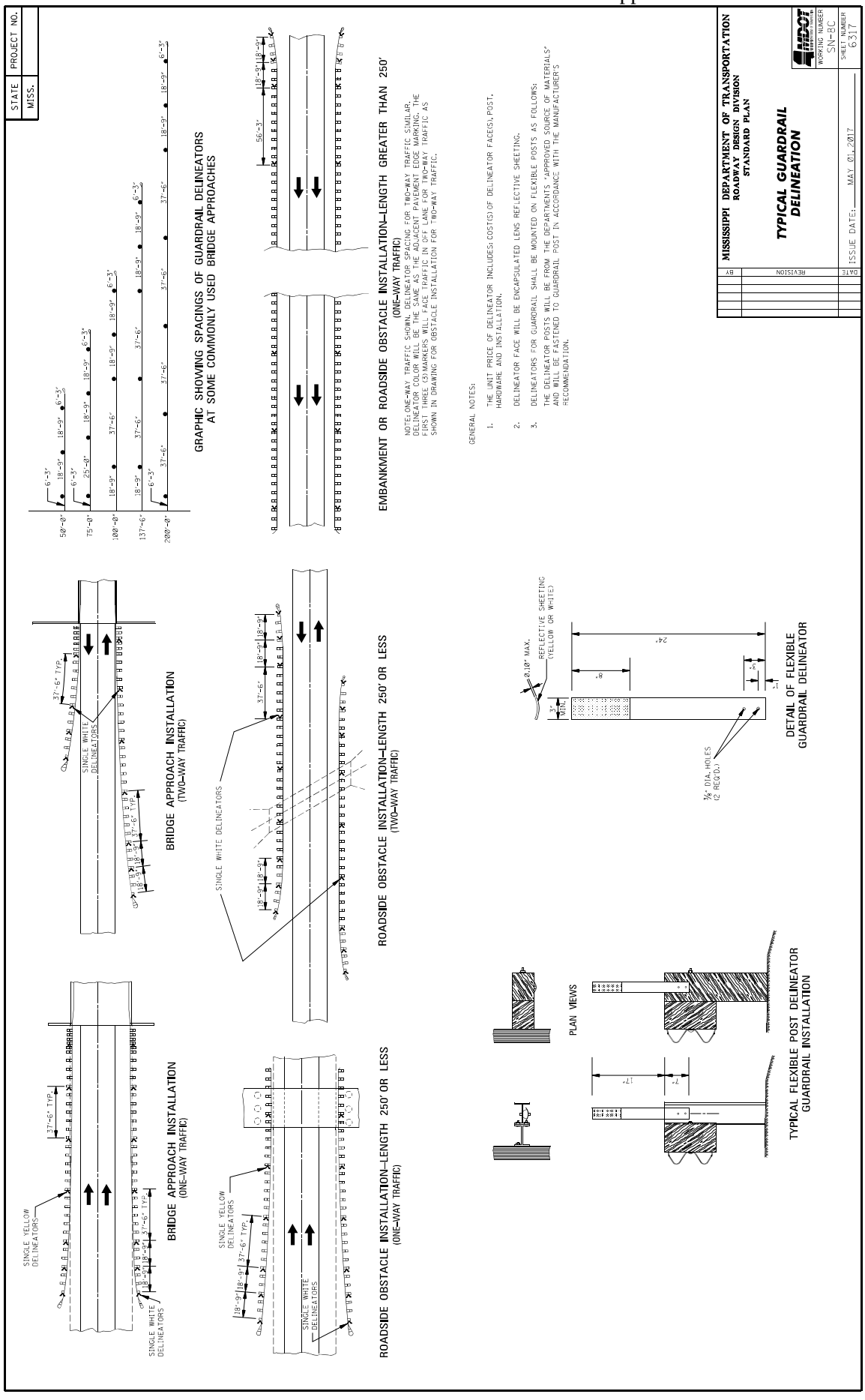

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
TYPICAL INSTALLATION
AT BRIDGE APPROACHES
FOR 2-LANE 2-WAY
HIGHWAY
WORKING NUMBER GR-4A
SHEET NUMBER 6215
ISSUE DATE: MAY 01, 2017
BY REVISION DATE
* NOTE: IF FORESLOPE SHOWN ELSEWHERE ON PLANS, IS OTHER THAN 6:1, TRANSITION WILL OCCUR IN AREA SHOWN.
DETAIL OF GUARDRAIL SECTION LAPS
GENERAL NOTES:
1. VALUES FOR "A", "B", "C" AND "D" WILL BE SHOWN ELSEWHERE ON THE PLANS.
2. FOR DETAILS PERTINENT TO INSTALLATION OF THE TERMINAL SECTION, SEE MANUFACTURER'S SPECIFICATIONS AND DRAWINGS OR ELSEWHERE ON PLANS
3. GUARDRAIL SECTIONS ARE TO BE LAPPED IN THE DIRECTION OF TRAFFIC APPROACHING THE BRIDGE.
4. THE OVERALL LENGTH OF GUARDRAIL IS MEASURED FROM THE CONNECTING END ON THE BRIDGE.
5. IN THE ABSENCE OF A BRIDGE END PAVEMENT RAIL, CONNECT THE BRIDGE END SECTION TO THE BRIDGE RAIL (SEE WFs, NDSs, GR-2 THRU GR-2CC). THE SHOULDER WIDTH AT THE BRIDGE END PAVEMENT RAIL OR BRIDGE END RAIL SHALL BE SUFFICIENT TO PROVIDE A MINIMUM OF 2'-0" BEHIND THE BACK OF POST BEFORE THE SLOPE BREAK (HINGEPOINT).
6. TYPE, DETAILS AND LIMITS OF GUARDRAIL BRIDGE END SECTION WILL BE SHOWN ELSEWHERE ON THE PLANS.
7. W = SHOULDER WIDTH + FORESLOPE WIDTH. DIMENSIONS FOUND ELSEWHERE ON THE PLANS.
PLAN
SECTION A-A
SECTION B-B
NORMAL GUARDRAIL INSTALLATION
TERMINAL SECTION
BRIDGE END SECTION
TANGENT
30:1 TAPER
37'-6" TYPICAL
75'
GUARDRAIL FACE ALINEMENT ON BRIDGE
150' MINIMUM TRANSITION
20:1 SLOPE RELATIVE TO LONGITUDINAL GRADIENT FOR HIGHWAY CENTERLINE
* VARIABLE
NORMAL SHOULDER
ETL
BRIDGE
BRIDGE END PAVT RAIL
SEE NOTE 5
BRIDGE END PAVEMENT
VARIES
NORMAL SHOULDER SLOPE
AS SHOWN ON THE PLANS
6:1
3:1
2'-0"


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
TYPICAL INSTALLATION
FOR ROADSIDE HAZARDS
ON DIVIDED HIGHWAYS
WORKING NUMBER GR-4B
SHEET NUMBER 6216
ISSUE DATE: MAY 01, 2017
BY REVISION DATE
SECTION A–A
SECTION B–B
SECTION C–C
SECTION D–D
FOR OBSTACLES 5' TO 17' FROM NORMAL SHOULDER
SECTION D–D
FOR OBSTACLES 17' OR MORE FROM NORMAL SHOULDER
SECTION E–E
† NOTE: IF FORESLOPE, SHOWN ELSEWHERE ON PLANS, IS OTHER THAN 6:1, TRANSITION WILL OCCUR IN AREA SHOWN.
** NOTE: FOR STEEL POST AND 8" X 8" POWDER POST MODIFIED WOOD BLOCKOUT, USE 8" X 6" POWDER POST AND BLOCKOUT, 23.25".
TYPICAL INSTALLATION FOR CULVERT
* NOTE: DISTANCE REQUIRED SHOWN ELSEWHERE ON PLANS.
TYPICAL INSTALLATION FOR ROADSIDE OBSTACLE ON SIDE SLOPE STEEPER THAN 10:1
* NOTE: DISTANCE REQUIRED SHOWN ELSEWHERE ON PLANS.
TYPICAL INSTALLATION FOR ROADSIDE OBSTACLE ON SIDE SLOPE 10:1 OR FLATTER
*NOTE: DISTANCE REQUIRED SHOWN ELSEWHERE ON PLANS.
DETAIL OF POST INSTALLATION WITH COVER
LESS THAN NORMAL POST LENGTH
GENERAL NOTES:
1. FOR DETAILS PERTINENT TO INSTALLATION OF THE TERMINAL SECTION, SEE MANUFACTURER'S SPECIFICATIONS AND DRAWINGS OR ELSEWHERE ON PLANS
2. GUARDRAIL SECTIONS TO BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW NEAREST THE GUARDRAIL FACE.
3. PAY LIMITS FOR NORMAL GUARDRAIL INSTALLATION WILL BE THE TOTAL LENGTH LESS THE LENGTHS OF END TERMINALS.
4. W = SHOULDER WIDTH + FORESLOPE WIDTH. DIMENSIONS FOUND ELSEWHERE ON THE PLANS.


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
TYPICAL INSTALLATION
FOR ROADSIDE HAZARDS
ON 2-LANE, 2-WAY
HIGHWAYS
WORKING NUMBER GR-4C
SHEET NUMBER 6217
ISSUE DATE: MAY 01, 2017
BY REVISION DATE
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
FOR OBSTACLES 5' TO 17' FROM NORMAL SHOULDER
SECTION D-D
FOR OBSTACLES 17' OR MORE FROM NORMAL SHOULDER
SECTION E-E
** NOTE: FOR STEEL POST AND MODIFIED WOOD BLOCKOUT, USE 8" POWER POST. FOR 6"x8" AND WOOD BLOCKOUT, 23.25".
TYPICAL INSTALLATION FOR CULVERT
* NOTE: DISTANCE REQUIRED SHOWN ELSEWHERE ON PLANS.
TYPICAL INSTALLATION FOR ROADSIDE OBSTACLE ON SIDE SLOPE STEEPER THAN 10:1
* NOTE: DISTANCE REQUIRED SHOWN ELSEWHERE ON PLANS.
TYPICAL INSTALLATION FOR ROADSIDE OBSTACLE ON SIDE SLOPE 10:1 OR FLATTER
* NOTE: DISTANCE REQUIRED SHOWN ELSEWHERE ON PLANS.
† NOTE: IF FORESLOPE SHOWN ELSEWHERE ON PLANS IS OTHER THAN 6:1, TRANSITION WILL OCCUR IN AREA SHOWN.
GENERAL NOTES:
1. FOR DETAILS PERTINENT TO INSTALLATION OF THE TERMINAL SECTION, SEE MANUFACTURER'S SPECIFICATIONS AND DRAWINGS OR ELSEWHERE ON PLANS
2. GUARDRAIL SECTIONS TO BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW NEAREST THE GUARDRAIL FACE.
3. PAY LIMITS FOR NORMAL GUARDRAIL INSTALLATION WILL BE THE TOTAL LENGTH LESS THE LENGTHS OF END TERMINALS.
4. W = SHOULDER WIDTH + FORESLOPE WIDTH. DIMENSIONS FOUND ELSEWHERE ON THE PLANS.
THE POST SHALL BE WRAPPED WITH ONE LAYER OF 1/4" THICK EXPANDED POLYSTYRENE FOAM SHEETING AND ONE WRAP OF LIGHTWEIGHT BUILDING PAPER. THE TOP 1" SHALL BE FILLED WITH BUTYL RUBBER CAULKING (COMMERCIAL GRADE) OR OTHER APPROVED WATERPROOFING MATERIAL.
TOP OF NEW BOX CULVERT OR BRIDGE FOOTING.
TOP OF EXISTING BOX CULVERT OR BRIDGE FOOTING.
1/2" DOWEL BARS 12" LONG AS REQUIRED PER POST. NO SPECIAL PAYMENT WILL BE MADE FOR CONCRETE OR DOWELS.
DETAIL OF POST INSTALLATION WITH COVER
LESS THAN NORMAL POST LENGTH


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
MISCELLANEOUS HARDWARE
WORKING NUMBER GR-HW
SHEET NUMBER 6221
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
"W" BEAM TERMINAL CONNECTOR PLATE
NOTES:
1. THE "W" BEAM TERMINAL CONNECTOR IS TO BE AASHTO M 180 CORRUGATED SHEET STEEL, CLASS B, TYPE 1.
2. SPLICE-BOLT SLOTS MAY ALSO BE ORIENTED AT 50° (ON THE FLAT) INSTEAD OF 0° AS SHOWN.
SHELF ANGLE BRACKET
BREAKAWAY TERMINAL POST SLEEVE
STEEL TUBE ANCHOR
NOTE: TERMINAL POST SHOULD BE ABLE TO SLIDE INTO THE TOP OF THIS SECTION SO THE ACTUAL INSIDE DIMENSIONS OF THIS GALVANIZED TUBE CANNOT BE LESS THAN 7½" X 5½".
BEARING PLATE
TERMINAL POST FOR FOUNDATION TUBE INSTALLATION
NOTE: TERMINAL POST SHALL BE MADE OF SAS TIMBER WITH a STRESS GRADE OF 1200 lbs/in.²
SOIL PLATE
NOTE: 2 REQUIRED
RECTANGULAR GUARDRAIL PLATE WASHER
HEX NUT "H"
RECESSED NUT
HEX NUT AND BOLT "F"
GUARDRAIL BOLT
GUARDRAIL BOLTS
BOLT L T
"A" 1¼" 1"
"B" 2" 1¾"
"C" 1½" 4"
"D" 2½" 4"
"E" 3" 4"
"F" 3½" 4"
PLAIN ROUND WASHER
PLAIN ROUND WASHERS
WASHER A (NOM.) B (NOM.) C (NOM.)
"F" ¾" 1¾" ¾"
"H" 1⅛" 2" ⅞"
ANCHOR PLATE ASSEMBLY DETAILS
8- HEX NUT AND BOLT "F", 1½" LONG, WITH 8- PLAIN ROUND WASHER "F" UNDER HEAD
TERMINAL RAIL
ANCHOR PLATE
ANCHOR CABLE
BRACKET
END PLATE
ANCHOR PLATE
BENT PLATE (16" X 12½" X ⅜")
¾" DIA. HOLES
THREE SIDES
WELD END PLATE TO BRACKET
CABLE ANCHOR ASSEMBLY
1" - 8 UNC THREAD PITCH (BOTH ENDS)
PLAIN ROUND WASHER "H"
HEX NUT "H"
¾" DIA. (6 X 19) CABLE
CABLE TO BE SWAGE-CONNECTED.
STANDARD SWAGED FITTING AND STUD (STUD THREADED ENTIRE LENGTH)
FASTENER DETAILS
NOTES:
1. ALL GUARDRAIL BOLTS ARE ⅝" - 11 UNC THREAD PITCH.
2. IF ANY BOLT EXTENDS MORE THAN ¼" FROM THE NUT, THE BOLT SHOULD BE TRIMMED BACK.


STATE
MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
GUARDRAIL:
RUB RAIL HARDWARE
WORKING NUMBER
GR-4R
SHEET NUMBER
6218
ISSUE DATE: MAY 01, 2017
BY
REVISION
DATE
GENERAL NOTES:
1. POSTS 1 THROUGH 9 REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER BLOCKOUTS. STEEL POST REQUIRE 2 HOLES ON EITHER SIDE OF THE POST.
2. RUBRAIL BLOCKOUTS ARE TO BE SECURED WITH ¾" BUTTONHEAD BOLT FOR STEEL POST AND 20" BOLT FOR WOOD POST. (SEE PROFILE VIEW FOR LENGTHS)
3. RUBRAIL & LONG BLOCKOUT (POST 9) ARE NOT REQUIRED IN CURB & GUTTER SECTIONS OF ROADWAY.
BLOCKOUT FOR POST 9 OF TYPE "T" BRIDGE END SECTION
6" X 12" MODIFIED WOOD BLOCKOUT
PLAN
ELEVATION FOR STEEL POST
6" X 12" WOOD BLOCKOUT
ELEVATION FOR WOOD POST
CROSS-SECTION VIEW OF C6 x 8.2
PROFILE VIEW OF POSTS
STEEL POST
WOOD POST
LONGITUDINAL RUB RAIL
DIAGONAL RUB RAIL
RUB RAIL CONNECTOR BRACKET
"L" BRACKET
25' OR 15' GUARDRAIL BOLT


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
TYPICAL GUARDRAIL DELINEATION
WORKING NUMBER SN-8C
SHEET NUMBER 6517
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
GRAPHIC SHOWING SPACINGS OF GUARDRAIL DELINEATORS AT SOME COMMONLY USED BRIDGE APPROACHES
50'-0" 75'-0" 100'-0" 137'-6" 200'-0"
6'-3" 18'-9" 25'-0" 37'-6"
EMBANKMENT OR ROADSIDE OBSTACLE INSTALLATION—LENGTH GREATER THAN 250' (ONE-WAY TRAFFIC)
NOTE: ONE-WAY TRAFFIC SHOWN, DELINEATOR SPACING FOR TWO-WAY TRAFFIC SIMILAR, DELINEATOR COLOR WILL BE THE SAME AS THE ADJACENT PAVEMENT EDGE MARKING. THE FIRST THREE (3) MARKERS WILL FACE TRAFFIC IN OFF LANE FOR TWO-WAY TRAFFIC AS SHOWN IN DRAWING FOR OBSTACLE INSTALLATION FOR TWO-WAY TRAFFIC.
GENERAL NOTES:
1. THE UNIT PRICE OF DELINEATOR INCLUDES: COST(S) OF DELINEATOR FACE(S), POST, HARDWARE AND INSTALLATION.
2. DELINEATOR FACE WILL BE ENCAPSULATED LENS REFLECTIVE SHEETING.
3. DELINEATORS FOR GUARDRAIL SHALL BE MOUNTED ON FLEXIBLE POSTS AS FOLLOWS: THE DELINEATOR POSTS WILL BE FROM THE DEPARTMENTS "APPROVED SOURCE OF MATERIALS" AND WILL BE STEMED TO GUARDRAIL POST IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.
BRIDGE APPROACH INSTALLATION (TWO-WAY TRAFFIC)
SINGLE WHITE DELINEATORS
37'-6" TYP.
18'-9"
BRIDGE APPROACH INSTALLATION (ONE-WAY TRAFFIC)
SINGLE YELLOW DELINEATORS
SINGLE WHITE DELINEATORS
ROADSIDE OBSTACLE INSTALLATION—LENGTH 250' OR LESS (TWO-WAY TRAFFIC)
ROADSIDE OBSTACLE INSTALLATION—LENGTH 250' OR LESS (ONE-WAY TRAFFIC)
SINGLE YELLOW DELINEATORS
SINGLE WHITE DELINEATORS
DETAIL OF FLEXIBLE GUARDRAIL DELINEATOR
0.10" MAX.
REFLECTIVE SHEETING (YELLOW OR WHITE)
3" MIN.
24"
3/8" DIA. HOLES (2 REQ'D.)
TYPICAL FLEXIBLE POST DELINEATOR GUARDRAIL INSTALLATION
PLAN VIEWS

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 – NOTICE TO BIDDERS NO. 401 **CODE: (SP)**

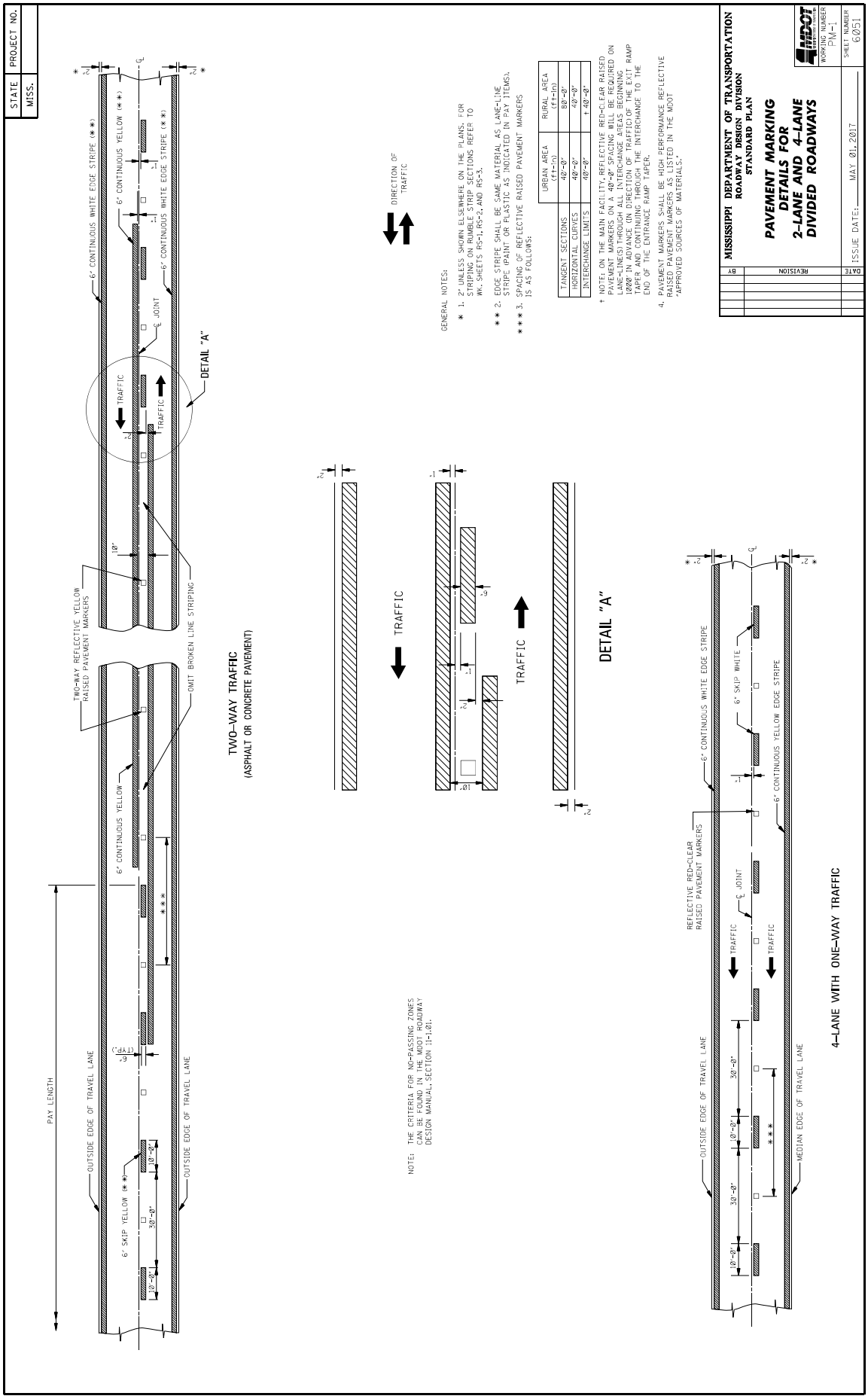
DATE: 09/12/2017

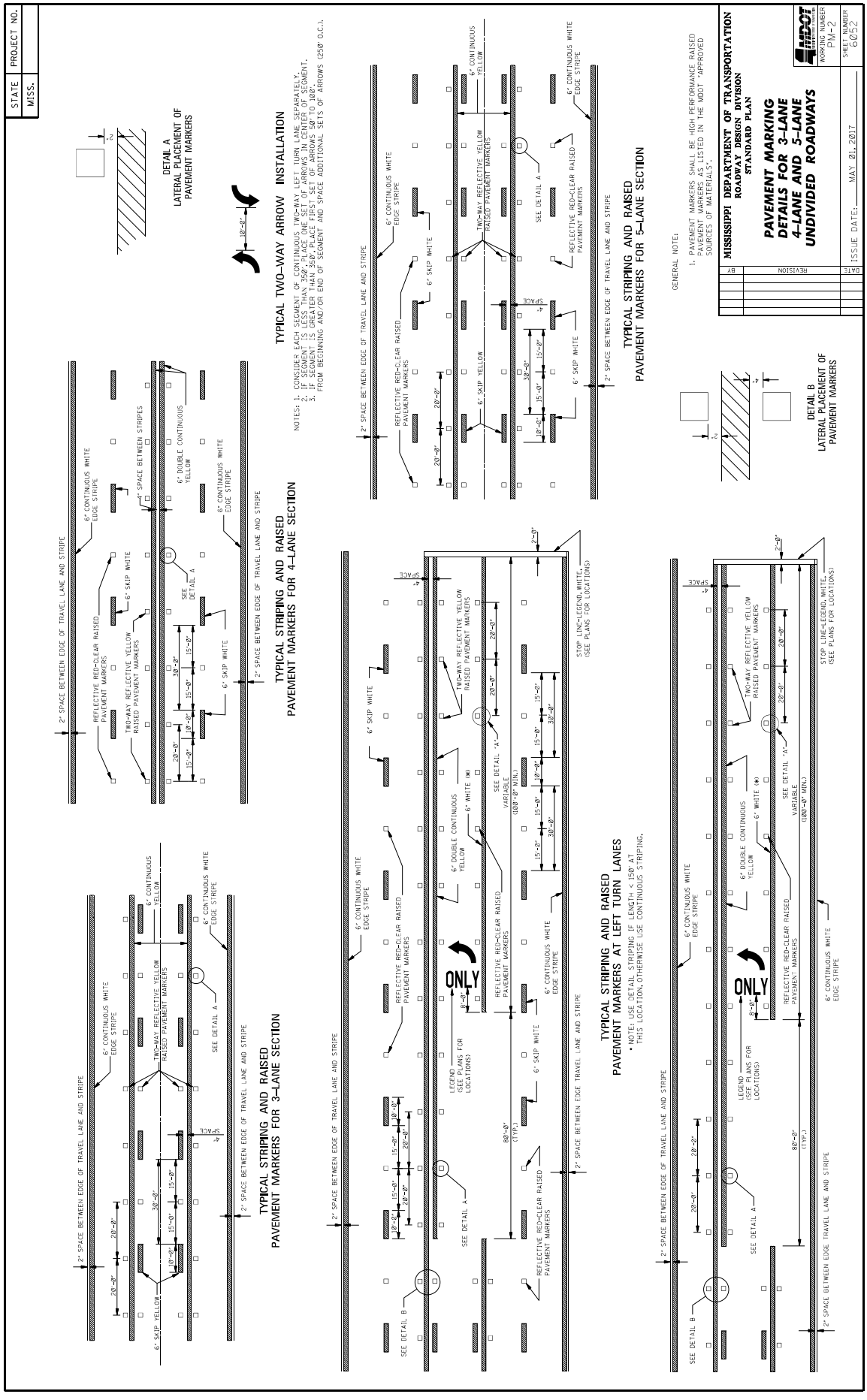
SUBJECT: Standard Drawings

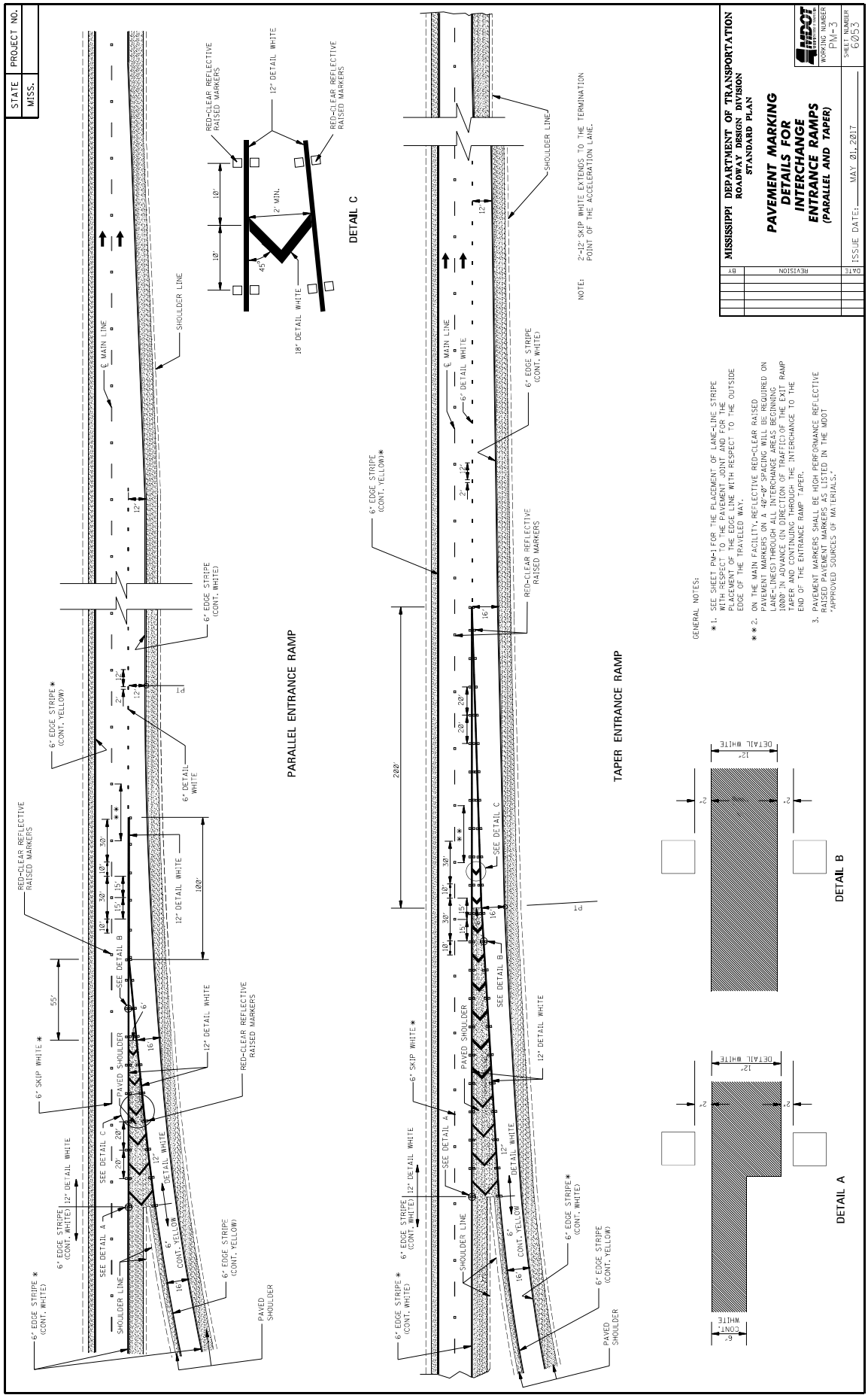
The Standard Drawings attached hereto shall govern appropriate items of required work.

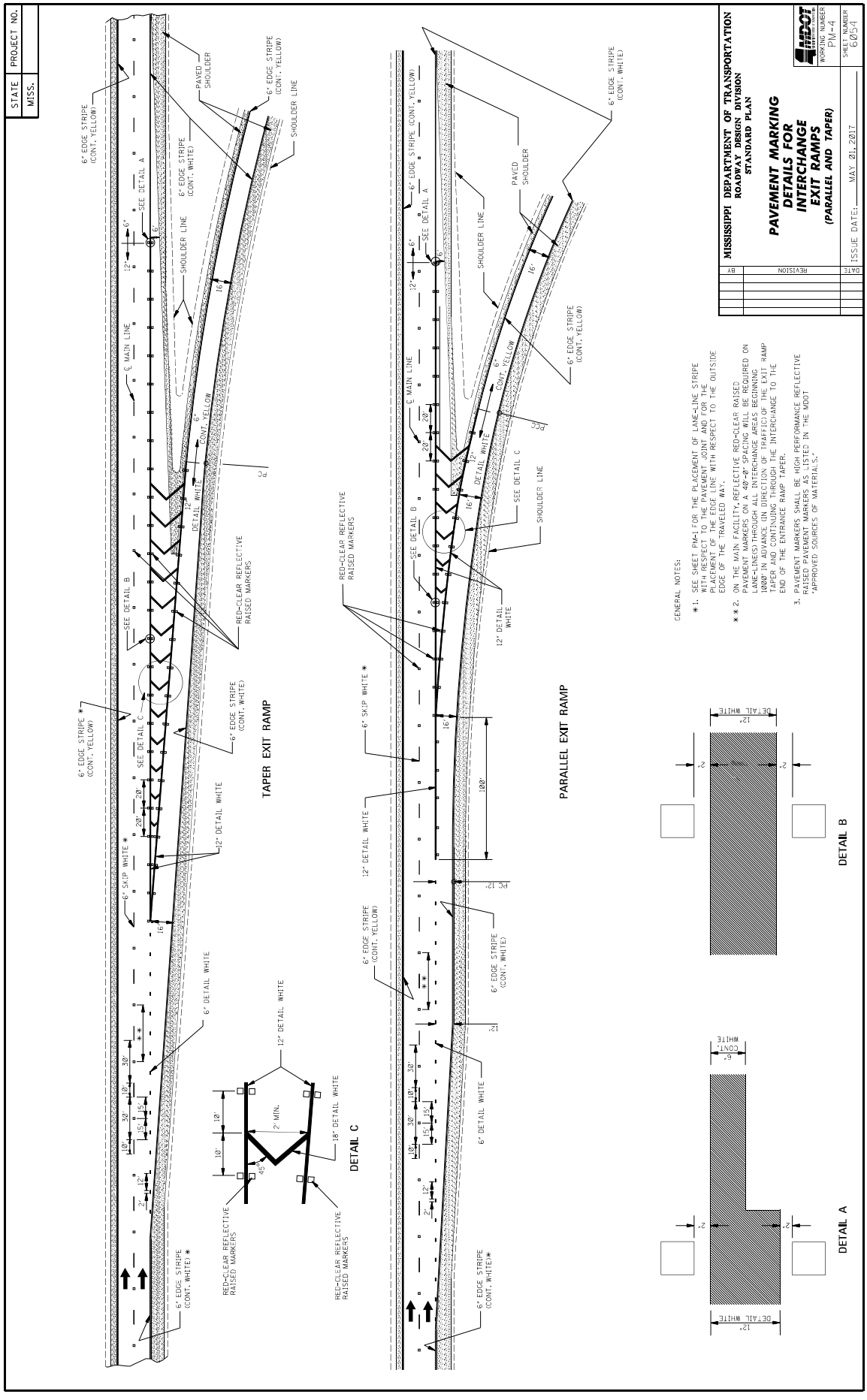
Larger copies of Standard Drawings may be purchased from:

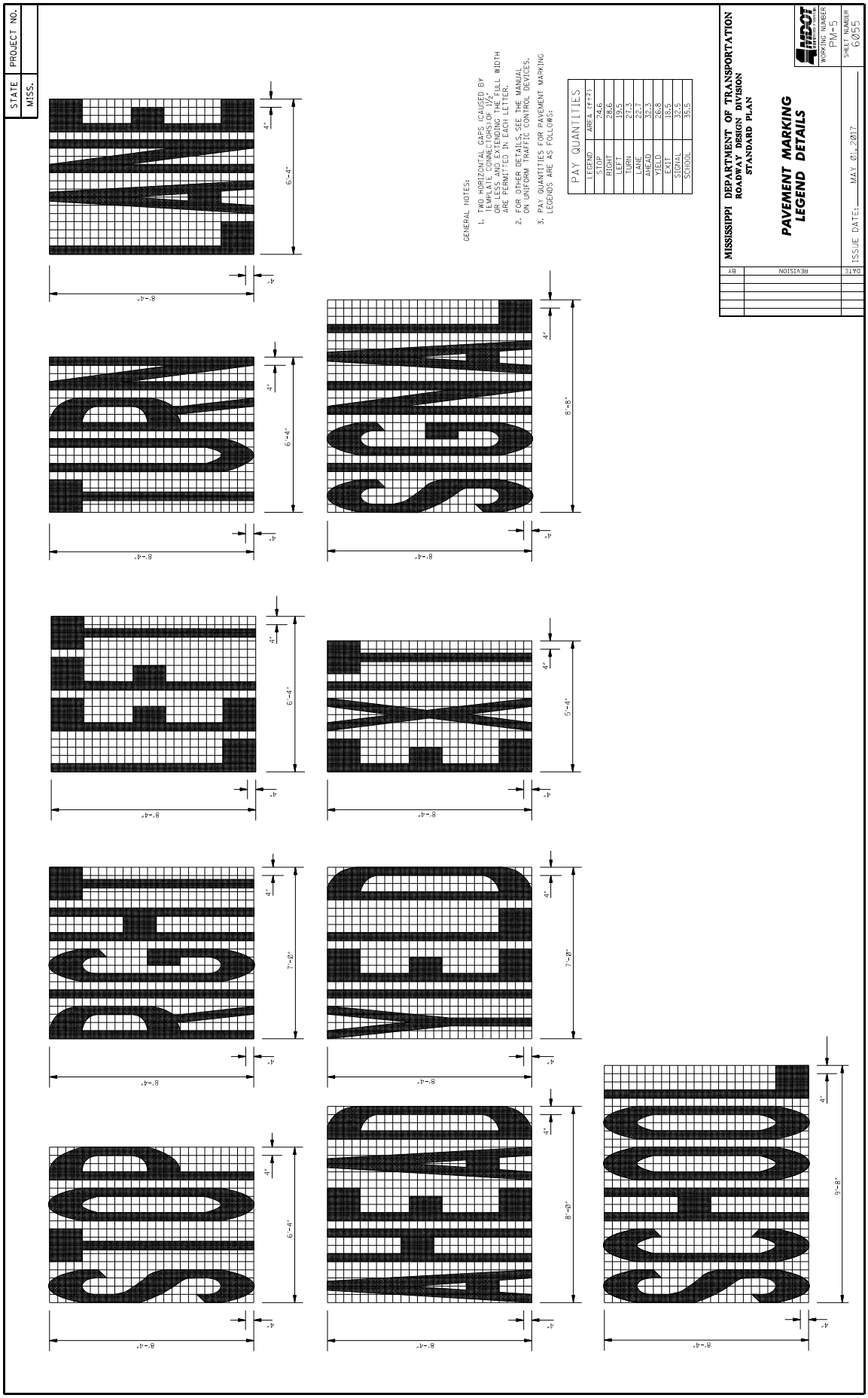
MDOT Plans Print Shop
MDOT Shop Complex, Building C, Room 114
2567 North West Street
P.O. Box 1850
Jackson, MS 39215-1850
Telephone: (601) 359-7460
or FAX: (601) 359-7461
or e-mail: plans@mdot.state.ms.us

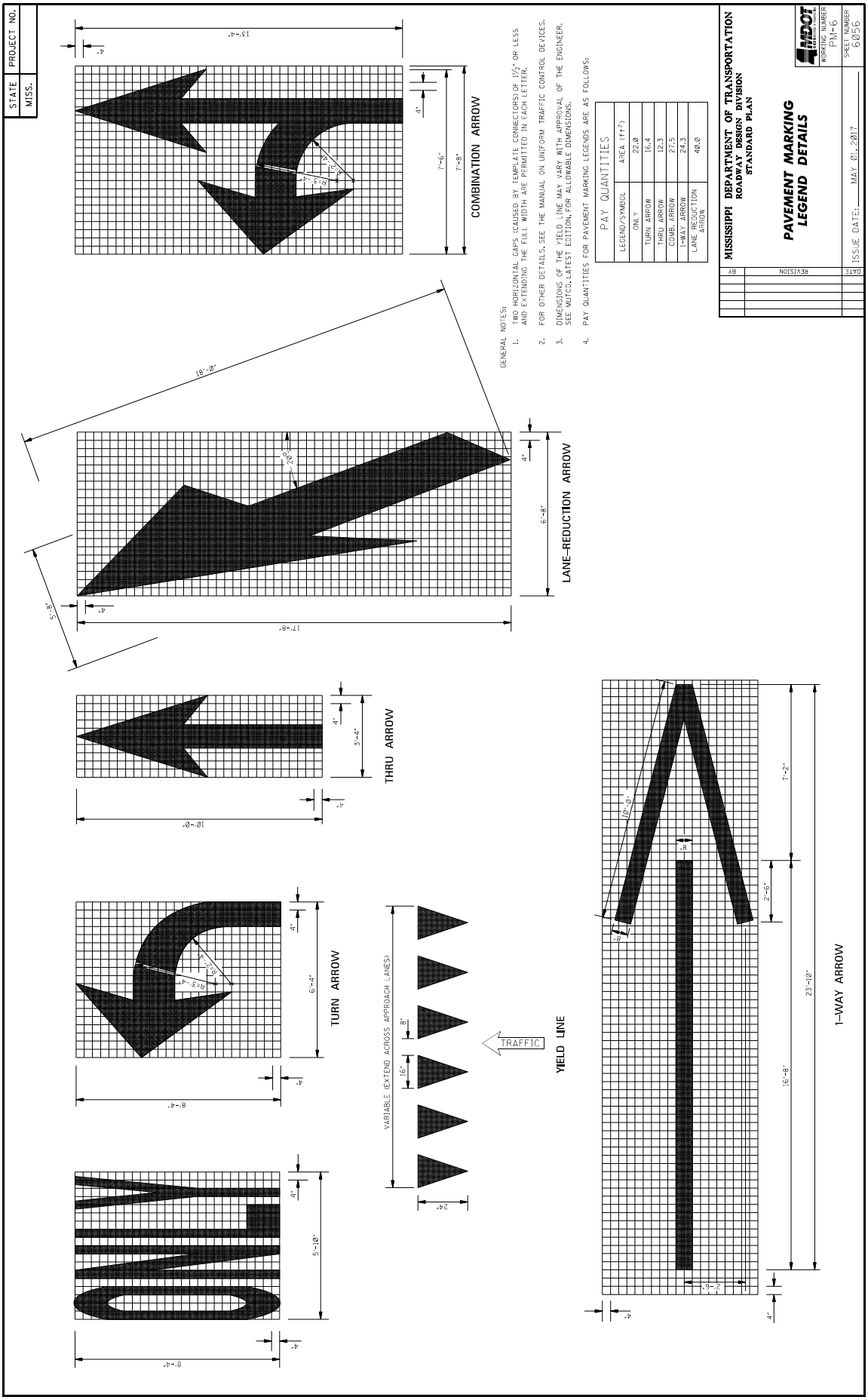

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
PAVEMENT MARKING DETAILS FOR 2-LANE AND 4-LANE DIVIDED ROADWAYS
WORKING NUMBER PM-1
SHEET NUMBER 6051
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
GENERAL NOTES:
* 1. 2" UNLESS SHOWN ELSEWHERE ON THE PLANS. FOR STRIPING ON RUMBLE STRIP SECTIONS REFER TO MK. SHEETS RS-1, RS-2, AND RS-3.
** 2. EDGE STRIPE SHALL BE SAME MATERIAL AS LANE-LINE STRIPE (PAINT OR PLASTIC AS INDICATED IN PAY ITEMS).
*** 3. SPACING OF REFLECTIVE RAISED PAVEMENT MARKERS IS AS FOLLOWS:
URBAN AREA (ft-in) | RURAL AREA (ft-in)
TANGENT SECTIONS 40'-0" 80'-0"
HORIZONTAL CURVES 40'-0" 40'-0"
INTERCHANGE LIMITS 40'-0" + 40'-0"
† NOTE: ON THE MAIN FACILITY, REFLECTIVE RED-CLEAR RAISED PAVEMENT MARKERS ARE REQUIRED ON LANE LINE(S) THROUGH ALL INTERCHANGE AREAS BEGINNING 1000' IN ADVANCE (IN DIRECTION OF TRAFFIC) OF THE EXIT RAMP TAPER AND CONTINUING THROUGH THE INTERCHANGE TO THE END OF THE ENTRANCE RAMP TAPER.
4. PAVEMENT MARKERS SHALL BE HIGH PERFORMANCE REFLECTIVE RAISED PAVEMENT MARKERS AS LISTED IN THE MDOT "APPROVED SOURCES OF MATERIALS."
DIRECTION OF TRAFFIC
TRAFFIC
DETAIL "A"
TWO-WAY TRAFFIC
(ASPHALT OR CONCRETE PAVEMENT)
TWO-WAY REFLECTIVE YELLOW RAISED PAVEMENT MARKERS
6" CONTINUOUS YELLOW
6" SKIP YELLOW (**)
6" CONTINUOUS WHITE EDGE STRIPE (**)
6" CONTINUOUS WHITE EDGE STRIPE
6" CONTINUOUS YELLOW EDGE STRIPE
6" SKIP WHITE
OMIT BROKEN LINE STRIPING
PAY LENGTH
OUTSIDE EDGE OF TRAVEL LANE
MEDIAN EDGE OF TRAVEL LANE
REFLECTIVE RED-CLEAR RAISED PAVEMENT MARKERS
NOTE: THE CRITERIA FOR NO-PASSING ZONES CAN BE FOUND IN THE MDOT ROADWAY DESIGN MANUAL, SECTION 11-1.01.
4-LANE WITH ONE-WAY TRAFFIC

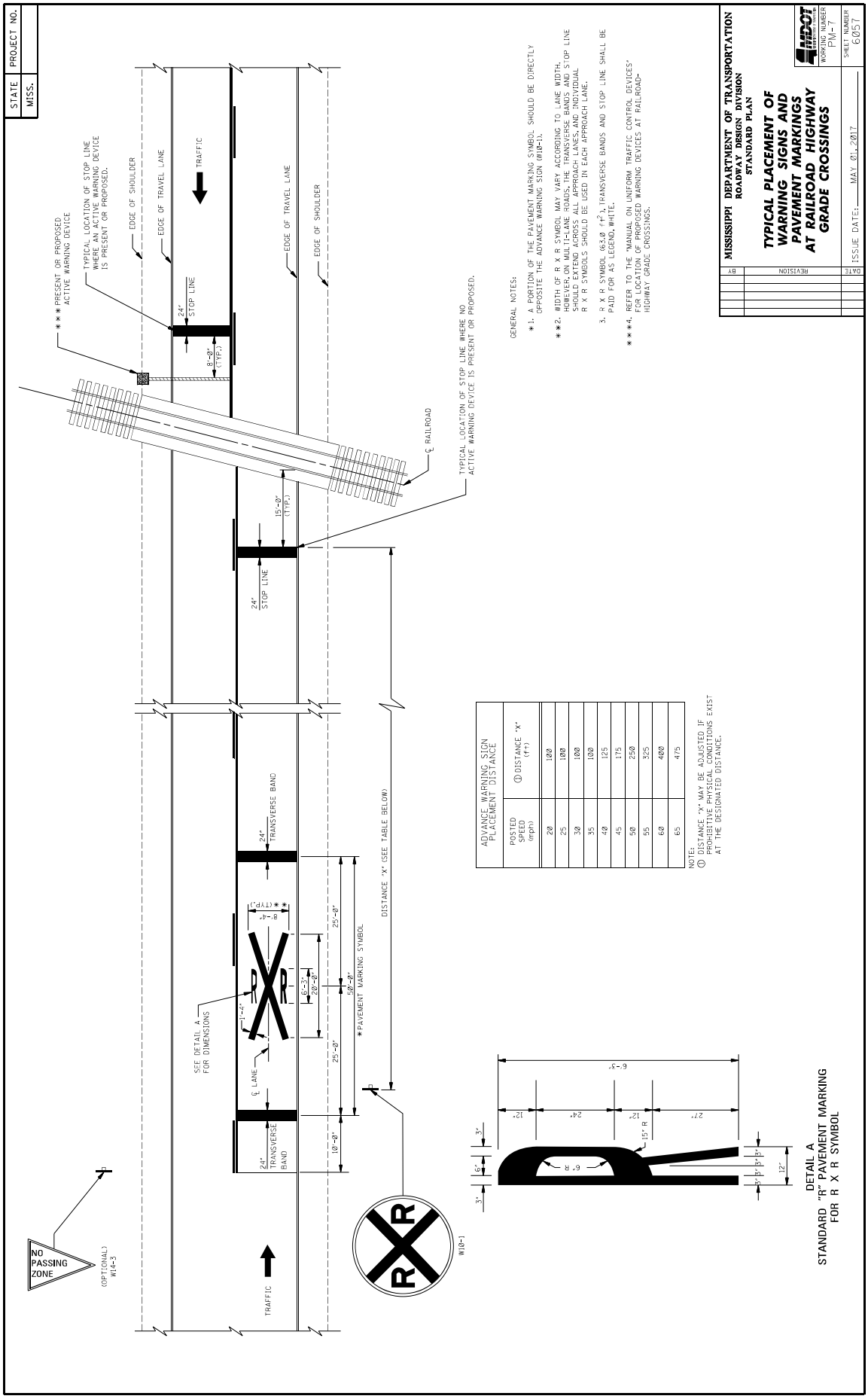

STATE
MISS.
PROJECT NO.
TYPICAL TWO-WAY ARROW INSTALLATION
NOTES: 1. CONSIDER EACH SEGMENT OF CONTINUOUS TWO-WAY LEFT TURN LANE SEPARATELY.
2. IF SEGMENT IS LESS THAN 150' PLACE FIRST SET OF ARROWS AT BEGINNING OF SEGMENT.
3. IF SEGMENT IS GREATER THAN 360' PLACE FIRST SET OF ARROWS 50' TO 100' FROM BEGINNING AND/OR END OF SEGMENT AND SPACE ADDITIONAL SETS OF ARROWS (250' O.C.).
DETAIL A
LATERAL PLACEMENT OF PAVEMENT MARKERS
TYPICAL STRIPING AND RAISED PAVEMENT MARKERS FOR 4-LANE SECTION
TYPICAL STRIPING AND RAISED PAVEMENT MARKERS FOR 3-LANE SECTION
TYPICAL STRIPING AND RAISED PAVEMENT MARKERS FOR 5-LANE SECTION
TYPICAL STRIPING AND RAISED PAVEMENT MARKERS AT LEFT TURN LANES
* NOTE: USE DETAIL STRIPING IF LENGTH < 150' AT THIS LOCATION, OTHERWISE USE CONTINUOUS STRIPING.
DETAIL B
LATERAL PLACEMENT OF PAVEMENT MARKERS
GENERAL NOTE:
1. PAVEMENT MARKERS SHALL BE HIGH PERFORMANCE RAISED PAVEMENT MARKERS AS LISTED IN THE MDOT "APPROVED SOURCES OF MATERIALS".
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
PAVEMENT MARKING DETAILS FOR 3-LANE 4-LANE AND 5-LANE UNDIVIDED ROADWAYS
WORKING NUMBER FM7-2
SHEET NUMBER 6052
DATE
REVISION
BY
ISSUE DATE: MAY 01, 2017

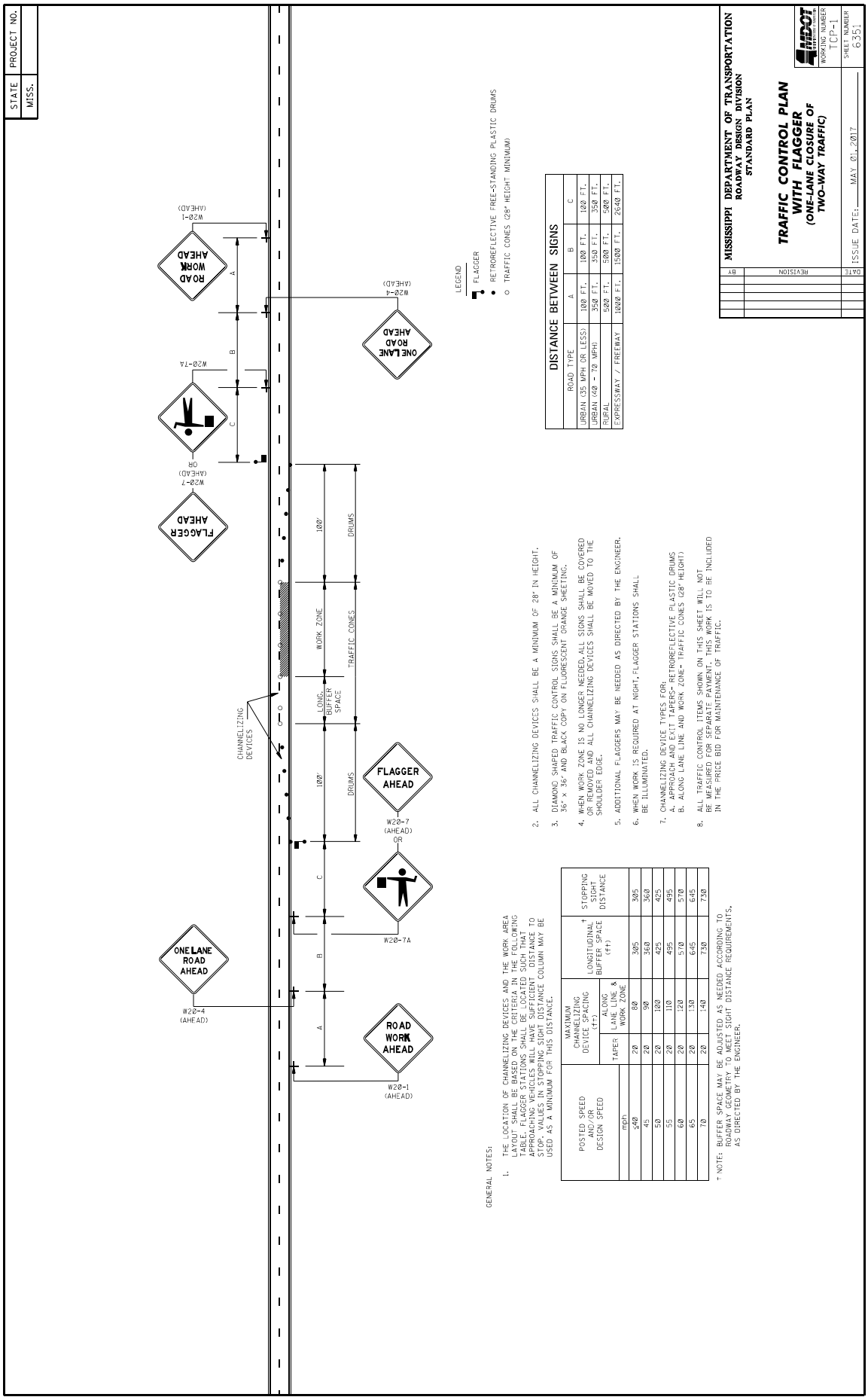

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
PAVEMENT MARKING DETAILS FOR INTERCHANGE ENTRANCE RAMPS (PARALLEL AND TAPER)
WORKING NUMBER PM-3
SHEET NUMBER 6055
ISSUE DATE: MAY 01, 2017
BY REVISION DATE
PARALLEL ENTRANCE RAMP
TAPER ENTRANCE RAMP
DETAIL C
DETAIL A
DETAIL B
GENERAL NOTES:
*1. SEE SHEET PM-1 FOR THE PLACEMENT OF LANE-LINE STRIPE WITH RESPECT TO THE PAVEMENT JOINT AND FOR THE PLACEMENT OF THE EDGE LINE WITH RESPECT TO THE OUTSIDE EDGE OF THE TRAVELED WAY.
**2. ON THE MAIN FACILITY, REFLECTIVE RED-CLEAR RAISED PAVEMENT MARKERS ON A 40'-0" SPACING WILL BE REQUIRED ON LANE-LINE(S) THROUGH ALL INTERCHANGE AREAS BEGINNING 1000' IN ADVANCE (IN DIRECTION OF TRAFFIC) OF THE EXIT RAMP TAPER AND CONTINUING THROUGH THE INTERCHANGE TO THE END OF THE ENTRANCE RAMP TAPER.
3. PAVEMENT MARKERS SHALL BE HIGH PERFORMANCE REFLECTIVE RAISED PAVEMENT MARKERS AS LISTED IN THE MDOT "APPROVED SOURCES OF MATERIALS."
NOTE: 2-12' SKIP WHITE EXTENDS TO THE TERMINATION POINT OF THE ACCELERATION LANE.


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
PAVEMENT MARKING DETAILS FOR INTERCHANGE EXIT RAMPS
(PARALLEL AND TAPER)
WORKING NUMBER FM-4
SHEET NUMBER 6054
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
TAPER EXIT RAMP
PARALLEL EXIT RAMP
DETAIL A
DETAIL B
DETAIL C
GENERAL NOTES:
*1. SEE SHEET FM-1 FOR THE PLACEMENT OF LANE-LINE STRIPE WITH RESPECT TO THE PAVEMENT JOINT AND FOR THE PLACEMENT OF THE EDGE LINE WITH RESPECT TO THE OUTSIDE EDGE OF THE TRAVELED WAY.
**2. ON THE MAIN FACILITY, REFLECTIVE RED-CLEAR RAISED PAVEMENT MARKERS ON A 40'-0" SPACING WILL BE REQUIRED ON LANE-LINES THROUGH ALL INTERCHANGE AREAS BEGINNING 1000' IN ADVANCE (IN DIRECTION OF TRAFFIC) OF THE EXIT RAMP TAPER AND CONTINUING THROUGH THE INTERCHANGE TO THE END OF THE ENTRANCE RAMP TAPER.
3. PAVEMENT MARKERS SHALL BE HIGH PERFORMANCE REFLECTIVE RAISED PAVEMENT MARKERS AS LISTED IN THE MDOT "APPROVED SOURCES OF MATERIALS."


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
PAVEMENT MARKING LEGEND DETAILS
WORKING NUMBER PM-5
SHEET NUMBER 6055
ISSUE DATE: MAY 01, 2017
BY REVISION DATE
GENERAL NOTES:
1. TWO HORIZONTAL GAPS (CAUSED BY TEMPLATE CONNECTORS) OF 1½" OR LESS AND EXTENDING THE FULL WIDTH ARE PERMITTED IN EACH LETTER.
2. FOR OTHER DETAILS, SEE THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
3. PAY QUANTITIES FOR PAVEMENT MARKING LEGENDS ARE AS FOLLOWS:
PAY QUANTITIES
LEGEND AREA (FT²)
STOP 24.6
RIGHT 28.6
LEFT 19.5
TURN 27.3
LANE 22.7
AHEAD 32.3
YIELD 26.8
EXIT 18.5
SIGNAL 32.5
SCHOOL 35.5


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
PAVEMENT MARKING LEGEND DETAILS
WORKING NUMBER PM-6
SHEET NUMBER 6056
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
GENERAL NOTES:
1. TWO HORIZONTAL GAPS (CAUSED BY TEMPLATE CONNECTORS) OF 1½" OR LESS AND EXTENDING THE FULL WIDTH ARE PERMITTED IN EACH LETTER.
2. FOR OTHER DETAILS, SEE THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
3. DIMENSIONS OF THE YIELD LINE MAY VARY WITH APPROVAL OF THE ENGINEER. SEE MUTCD, LATEST EDITION, FOR ALLOWABLE DIMENSIONS.
4. PAY QUANTITIES FOR PAVEMENT MARKING LEGENDS ARE AS FOLLOWS:
PAY QUANTITIES
LEGEND/SYMBOL | AREA (ft²)
ONLY 22.0
TURN ARROW 16.4
THRU ARROW 12.3
COMB. ARROW 27.5
1-WAY ARROW 24.3
LANE REDUCTION ARROW 40.0
COMBINATION ARROW
LANE-REDUCTION ARROW
THRU ARROW
TURN ARROW
YIELD LINE
TRAFFIC
VARIABLE (EXTEND ACROSS APPROACH LANES)
1-WAY ARROW


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
TYPICAL PLACEMENT OF WARNING SIGNS AND PAVEMENT MARKINGS AT RAILROAD HIGHWAY GRADE CROSSINGS
WORKING NUMBER FM-7
SHEET NUMBER 6057
ISSUE DATE: MAY 01, 2017
BY
REVISION
DATE
GENERAL NOTES:
*1. A PORTION OF THE PAVEMENT MARKING SYMBOL SHOULD BE DIRECTLY OPPOSITE THE ADVANCE WARNING SIGN (W10-1).
**2. WIDTH OF R X R SYMBOL MAY VARY ACCORDING TO LANE WIDTH. HOWEVER, ON MULTI-LANE ROADS, THE TRANSVERSE BANDS AND STOP LINE SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.
3. R X R SYMBOL (63.0 ft², TRANSVERSE BANDS AND STOP LINE SHALL BE PAID FOR AS LEGEND, WHITE.
***4. REFER TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" FOR LOCATION OF PROPOSED WARNING DEVICES AT RAIL-ROAD-HIGHWAY GRADE CROSSINGS.
***PRESENT OR PROPOSED ACTIVE WARNING DEVICE
TYPICAL LOCATION OF STOP LINE WHERE AN ACTIVE WARNING DEVICE IS PRESENT OR PROPOSED.
EDGE OF SHOULDER
EDGE OF TRAVEL LANE
TRAFFIC
24" STOP LINE
8'-0" (TYP.)
℄ RAILROAD
TYPICAL LOCATION OF STOP LINE WHERE NO ACTIVE WARNING DEVICE IS PRESENT OR PROPOSED.
15'-0" (TYP.)
24" TRANSVERSE BAND
2'-4" (TYP.)**
6'-3"
20'-0"
50'-0" *PAVEMENT MARKING SYMBOL
DISTANCE "X" (SEE TABLE BELOW)
SEE DETAIL A FOR DIMENSIONS
℄ LANE
10'-0"
ADVANCE WARNING SIGN PLACEMENT DISTANCE
POSTED SPEED (mph) | ① DISTANCE "X" (FT.)
20 100
25 100
30 100
35 100
40 125
45 175
50 250
55 325
60 400
65 475
NOTE:
① DISTANCE "X" MAY BE ADJUSTED IF PROHIBITIVE PHYSICAL CONDITIONS EXIST AT THE DESIGNATED DISTANCE.
NO PASSING ZONE
(OPTIONAL) W14-3
W10-1
TRAFFIC
6'-3"
12"
24"
12"
27"
15° R
6" R
3"
6"
3"
12"
DETAIL A
STANDARD "R" PAVEMENT MARKING FOR R X R SYMBOL



DISTANCE BETWEEN SIGNS			
ROAD TYPE	A	B	C
URBAN (35 MPH OR LESS)	100 FT.	100 FT.	120 FT.
URBAN (40 - 70 MPH)	350 FT.	350 FT.	350 FT.
RURAL	500 FT.	500 FT.	500 FT.
*EXPRESSWAY / FREEWAY	1000 FT.	1500 FT.	2640 FT.

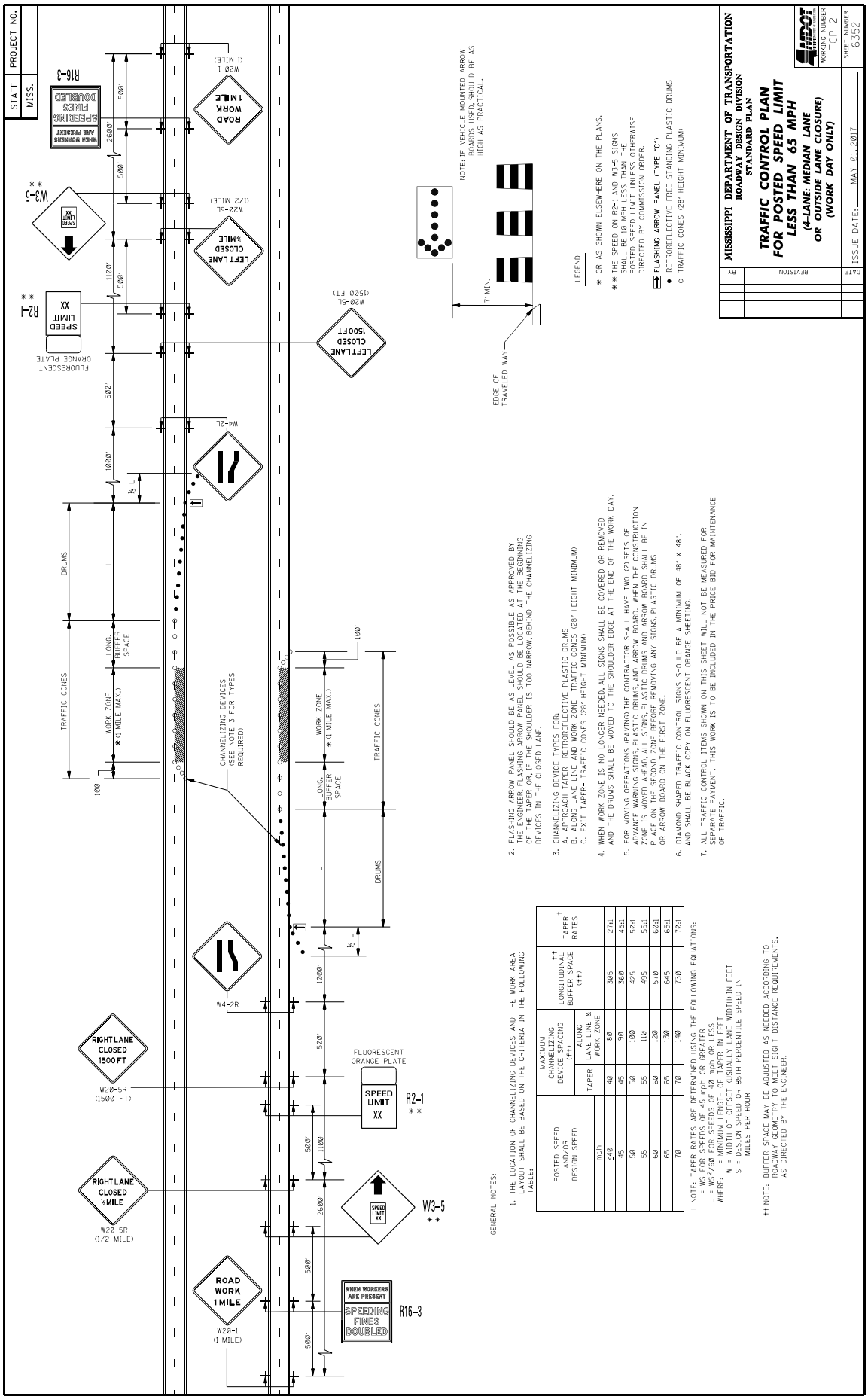
GENERAL NOTES:

1. THE LOCATION OF CHANNELIZING DEVICES AND THE WORK AREA LAYOUT SHALL BE BASED ON THE CRITERIA IN THE FOLLOWING TABLE. FLAGGER STATIONS SHALL BE LOCATED SUCH THAT APPROACHING VEHICLES WILL HAVE SUFFICIENT DISTANCE TO STOP. VALUES IN STOPPING SIGHT DISTANCE COLUMN MAY BE USED AS A MINIMUM FOR THIS DISTANCE.

POSTED SPEED AND/OR DESIGN SPEED	MAXIMUM CHANNELIZING DEVICE SPACING (ft)		LONGITUDINAL* BUFFER SPACE (ft)	STOPPING SIGHT DISTANCE
	TAPER	ALONG LANE LINE & WORK ZONE		
mph				
≤40	20	80	305	305
45	20	90	360	360
50	20	100	425	425
55	20	110	495	495
60	20	120	570	570
65	20	130	645	645
70	20	140	730	730

* NOTE: BUFFER SPACE MAY BE ADJUSTED AS NEEDED ACCORDING TO ROADWAY GEOMETRY TO MEET SIGHT DISTANCE REQUIREMENTS, AS DIRECTED BY THE ENGINEER.

2. ALL CHANNELIZING DEVICES SHALL BE A MINIMUM OF 28" IN HEIGHT.
3. DIAMOND SHAPED TRAFFIC CONTROL SIGNS SHALL BE A MINIMUM OF 36" x 36" AND BLACK COPY ON FLUORESCENT ORANGE SHEETING.
4. WHEN WORK ZONE IS NO LONGER NEEDED, ALL SIGNS SHALL BE COVERED OR REMOVED AND ALL CHANNELIZING DEVICES SHALL BE MOVED TO THE SHOULDER EDGE.
5. ADDITIONAL FLAGGERS MAY BE NEEDED AS DIRECTED BY THE ENGINEER.
6. WHEN WORK IS REQUIRED AT NIGHT, FLAGGER STATIONS SHALL BE ILLUMINATED.
7. CHANNELIZING DEVICE TYPES FOR:
   A. APPROACH AND EXIT TAPERS- RETROREFLECTIVE PLASTIC DRUMS
   B. ALONG LANE LINE AND WORK ZONE- TRAFFIC CONES (28" HEIGHT)
8. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT. THIS WORK IS TO BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.



GENERAL NOTES:

1. THE LOCATION OF CHANNELIZING DEVICES AND THE WORK AREA LAYOUT SHALL BE BASED ON THE CRITERIA IN THE FOLLOWING TABLE:

POSTED SPEED AND/OR DESIGN SPEED	MAXIMUM CHANNELIZING DEVICE SPACING (††)		LONGITUDINAL BUFFER SPACE (††)	TAPER RATES†
	TAPER	ALONG LANE LINE & WORK ZONE		
mph				
40	80	80	305	2?:1
45	90	90	360	4?:1
50	100	100	425	50:1
55	110	110	495	55:1
60	120	120	570	60:1
65	130	130	645	65:1
70	140	140	730	70:1

† NOTE: TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATIONS:
L = WS FOR SPEEDS OF 45 mph OR GREATER
L = WS²/60 FOR SPEEDS OF 40 mph OR LESS
WHERE: L = MINIMUM LENGTH OF TAPER IN FEET
W = WIDTH OF OFFSET (USUALLY LANE WIDTH) IN FEET
S = DESIGN SPEED OR 85TH PERCENTILE SPEED IN MILES PER HOUR

†† NOTE: BUFFER SPACE MAY BE ADJUSTED AS NEEDED ACCORDING TO ROADWAY GEOMETRY TO MEET SIGHT DISTANCE REQUIREMENTS, AS DIRECTED BY THE ENGINEER.

2. FLASHING ARROW PANEL SHOULD BE AS LEVEL AS POSSIBLE AS APPROVED BY THE ENGINEER. FLASHING ARROW PANEL SHOULD BE LOCATED AT THE BEGINNING OF THE TAPER OR, IF THE SHOULDER IS TOO NARROW, BEHIND THE CHANNELIZING DEVICES IN THE CLOSED LANE.

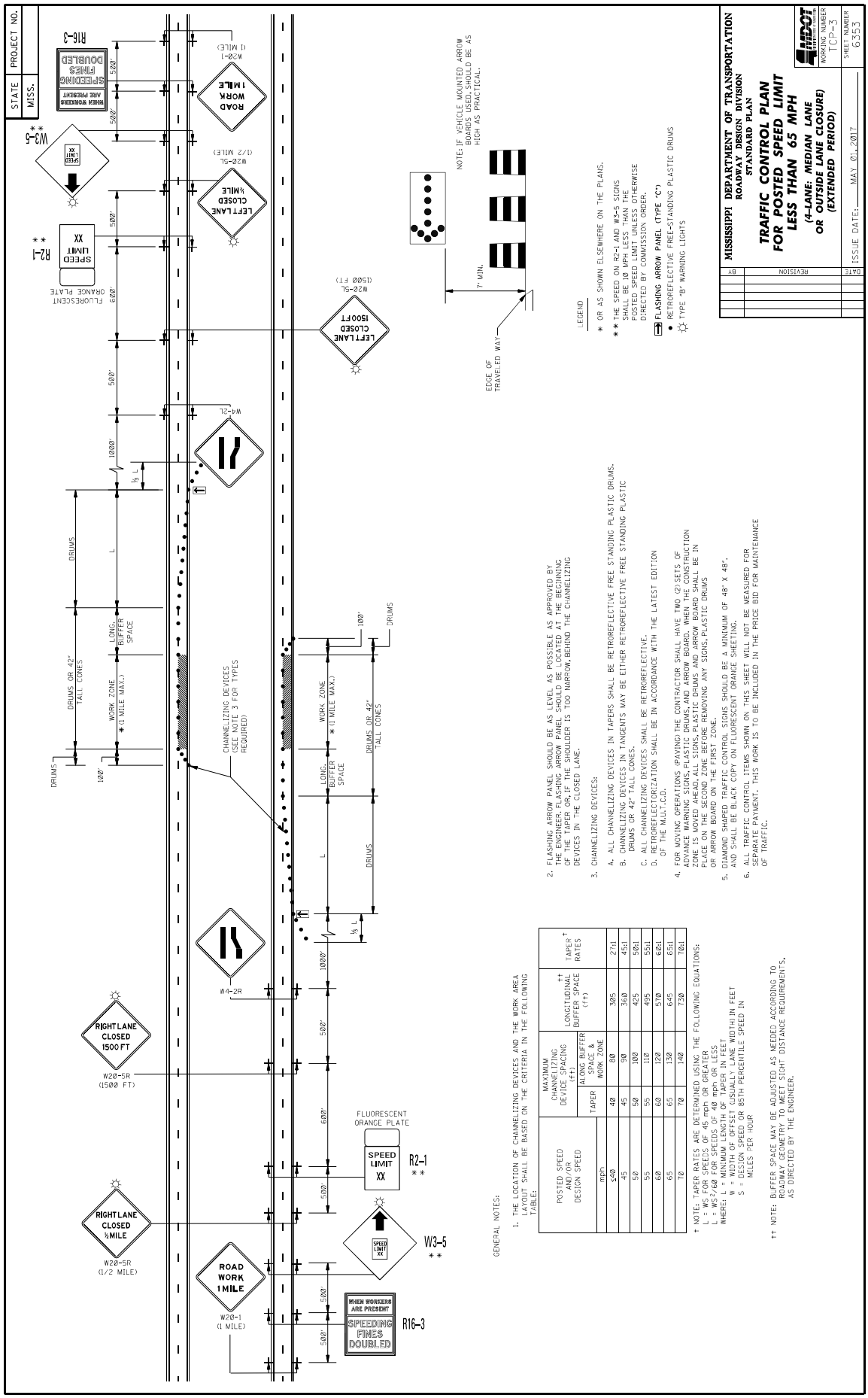
3. CHANNELIZING DEVICE TYPES FOR:
A. APPROACH TAPER- RETROREFLECTIVE PLASTIC DRUMS
B. ALONG LANE LINE AND WORK ZONE- TRAFFIC CONES (28" HEIGHT MINIMUM)
C. EXIT TAPER- TRAFFIC CONES (28" HEIGHT MINIMUM)

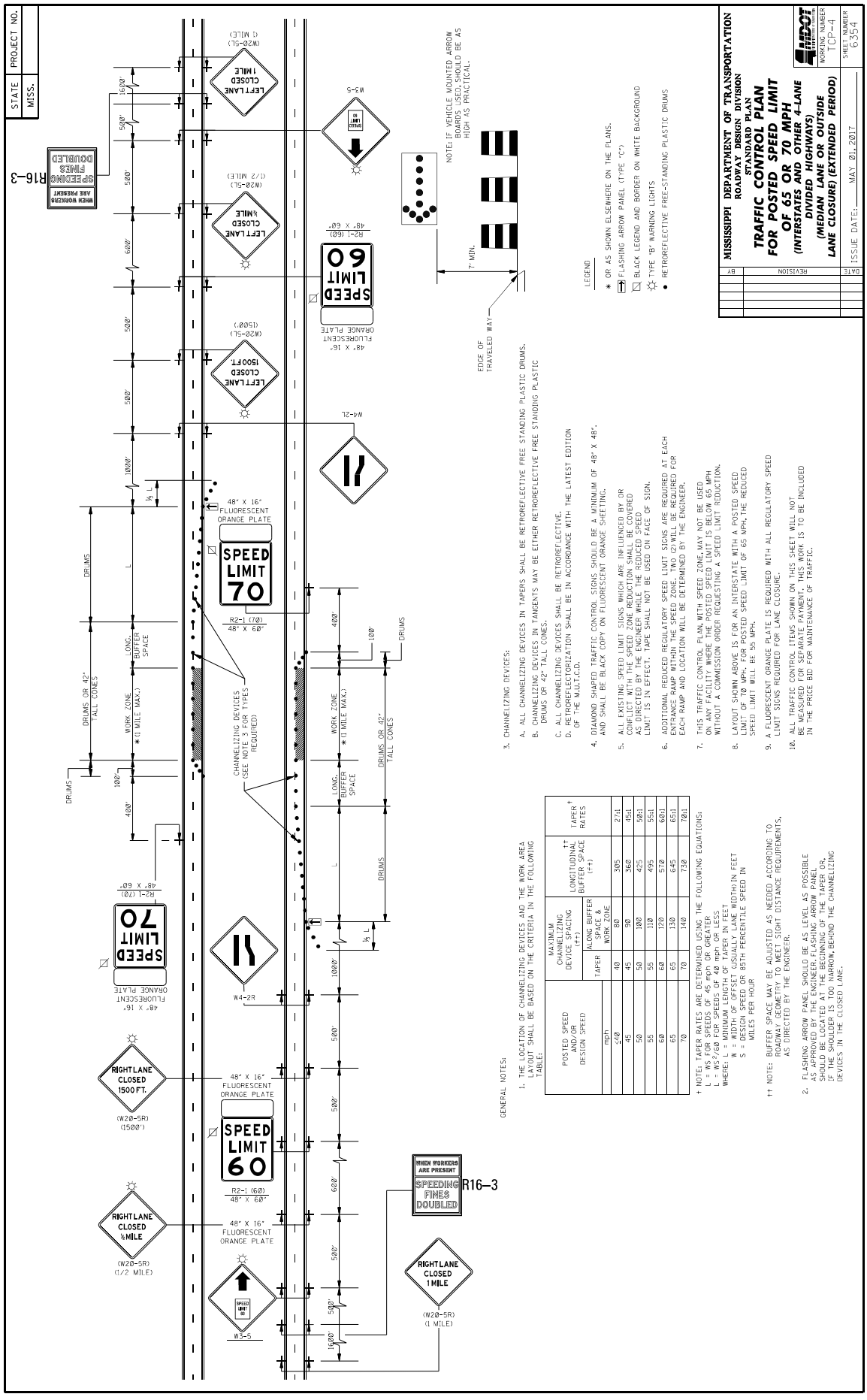
4. WHEN WORK ZONE IS NO LONGER NEEDED, ALL SIGNS SHALL BE COVERED OR REMOVED AND THE DRUMS SHALL BE MOVED TO THE SHOULDER EDGE AT THE END OF THE WORK DAY.

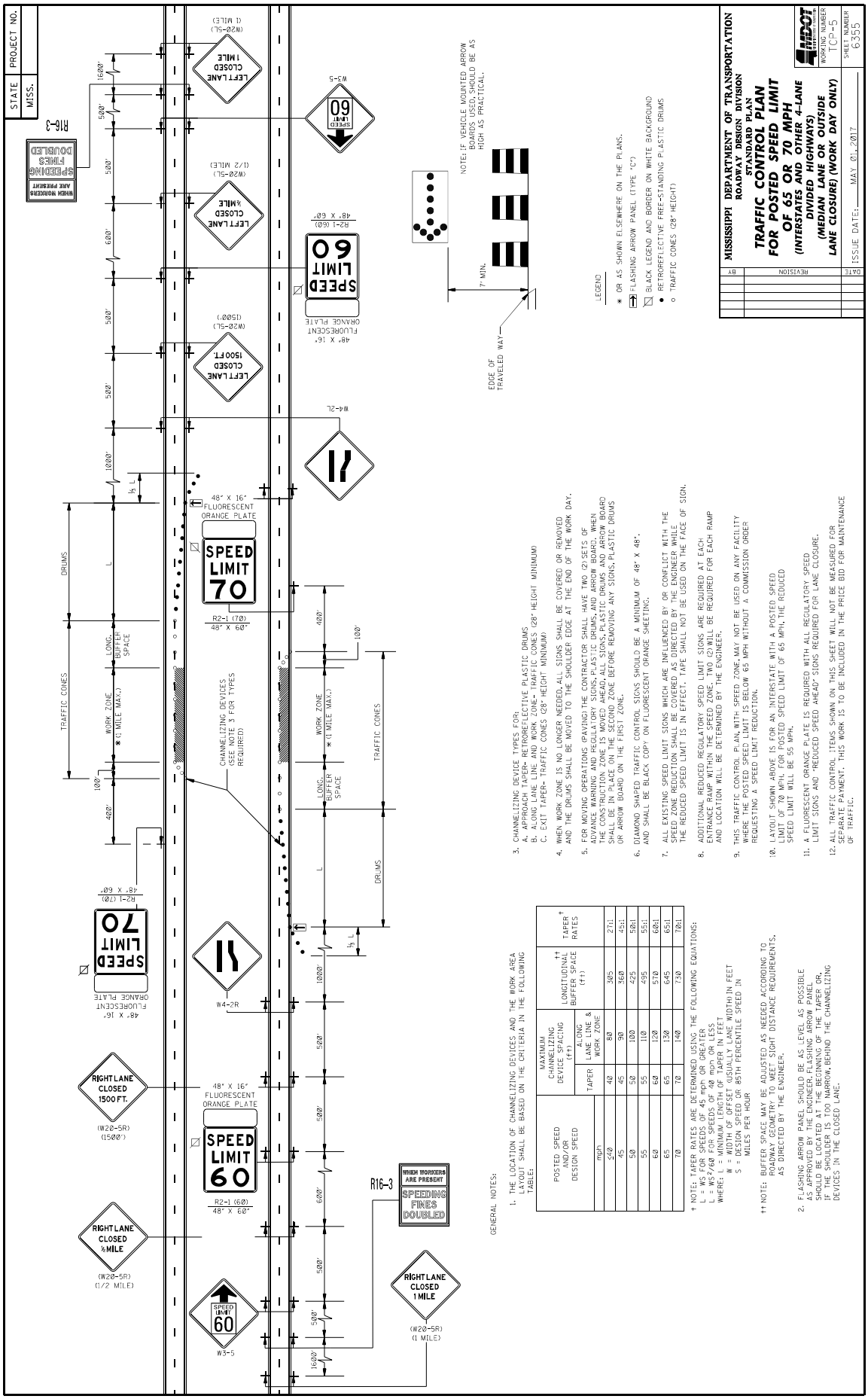
5. FOR MOVING OPERATIONS (PAVING) THE CONTRACTOR SHALL HAVE TWO (2) SETS OF ADVANCE WARNING SIGNS, PLASTIC DRUMS, AND ARROW BOARD. WHEN THE CONSTRUCTION ZONE IS MOVED AHEAD, ALL SIGNS, PLASTIC DRUMS AND ARROW BOARD SHALL BE IN PLACE ON THE SECOND ZONE BEFORE REMOVING ANY SIGNS, PLASTIC DRUMS OR ARROW BOARD ON THE FIRST ZONE.

6. DIAMOND SHAPED TRAFFIC CONTROL SIGNS SHOULD BE A MINIMUM OF 48" X 48", AND SHALL BE BLACK COPY ON FLUORESCENT ORANGE SHEETING.

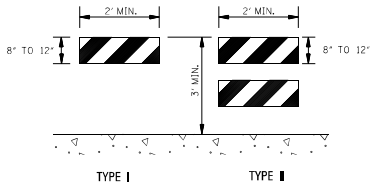
7. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT. THIS WORK IS TO BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.

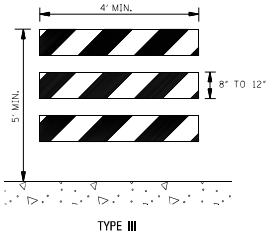

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
TRAFFIC CONTROL PLAN
FOR POSTED SPEED LIMIT
LESS THAN 65 MPH
(4-LANE: MEDIAN LANE
OR OUTSIDE LANE CLOSURE)
(EXTENDED PERIOD)
WORKING NUMBER TCP-3
SHEET NUMBER 6353
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
LEGEND
* OR AS SHOWN ELSEWHERE ON THE PLANS.
** THE SPEED ON R2-1 AND W3-5 SIGNS SHALL BE 10 MPH LESS THAN THE POSTED SPEED LIMIT UNLESS OTHERWISE DIRECTED BY COMMISSION ORDER.
FLASHING ARROW PANEL (TYPE "C")
RETROREFLECTIVE FREE-STANDING PLASTIC DRUMS
TYPE "B" WARNING LIGHTS
NOTE: IF VEHICLE MOUNTED ARROW BOARDS USED, SHOULD BE AS HIGH AS PRACTICAL.
7' MIN.
EDGE OF TRAVELED WAY
GENERAL NOTES:
1. THE LOCATION OF CHANNELIZING DEVICES AND THE WORK AREA LAYOUT SHALL BE BASED ON THE CRITERIA IN THE FOLLOWING TABLE:
POSTED SPEED AND/OR DESIGN SPEED
MAXIMUM CHANNELIZING DEVICE SPACING (FT)
TAPER
ALONG BUFFER SPACE & WORK ZONE
LONGITUDINAL †† BUFFER SPACE (FT)
TAPER † RATES
mph
≤40 40 60 305 2:1
45 45 90 360 4:1
50 50 100 425 5:1
55 55 110 495 5:1
60 60 120 570 6:1
65 65 130 645 6:1
70 70 140 730 7:1
† NOTE: TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATIONS:
L = WS²/60 FOR SPEEDS OF 45 mph OR GREATER
L = WS/60 FOR SPEEDS OF 40 mph OR LESS
WHERE: L = MINIMUM LENGTH OF TAPER IN FEET
W = WIDTH OF OFFSET (USUALLY LANE WIDTH) IN FEET
S = DESIGN SPEED OR 85TH PERCENTILE SPEED IN MILES PER HOUR
†† NOTE: BUFFER SPACE MAY BE ADJUSTED AS NEEDED ACCORDING TO ROADWAY GEOMETRY TO MEET SIGHT DISTANCE REQUIREMENTS, AS DIRECTED BY THE ENGINEER.
2. FLASHING ARROW PANEL SHOULD BE AS LEVEL AS POSSIBLE AS APPROVED BY THE ENGINEER. ARROW PANEL SHOULD BE LOCATED AT THE BEGINNING OF THE TAPER OR IN THE SHOULDER IS TOO NARROW, BEHIND THE CHANNELIZING DEVICES IN THE CLOSED LANE.
3. CHANNELIZING DEVICES:
4. ALL CHANNELIZING DEVICES IN TAPERS SHALL BE RETROREFLECTIVE FREE STANDING PLASTIC DRUMS.
B. CHANNELIZING DEVICES IN TANGENTS MAY BE EITHER RETROREFLECTIVE FREE STANDING PLASTIC DRUMS OR 42" TALL CONES.
C. ALL CHANNELIZING DEVICES SHALL BE RETROREFLECTIVE.
D. RETROREFLECTORIZATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE M.U.T.C.D.
4. FOR MOVING OPERATIONS (PAVING) THE CONTRACTOR SHALL HAVE TWO (2) SETS OF ADVANCE WARNING SIGNS, PLASTIC DRUMS, AND ARROW BOARD, WHEN THE CONSTRUCTION ZONE IS MOVED AHEAD ALL SIGNS, PLASTIC DRUMS AND ARROW BOARD SHALL BE IN PLACE IN THE SECOND ZONE BEFORE REMOVING ANY SIGNS, PLASTIC DRUMS OR ARROW BOARD ON THE FIRST ZONE.
5. DIAMOND SHAPED TRAFFIC CONTROL SIGNS SHOULD BE A MINIMUM OF 48" X 48", AND SHALL BE BLACK COPY ON FLUORESCENT ORANGE SHEETING.
6. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT. THIS WORK IS TO BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.
ROAD WORK 1 MILE
W20-1 (1 MILE)
LEFT LANE CLOSED 1 MILE
W20-5L (1/2 MILE)
LEFT LANE CLOSED 1500FT
W20-5L (1500 FT)
RIGHT LANE CLOSED 1500 FT
W20-5R (1500 FT)
RIGHT LANE CLOSED ½MILE
W20-5R (1/2 MILE)
SPEED LIMIT XX
R2-1 **
FLUORESCENT ORANGE PLATE
W3-5 **
WHEN WORKERS ARE PRESENT
SPEEDING FINES DOUBLED
R16-3
W4-2L
W4-2R
CHANNELIZING DEVICES (SEE NOTE 3 FOR TYPES REQUIRED)
DRUMS
DRUMS OR 42" TALL CONES
WORK ZONE * (1 MILE MAX.)
LONG. BUFFER SPACE
L
½ L
100'
500'
600'
1000'


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
TRAFFIC CONTROL PLAN
FOR POSTED SPEED LIMIT
OF 65 OR 70 MPH
(INTERSTATES AND OTHER 4-LANE DIVIDED HIGHWAYS)
(MEDIAN LANE OR OUTSIDE LANE CLOSURE) (EXTENDED PERIOD)
WORKING NUMBER TCP-4
SHEET NUMBER 6354
ISSUE DATE: MAY 01, 2017
REVISION
DATE
BY
LEGEND
* OR AS SHOWN ELSEWHERE ON THE PLANS.
FLASHING ARROW PANEL (TYPE "C")
BLACK LEGEND AND BORDER ON WHITE BACKGROUND
TYPE 'B' WARNING LIGHTS
RETROREFLECTIVE FREE-STANDING PLASTIC DRUMS
NOTE: IF VEHICLE MOUNTED ARROW BOARDS USED, SHOULD BE AS HIGH AS PRACTICAL.
7' MIN.
EDGE OF TRAVELED WAY
GENERAL NOTES:
1. THE LOCATION OF CHANNELIZING DEVICES AND THE WORK AREA LAYOUT SHALL BE BASED ON THE CRITERIA IN THE FOLLOWING TABLE:
POSTED SPEED AND/OR DESIGN SPEED
MAXIMUM CHANNELIZING DEVICE SPACING
ALONG BUFFER SPACE & WORK ZONE
TAPER
LONGITUDINAL BUFFER SPACE (++)
TAPER† RATES
mph
≤40 40 80 305 2:1
45 45 90 360 45:1
50 50 100 425 50:1
55 55 110 495 55:1
60 60 120 570 60:1
65 65 130 645 65:1
70 70 140 730 70:1
† NOTE: TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATIONS:
L = WS FOR SPEEDS OF 45 mph OR GREATER
L = WS²/60 FOR SPEEDS OF 40 mph OR LESS
WHERE: L = MINIMUM LENGTH OF TAPER IN FEET
W = WIDTH OF OFFSET (USUALLY LANE WIDTH) IN FEET
S = DESIGN SPEED OR 85TH PERCENTILE SPEED IN MILES PER HOUR
†† NOTE: BUFFER SPACE MAY BE ADJUSTED AS NEEDED ACCORDING TO ROADWAY GEOMETRY TO MEET SIGHT DISTANCE REQUIREMENTS, AS DIRECTED BY THE ENGINEER.
2. FLASHING ARROW PANEL SHOULD BE AS LEVEL AS POSSIBLE AS APPROVED BY THE ENGINEER. FLASHING ARROW PANEL SHOULD BE LOCATED AT THE BEGINNING OF THE TAPER OR, IF THE SHOULDER IS TOO NARROW, BEHIND THE CHANNELIZING DEVICES IN THE CLOSED LANE.
3. CHANNELIZING DEVICES:
A. ALL CHANNELIZING DEVICES IN TAPERS SHALL BE RETROREFLECTIVE FREE STANDING PLASTIC DRUMS.
B. CHANNELIZING DEVICES IN TANGENTS MAY BE EITHER RETROREFLECTIVE FREE STANDING PLASTIC DRUMS OR 42" TALL CONES.
C. ALL CHANNELIZING DEVICES SHALL BE RETROREFLECTIVE.
D. RETROREFLECTORIZATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE M.U.T.C.D.
4. DIAMOND SHAPED TRAFFIC CONTROL SIGNS SHOULD BE A MINIMUM OF 48" X 48", AND SHALL BE BLACK COPY ON FLUORESCENT ORANGE SHEETING.
5. ALL EXISTING SPEED LIMIT SIGNS WHICH ARE INFLUENCED BY OR CONFLICT WITH THE SPEED ZONE REDUCTION SHALL BE COVERED AS DIRECTED BY THE ENGINEER WHILE THE REDUCED SPEED LIMIT IS IN EFFECT. TAPE SHALL NOT BE USED ON FACE OF SIGN.
6. ADDITIONAL REDUCED REGULATORY SPEED LIMIT SIGNS ARE REQUIRED AT EACH ENTRANCE RAMP WITHIN THE SPEED ZONE. TWO (2) WILL BE REQUIRED FOR EACH RAMP AND LOCATION WILL BE DETERMINED BY THE ENGINEER.
7. THIS TRAFFIC CONTROL PLAN, WITH SPEED ZONE, MAY NOT BE USED ON ANY FACILITY WHERE THE POSTED SPEED LIMIT IS BELOW 65 MPH WITHOUT A COMMISSION ORDER REQUESTING A SPEED LIMIT REDUCTION.
8. LAYOUT SHOWN ABOVE IS FOR AN INTERSTATE WITH A POSTED SPEED LIMIT OF 70 MPH. FOR POSTED SPEED LIMIT OF 65 MPH, THE REDUCED SPEED LIMIT WILL BE 55 MPH.
9. A FLUORESCENT ORANGE PLATE IS REQUIRED WITH ALL REGULATORY SPEED LIMIT SIGNS REQUIRED FOR LANE CLOSURE.
10. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT; THIS WORK IS TO BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.
LEFT LANE CLOSED 1 MILE
(W20-5L) (1 MILE)
LEFT LANE CLOSED ½ MILE
(W20-5L) (1/2 MILE)
LEFT LANE CLOSED 1500 FT
(W20-5L) (1500')
SPEED LIMIT 60
48" X 16" FLUORESCENT ORANGE PLATE
R2-1 (60) 48" X 60"
W4-2L
SPEED LIMIT 70
R2-1 (70) 48" X 60"
W4-2R
RIGHT LANE CLOSED 1500 FT.
(W20-5R) (1500')
RIGHT LANE CLOSED ½ MILE
(W20-5R) (1/2 MILE)
RIGHT LANE CLOSED 1 MILE
(W20-5R) (1 MILE)
W3-5
SPEED LIMIT 60
R2-1 (60) 48" X 60"
48" X 16" FLUORESCENT ORANGE PLATE
WHEN WORKERS ARE PRESENT
SPEEDING FINES DOUBLED
R16-3
CHANNELIZING DEVICES (SEE NOTE 3 FOR TYPES REQUIRED)
DRUMS
DRUMS OR 42" TALL CONES
WORK ZONE (* MILE MAX.)
LONG. BUFFER SPACE
L
½ L
100'
200'
400'
500'
600'
1000'
1500'


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
TRAFFIC CONTROL PLAN
FOR POSTED SPEED LIMIT
OF 65 OR 70 MPH
(INTERSTATES AND OTHER 4-LANE DIVIDED HIGHWAYS)
(MEDIAN LANE OR OUTSIDE LANE CLOSURE) (WORK DAY ONLY)
WORKING NUMBER TCP-5
SHEET NUMBER 6355
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
LEGEND
* OR AS SHOWN ELSEWHERE ON THE PLANS.
FLASHING ARROW PANEL (TYPE "C")
BLACK LEGEND AND BORDER ON WHITE BACKGROUND
RETROREFLECTIVE FREE-STANDING PLASTIC DRUMS
TRAFFIC CONES (28" HEIGHT)
NOTE: IF VEHICLE MOUNTED ARROW BOARDS USED, SHOULD BE AS HIGH AS PRACTICAL.
7' MIN.
EDGE OF TRAVELED WAY
GENERAL NOTES:
1. THE LOCATION OF CHANNELIZING DEVICES AND THE WORK AREA LAYOUT SHALL BE BASED ON THE CRITERIA IN THE FOLLOWING TABLE:
POSTED SPEED AND/OR DESIGN SPEED
MAXIMUM CHANNELIZING DEVICE SPACING (ft)
TAPER
ALONG LANE LINE & WORK ZONE
LONGITUDINAL BUFFER SPACE (ft) ††
TAPER† RATES
mph
40 80 305 2.1:1
45 90 360 4.5:1
50 100 425 5.0:1
55 110 495 5.5:1
60 120 570 6.0:1
65 130 645 6.5:1
70 140 730 7.0:1
† NOTE: TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATIONS:
L = WS FOR SPEEDS OF 45 mph OR GREATER
L = WS²/60 FOR SPEEDS OF 40 mph OR LESS
WHERE: L = MINIMUM LENGTH OF TAPER IN FEET
W = WIDTH OF OFFSET (USUALLY LANE WIDTH) IN FEET
S = DESIGN SPEED OR 85TH PERCENTILE SPEED IN MILES PER HOUR
†† NOTE: BUFFER SPACE MAY BE ADJUSTED AS NEEDED ACCORDING TO ROADWAY GEOMETRY TO MEET SIGHT DISTANCE REQUIREMENTS, AS DIRECTED BY THE ENGINEER.
2. FLASHING ARROW PANEL SHOULD BE AS LEVEL AS POSSIBLE AS APPROVED BY THE ENGINEER. FLASHING ARROW PANEL SHOULD BE LOCATED AT THE BEGINNING OF THE TAPER OR, IF THE SHOULDER IS TOO NARROW, BEHIND THE CHANNELIZING DEVICES IN THE CLOSED LANE.
3. CHANNELIZING DEVICE TYPES FOR:
A. APPROACH TAPER- RETROREFLECTIVE PLASTIC DRUMS
B. ALONG LANE LINE AND WORK ZONE- TRAFFIC CONES (28" HEIGHT MINIMUM)
C. EXIT TAPER- TRAFFIC CONES (28" HEIGHT MINIMUM)
4. WHEN WORK ZONE IS NO LONGER NEEDED, ALL SIGNS SHALL BE COVERED OR REMOVED AND THE DRUMS SHALL BE MOVED TO THE SHOULDER EDGE AT THE END OF THE WORK DAY.
5. FOR MOVING OPERATIONS (PAVING) THE CONTRACTOR SHALL HAVE TWO (2) SETS OF ADVANCE WARNING AND REGULATORY SIGNS, PLASTIC DRUMS, AND ARROW BOARD. WHEN THE CONSTRUCTION ZONE IS MOVED AHEAD, ALL SIGNS, PLASTIC DRUMS AND ARROW BOARD SHALL BE IN PLACE ON THE SECOND ZONE BEFORE REMOVING ANY SIGNS, PLASTIC DRUMS OR ARROW BOARD ON THE FIRST ZONE.
6. DIAMOND SHAPED TRAFFIC CONTROL SIGNS SHOULD BE A MINIMUM OF 48" X 48", AND SHALL BE BLACK COPY ON FLUORESCENT ORANGE SHEETING.
7. ALL EXISTING SPEED LIMIT SIGNS WHICH ARE INFLUENCED BY OR CONFLICT WITH THE SPECIAL SPEED REDUCTION SHALL BE COVERED AS DIRECTED BY THE ENGINEER WHILE THE REDUCED SPEED LIMIT IS IN EFFECT. TAPE SHALL NOT BE USED ON THE FACE OF SIGN.
8. ADDITIONAL REDUCED REGULATORY SPEED LIMIT SIGNS ARE REQUIRED AT EACH ENTRANCE RAMP WITHIN THE SPEED ZONE. TWO (2) WILL BE REQUIRED FOR EACH RAMP AND LOCATION WILL BE DETERMINED BY THE ENGINEER.
9. THIS TRAFFIC CONTROL PLAN WITH SPEED ZONE MAY NOT BE USED ON ANY FACILITY WHERE THE POSTED SPEED LIMIT IS BELOW 65 MPH WITHOUT A COMMISSION ORDER REQUESTING A SPEED LIMIT REDUCTION.
10. LAYOUT SHOWN ABOVE IS FOR AN INTERSTATE WITH A POSTED SPEED LIMIT OF 70 MPH. FOR POSTED SPEED LIMIT OF 65 MPH, THE REDUCED SPEED LIMIT WILL BE 55 MPH.
11. A FLUORESCENT ORANGE PLATE IS REQUIRED WITH ALL REGULATORY SPEED LIMIT SIGNS AND "REDUCED SPEED AHEAD" SIGNS REQUIRED FOR LANE CLOSURE.
12. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT. THIS WORK IS TO BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.
LEFT LANE CLOSED 1 MILE
(M20-5L) (1 MILE)
LEFT LANE CLOSED ½ MILE
(M20-5L) (1/2 MILE)
LEFT LANE CLOSED 1500 FT.
(M20-5L) (1500')
SPEED LIMIT 60
R2-1 (60) 48" X 60"
FLUORESCENT ORANGE PLATE 48" X 16"
SPEED LIMIT 70
R2-1 (70) 48" X 60"
48" X 16" FLUORESCENT ORANGE PLATE
SPEEDING FINES DOUBLED
WHEN WORKERS ARE PRESENT
R16-3
M3-5
M4-2L
W4-2R
RIGHT LANE CLOSED 1500 FT.
(W20-5R) (1500')
RIGHT LANE CLOSED ½ MILE
(W20-5R) (1/2 MILE)
RIGHT LANE CLOSED 1 MILE
(W20-5R) (1 MILE)
SPEED LIMIT 60
W3-5
CHANNELIZING DEVICES SEE NOTE 3 FOR TYPES REQUIRED
TRAFFIC CONES
DRUMS
WORK ZONE * (1 MILE MAX.)
LONG. BUFFER SPACE
100'
400'
500'
600'
1000'
1600'
½ L
L
W

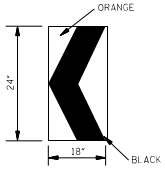
STATE	PROJECT NO.
MISS.	





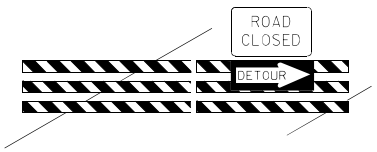
STANDARD BARRICADES

1. THE MARKING FOR BARRICADE RAILS SHALL BE ORANGE AND WHITE (SLOPING DOWNWARD AT AN ANGLE OF 45° IN THE DIRECTION TRAFFIC IS TO PASS).
2. RAIL STRIPE SHALL BE 6 INCHES, EXCEPT THAT 4-INCH WIDE STRIPES MAY BE USED IF RAIL LENGTHS ARE LESS THAN 36 INCHES.
3. DO NOT PLACE SANDBAGS OR OTHER DEVICES TO PROVIDE MASS ON THE BOTTOM RAIL THAT WILL BLOCK VIEW OR RAIL FACE.
4. FOR ADDITIONAL INFORMATION OR DETAILS, SEE MUTCD, LATEST EDITION.
5. BARRICADES ARE CLASSIFIED BY FHWA AS CATEGORY II WORK ZONE DEVICES WHICH REQUIRE CRASHWORTHINESS ACCEPTANCE LETTERS. TO DATE, 2-IN. THICK TIMBER RAILS HAVE NOT BEEN SUCCESSFULLY CRASH TESTED. A LIST OF CRASHWORTHY BARRICADES AND OTHER CATAGORY II DEVICES CAN BE FOUND ON FHWA'S WEBSITE: http://safety.fhwa.dot.gov/roadway_dept/policy.guice/road_hardware/cat2.cfm



CHEVRON SIGN DETAIL

1. A CHEVRON SIGN CONSISTS OF A BLACK CHEVRON TYPE MARKING ON AN ORANGE BACKGROUND AND SHALL POINT IN THE DIRECTION OF TRAFFIC FLOW.
2. THE CHEVRON SIGN SHALL BE MOUNTED ON CRASHWORTHY SUPPORT.
3. CHEVRON SIGNS MAY BE USED TO SUPPLEMENT OTHER STANDARD DEVICES WHERE ONE OR MORE LANES ARE CLOSED FOR CONSTRUCTION OR MAINTENANCE. THEY SHOULD BE PLACED APPROXIMATELY 2'-0" BEHIND THE LANE TRANSITION STRIPE.



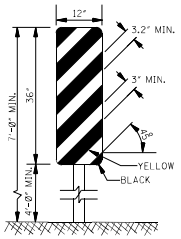
BARRICADE CLOSING A ROAD

BARRICADE CHARACTERISTICS

	I	II	III
WIDTH OF RAIL **	8" MIN. - 12" MAX.	8" MIN. - 12" MAX.	8" MIN. - 12" MAX.
LENGTH OF RAIL **	24" MIN.	24" MIN.	48" MIN.
WIDTH OF STRIPE *	6"	6"	6"
HEIGHT	36" MIN.	36" MIN.	60" MIN.
NUMBER OF RETROREFLECTORIZED RAIL FACES	2 (ONE EACH DIRECTION)	4 (TWO EACH DIRECTION)	3 IF FACING TRAFFIC IN ONE DIRECTION 6 IF FACING TRAFFIC IN TWO DIRECTIONS

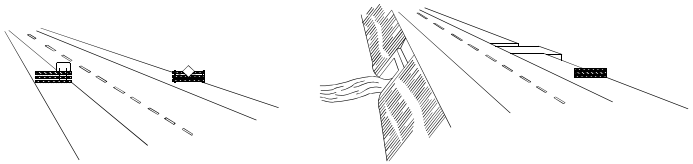
* 1. FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED.

** 2. BARRICADES INTENDED FOR USE ON EXPRESSWAYS, FREEWAYS AND OTHER HIGH SPEED ROADWAYS, SHALL HAVE A MINIMUM OF 270 in^2 OF REFLECTIVE AREA FACING TRAFFIC.



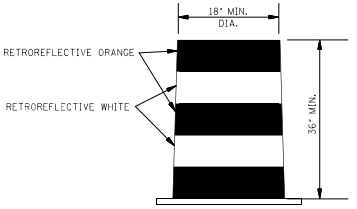
TYPE 3 OBJECT MARKER (OM-3R)

1. TYPE 3 OBJECT MARKERS SHALL BE USED AT ALL EXPOSED BRIDGE ABUTMENTS AND AT OTHER LOCATIONS AS DEEMED NECESSARY BY THE ENGINEER.
2. THE OM-3R IS SHOWN. THE OM-3L IS SIMILAR EXCEPT THE STRIPES SLOPE DOWNWARD FROM THE UPPER LEFT SIDE TO THE LOWER RIGHT SIDE AND SHALL BE PLACED ON THE LEFT SIDE OF THE OBJECT.
3. THE INSIDE EDGE OF THE MARKER SHALL BE IN LINE WITH THE INNER EDGE OF THE OBSTRUCTION.



WING BARRICADES

1. WING BARRICADES ARE TYPE III BARRICADES ERECTED ON THE SHOULDER ON ONE OR BOTH SIDES OF THE PAVEMENT TO GIVE THE SENSATION OF A NARROWING OR RESTRICTED ROADWAY. WING BARRICADES MAY BE USED AS A MOUNTING FOR THE ADVANCE WARNING SIGNS OR FLASHERS.
2. WING BARRICADES SHOULD BE USED:
   A. IN ADVANCE OF A CONSTRUCTION PROJECT EVEN WHEN NO PART OF THE ROADWAY IS ACTUALLY CLOSED.
   B. IN ADVANCE OF ALL BRIDGE OR CULVERT WIDENING OPERATIONS.



PLASTIC DRUM STRIPING DETAIL

1. PLASTIC DRUMS SHALL BE ON END AND USED AS AN EXPEDIENT METHOD FOR TRAFFIC CHANNELIZATION. THE COLOR AND MARKING OF DRUMS SHALL BE CONSISTENT WITH MARKING STANDARDS FOR BARRICADE. THE PREDOMINANT COLOR ON DRUMS SHALL BE ORANGE WITH FOUR (4) RETROREFLECTIVE, HORIZONTAL, CIRCUMFERENTIAL STRIPES (2 ORANGE & 2 WHITE) 6" WIDE.
2. DRUMS SHOULD NEVER BE PLACED IN THE ROADWAY WITHOUT WARNING SIGNS.
3. WHERE PRACTICAL PLASTIC DRUMS SHOULD BE PLACED NO CLOSER THAN 3'-0" FROM THE EDGE OF TRAVELED LANE.

BY | REVISION | DATE

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

HIGHWAY SIGN AND BARRICADE DETAILS FOR CONSTRUCTION PROJECTS

MDOT

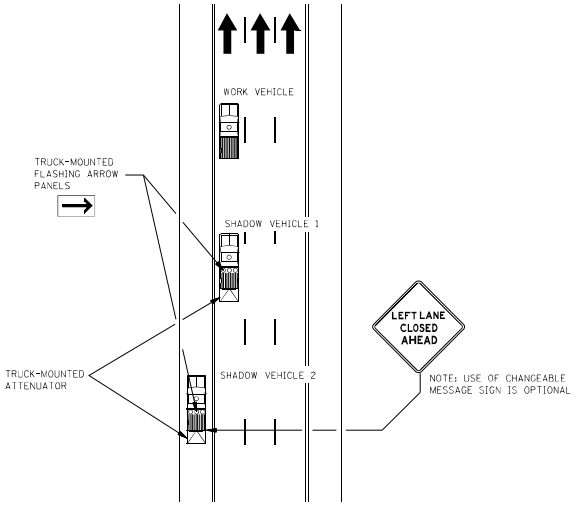
WORKING NUMBER: TCP-8

ISSUE DATE: MAY 01, 2017

SHEET NUMBER: 6358

STATE	PROJECT NO.
MISS.	

MOBILE OPERATIONS ON MULTILANE ROAD

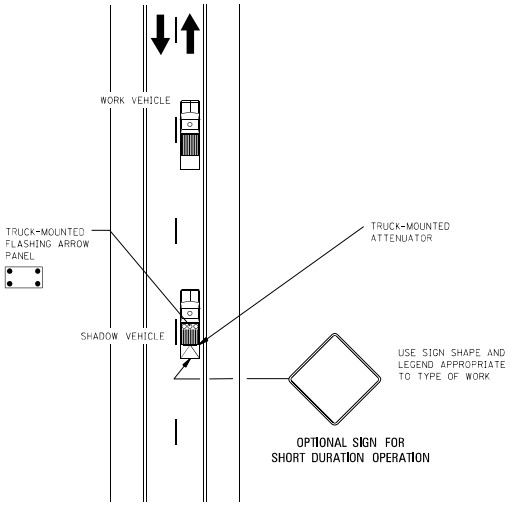


MOBILE OPERATIONS ON MULTILANE ROAD

NOTES FOR MULTILANE LANE OPERATION:

1. VEHICLES USED FOR THESE OPERATIONS SHOULD BE MADE HIGHLY VISIBLE WITH APPROPRIATE EQUIPMENT, SUCH AS FLASHING LIGHTS, ROTATING BEACONS, FLAGS, SIGNS, OR ARROW PANELS.
2. SHADOW VEHICLE 2 SHOULD BE EQUIPPED WITH AN ARROW PANEL AND TRUCK MOUNTED ATTENUATOR (TMA). AN APPROPRIATE LANE CLOSURE SIGN SHOULD BE PLACED ON SHADOW VEHICLE 2 SO AS NOT TO OBSCURE THE ARROW PANEL.
3. SHADOW VEHICLE 1 SHOULD BE EQUIPPED WITH AN ARROW PANEL AND TRUCK-MOUNTED ATTENUATOR (TMA).
4. SHADOW VEHICLE 2 SHOULD TRAVEL AT A VARYING DISTANCE FROM THE WORK OPERATION SO AS TO PROVIDE ADEQUATE SIGHT DISTANCE FOR TRAFFIC APPROACHING FROM THE REAR.
5. WHEN ADEQUATE SHOULDER WIDTH IS NOT AVAILABLE, SHADOW VEHICLE 2 SHOULD BE ELIMINATED.
6. ON HIGH-SPEED ROADWAYS, A THIRD SHADOW VEHICLE SHOULD BE USED (i.e., VEHICLE 3 ON THE SHOULDER (IF PRACTICAL), VEHICLE 2 IN THE CLOSED LANE, AND VEHICLE 1 IN THE CLOSED LANE).
7. ARROW PANELS SHALL BE AS A MINIMUM TYPE B, 60" X 30" IN ACCORDANCE WITH THE CRITERIA PRESENTED IN THE MUTCD.
8. WORK SHOULD NORMALLY BE DONE DURING OFF-PEAK HOURS.
9. VEHICLE-MOUNTED SIGNS SHOULD BE MOUNTED WITH THE BOTTOM OF THE SIGN LOCATED AT A MINIMUM HEIGHT OF 48" ABOVE THE PAVEMENT AND SHALL NOT BE OBSCURED BY EQUIPMENT OR SUPPLIES. SIGN LEGENDS SHALL BE COVERED OR TURNED FROM VIEW WHEN WORK IS NOT IN PROGRESS.
10. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT. THIS WORK IS TO BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.

MOBILE OPERATIONS ON TWO–LANE ROAD



MOBILE OPERATIONS ON TWO–LANE ROAD

NOTES FOR TWO-LANE OPERATION:

1. WHERE PRACTICAL AND WHEN NEEDED, THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS. IF THIS CAN NOT BE DONE FREQUENTLY, AS AN ALTERNATIVE, A "DO NOT PASS" SIGN MAY BE PLACED ON THE REAR OF THE VEHICLE BLOCKING THE LANE.
2. THE DISTANCE BETWEEN THE WORK AND SHADOW VEHICLES MAY VARY ACCORDING TO TERRAIN, PAINT DRYING TIME, AND OTHER FACTORS. SHADOW VEHICLES ARE USED TO WARN TRAFFIC OF THE OPERATION AHEAD. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, THE SHADOW VEHICLE SHOULD MAINTAIN THE MINIMUM DISTANCE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. THE SHADOW VEHICLE SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
3. ADDITIONAL SHADOW VEHICLES TO WARN AND REDUCE THE SPEED OF ONCOMING OR OPPOSING TRAFFIC MAY BE USED. POLICE PATROL CARS MAY BE USED FOR THIS PURPOSE.
4. A TRUCK-MOUNTED ATTENUATOR (TMA) SHOULD BE USED ON THE SHADOW VEHICLE AND MAY BE USED ON THE WORK VEHICLE.
5. THE WORK VEHICLE SHALL BE EQUIPPED WITH BEACONS, AND THE SHADOW VEHICLES SHALL BE EQUIPPED WITH TWO HIGH-INTENSITY FLASHING LIGHTS MOUNTED ON THE REAR, ADJACENT TO THE SIGN. SHADOW AND WORK VEHICLES SHALL DISPLAY FLASHING OR ROTATING BEACONS BOTH FORWARD AND TO THE REAR.
6. VEHICLE-MOUNTED SIGNS SHOULD BE MOUNTED WITH THE BOTTOM OF THE SIGN LOCATED AT A MINIMUM HEIGHT OF 48" ABOVE THE PAVEMENT AND SHALL NOT BE OBSCURED BY EQUIPMENT OR SUPPLIES. SIGN LEGENDS SHALL BE COVERED OR TURNED FROM VIEW WHEN WORK IS NOT IN PROGRESS.
7. ARROW BOARD TO BE USED IN CAUTION MODE.
8. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT. THIS WORK IS TO BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.

DATE	REVISION	BY

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

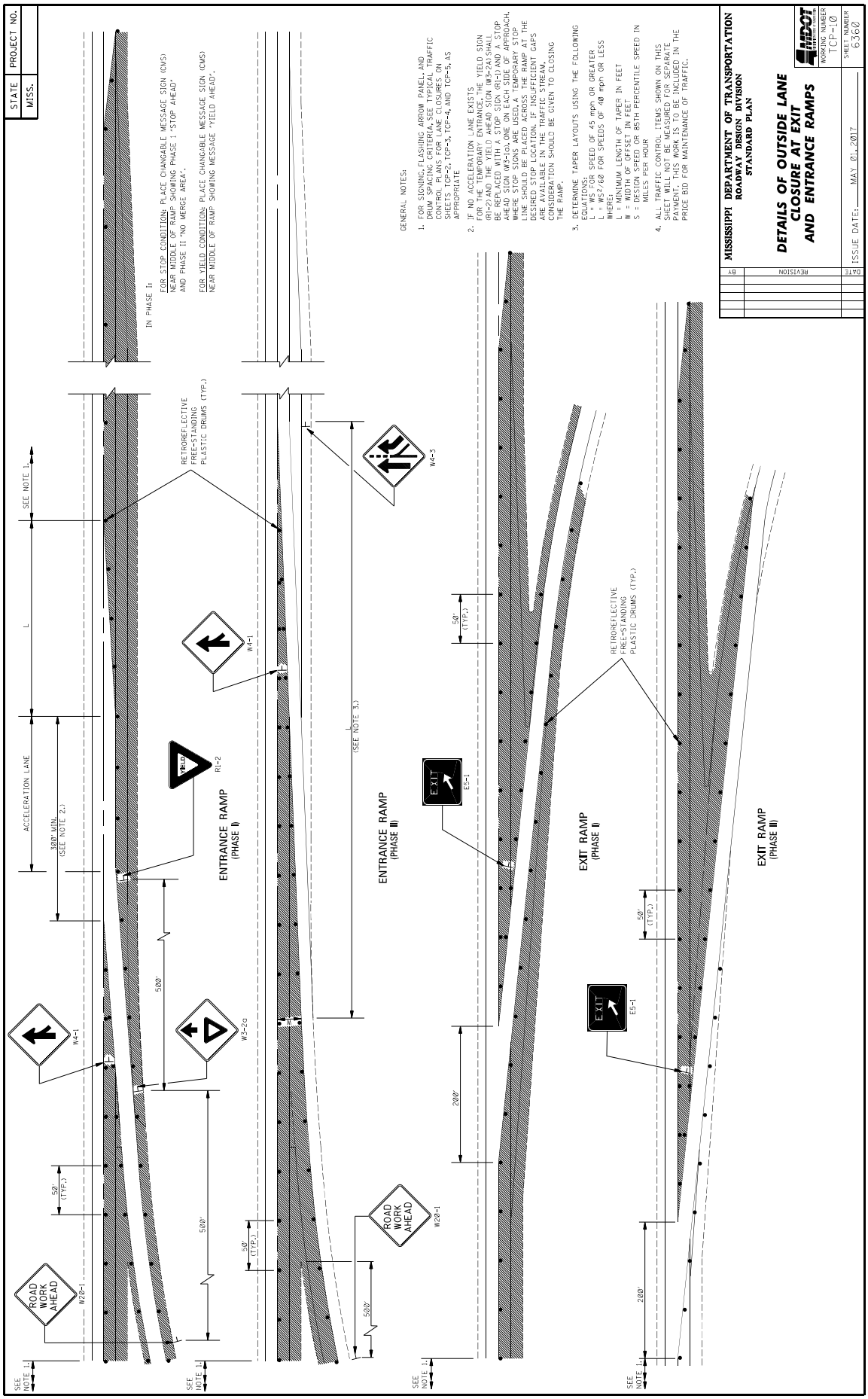
TRAFFIC CONTROL PLAN MOBILE OPERATIONS MULTILANE ROADS AND TWO–LANE ROADS

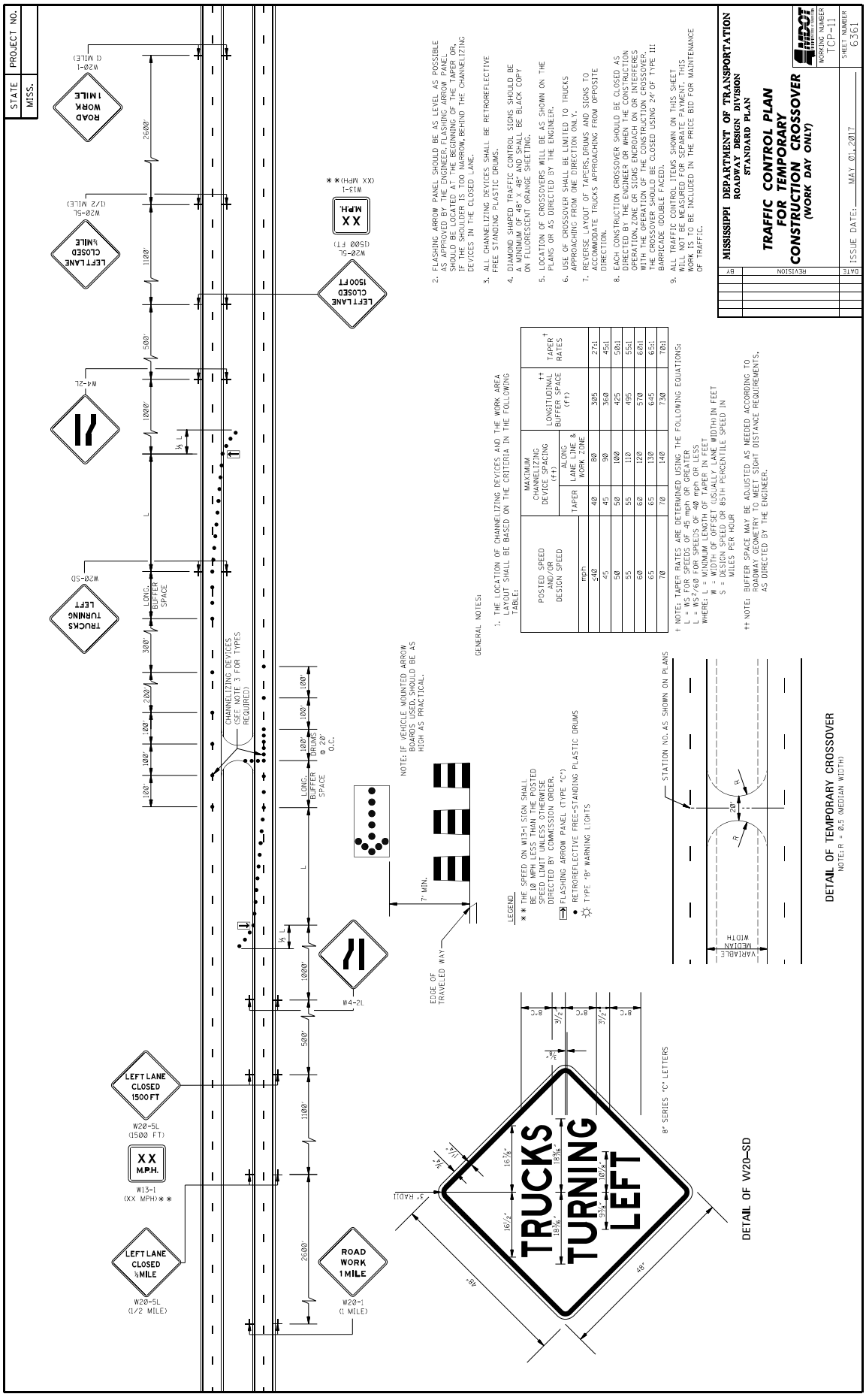
ISSUE DATE: MAY 01, 2017

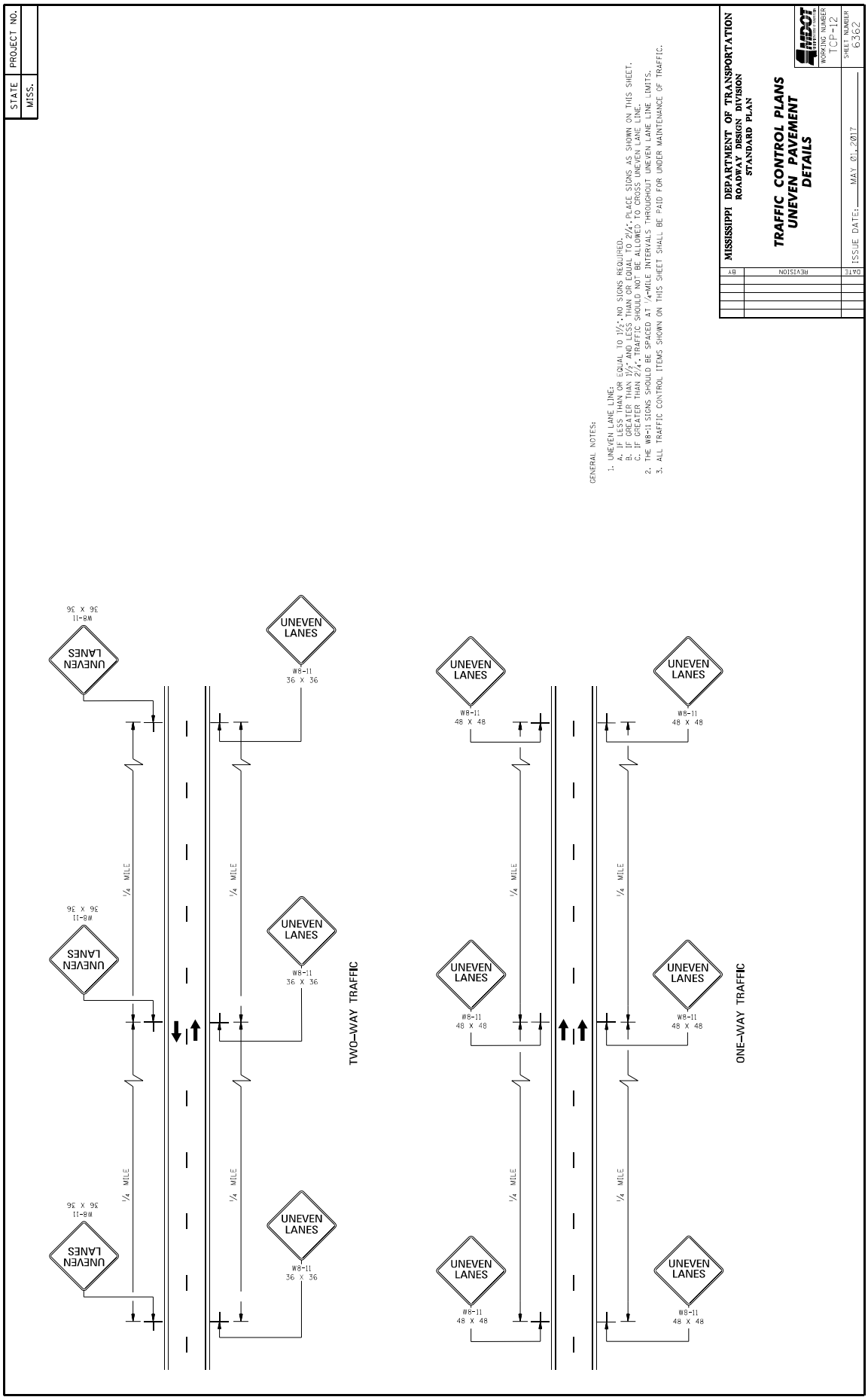
MDOT

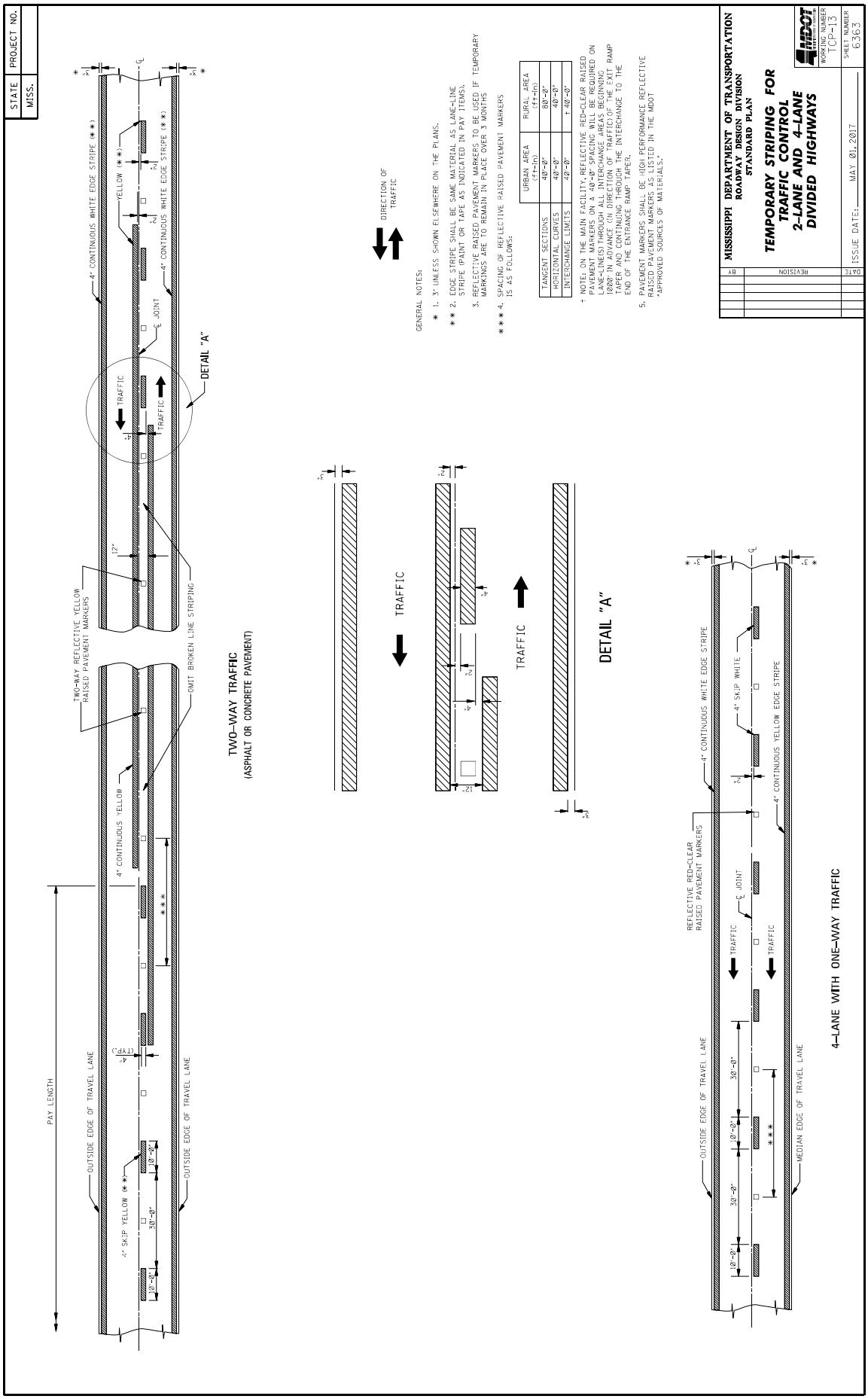
WORKING NUMBER TCP-9

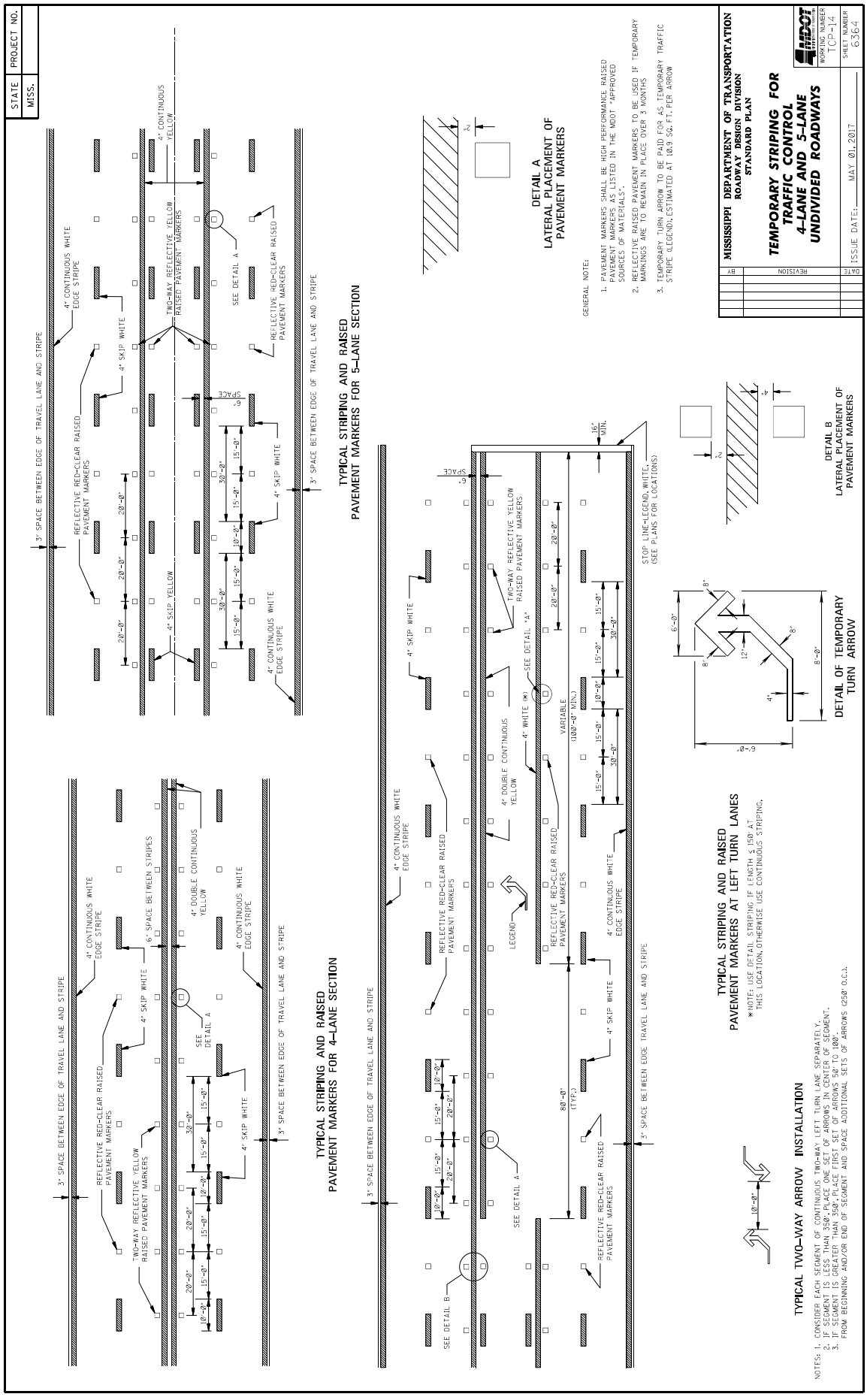
SHEET NUMBER 6359

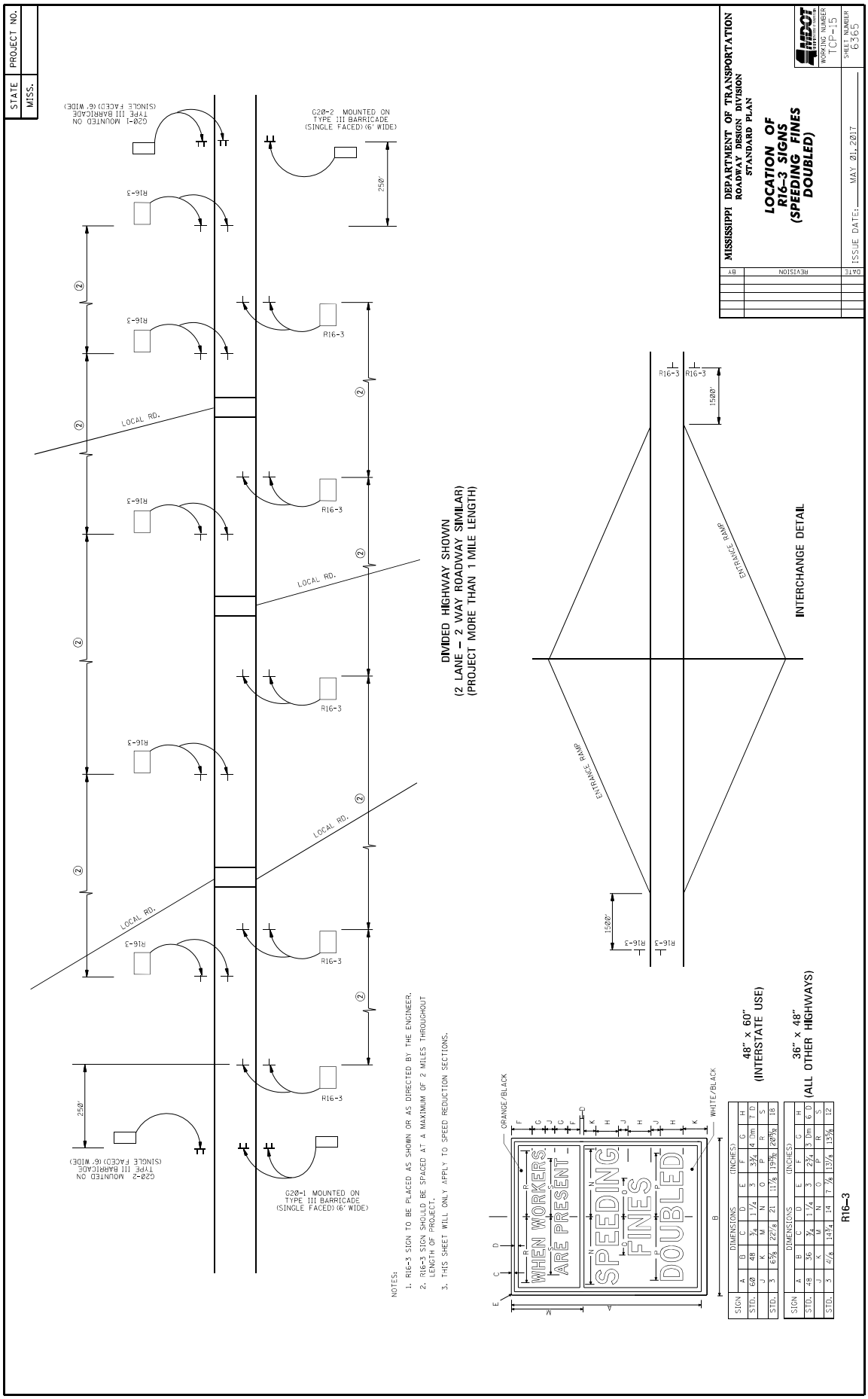

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
DETAILS OF OUTSIDE LANE CLOSURE AT EXIT AND ENTRANCE RAMPS
WORKING NUMBER TCP-10
SHEET NUMBER 6360
ISSUE DATE: MAY 01, 2017
BY REVISION DATE
GENERAL NOTES:
1. FOR SIGNING, FLASHING ARROW PANEL AND DRUM SPACING CRITERIA, SEE TYPICAL TRAFFIC CONTROL PLANS FOR LANE CLOSURES ON SHEETS TCP-2, TCP-3, TCP-4, AND TCP-5, AS APPROPRIATE
2. IF NO ACCELERATION LANE EXISTS FOR THE TEMPORARY ENTRANCE, THE YIELD SIGN (R1-2) AND THE YIELD AHEAD SIGN (W3-2A) SHALL BE REPLACED WITH A STOP SIGN (R1-1) AND A STOP AHEAD SIGN (W3-1b), ONE ON EACH SIDE OF APPROACH. WHERE STOPPING IS USED AT A TEMPORARY STOP LINE, SHOULD BE PLACED ACROSS THE RAMP AT THE DESIRED STOP LOCATION. IF INSUFFICIENT GAPS ARE AVAILABLE IN THE TRAFFIC STREAM, CONSIDERATION SHOULD BE GIVEN TO CLOSING THE RAMP.
3. DETERMINE TAPER LAYOUTS USING THE FOLLOWING EQUATIONS:
L = WS FOR SPEED OF 45 mph OR GREATER
L = WS²/60 FOR SPEEDS OF 40 mph OR LESS
WHERE:
L = MINIMUM LENGTH OF TAPER IN FEET
W = WIDTH OF OFFSET IN FEET
S = DESIGN SPEED OR 85TH PERCENTILE SPEED IN MILES PER HOUR
4. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT. THIS WORK IS TO BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.
IN PHASE I:
FOR STOP CONDITION: PLACE CHANGABLE MESSAGE SIGN (CMS) NEAR MIDDLE OF RAMP SHOWING PHASE 1 "STOP AHEAD" AND PHASE II "NO MERGE AREA".
FOR YIELD CONDITION: PLACE CHANGABLE MESSAGE SIGN (CMS) NEAR MIDDLE OF RAMP SHOWING MESSAGE "YIELD AHEAD".
RETROREFLECTIVE FREE-STANDING PLASTIC DRUMS (TYP.)
ACCELERATION LANE
L
300' MIN. (SEE NOTE 2.)
SEE NOTE 1.
ENTRANCE RAMP (PHASE I)
ENTRANCE RAMP (PHASE II)
EXIT RAMP (PHASE I)
EXIT RAMP (PHASE II)
ROAD WORK AHEAD
W20-1
W4-1
W4-3
W3-2a
R1-2
E5-1
EXIT
50' (TYP.)
500'
200'
(SEE NOTE 3.)
SEE NOTE 1.


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
TRAFFIC CONTROL PLAN FOR TEMPORARY CONSTRUCTION CROSSOVER
(WORK DAY ONLY)
WORKING NUMBER TCP-11
SHEET NUMBER 6361
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
GENERAL NOTES:
1. THE LOCATION OF CHANNELIZING DEVICES AND THE WORK AREA LAYOUT SHALL BE BASED ON THE CRITERIA IN THE FOLLOWING TABLE:
POSTED SPEED AND/OR DESIGN SPEED
MAXIMUM CHANNELIZING DEVICES SPACING (ft)
LONGITUDINAL BUFFER SPACE (ft)
TAPER† RATES
TAPER
ALONG LANE LINE & WORK ZONE
mph
≤40 40 80 305 2:1
45 45 90 360 45:1
50 50 100 425 50:1
55 55 110 495 55:1
60 60 120 570 60:1
65 65 130 645 65:1
70 70 140 730 70:1
† NOTE: TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATIONS:
L = WS FOR SPEEDS OF 45 mph OR GREATER
L = WS²/60 FOR SPEEDS OF 40 mph OR LESS
WHERE: L = MINIMUM LENGTH OF TAPER IN FEET
W = WIDTH OF OFFSET USABLE LANE WIDTH IN FEET
S = DESIGN SPEED OR 85TH PERCENTILE SPEED IN MILES PER HOUR
†† NOTE: BUFFER SPACE MAY BE ADJUSTED AS NEEDED ACCORDING TO ROADWAY GEOMETRY, OBJECT LOCATION, AND SIGHT DISTANCE REQUIREMENTS, AS DIRECTED BY THE ENGINEER.
2. FLASHING ARROW PANEL SHOULD BE AS LEVEL AS POSSIBLE AS APPROVED BY THE ENGINEER. FLASHING ARROW PANEL SHOULD BE LOCATED AT THE BEGINNING OF THE TAPER OR, IF THERE IS NO TAPER, AT THE DOWNSTREAM BEHIND THE CHANNELIZING DEVICES IN THE CLOSED LANE.
3. ALL CHANNELIZING DEVICES SHALL BE RETROREFLECTIVE FREE STANDING PLASTIC DRUMS.
4. DIAMOND SHAPED TRAFFIC CONTROL SIGNS SHOULD BE A MINIMUM OF 48" X 48" AND SHALL BE BLACK COPY ON FLUORESCENT ORANGE SHEETING.
5. LOCATION OF CROSSOVERS WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
6. USE OF CROSSOVER SHALL BE LIMITED TO TRUCKS APPROACHING FROM ONE DIRECTION ONLY.
7. REVERSE LAYOUT OF TAPERS, DRUMS AND SIGNS TO ACCOMMODATE TRUCKS APPROACHING FROM OPPOSITE DIRECTION.
8. EACH CONSTRUCTION CROSSOVER SHOULD BE CLOSED AS DIRECTED BY THE ENGINEER OR WHEN THE CONSTRUCTION OPERATION, ZONE OR SIGNS ENCROACH ON OR INTERFERES WITH THE OPERATION OF THE CONSTRUCTION CROSSOVER. THE CROSSOVER SHOULD BE CLOSED USING 24' OF TYPE III BARRICADE DOUBLE FACED.
9. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT. THIS WORK IS TO BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.
LEGEND
** THE SPEED ON W13-1 SIGN SHALL BE 10 MPH LESS THAN THE POSTED SPEED LIMIT UNLESS OTHERWISE DIRECTED BY COMMISSION ORDER.
FLASHING ARROW PANEL (TYPE 'C')
RETROREFLECTIVE FREE-STANDING PLASTIC DRUMS
TYPE 'B' WARNING LIGHTS
NOTE: IF VEHICLE MOUNTED ARROW BOARDS USED, SHOULD BE AS HIGH AS PRACTICAL.
EDGE OF TRAVELED WAY
7' MIN.
CHANNELIZING DEVICES (SEE NOTE 3 FOR TYPES REQUIRED)
LONG. BUFFER SPACE
DRUMS @ 20' O.C.
W20-5D TRUCKS LEFT
W4-2L
W20-5L LEFT LANE CLOSED ½MILE (1/2 MILE)
W13-1 XX M.P.H. (XX MPH)**
W20-5L LEFT LANE CLOSED 1500 FT (1500 FT)
W20-1 ROAD WORK 1 MILE (1 MILE)
W20-1 ROAD WORK 1 MILE
W20-5L LEFT LANE CLOSED ½MILE (1/2 MILE)
W13-1 XX M.P.H. (XX MPH)**
W20-5L LEFT LANE CLOSED 1500FT (1500 FT)
STATION NO. AS SHOWN ON PLANS
VARIABLE MEDIAN WIDTH
DETAIL OF TEMPORARY CROSSOVER
NOTE: R = 0.5 (MEDIAN WIDTH)
8" SERIES 'C' LETTERS
TRUCKS TURNING LEFT
DETAIL OF W20-5D


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
TRAFFIC CONTROL PLANS
UNEVEN PAVEMENT
DETAILS
WORKING NUMBER TCP-12
SHEET NUMBER 6362
ISSUE DATE: MAY 01, 2017
BY REVISION DATE
GENERAL NOTES:
1. UNEVEN LANE LINE:
A. IF LESS THAN OR EQUAL TO 1½", NO SIGNS REQUIRED.
B. IF GREATER THAN 1½" AND LESS THAN OR EQUAL TO 2¼", PLACE SIGNS AS SHOWN ON THIS SHEET.
C. IF GREATER THAN 2¼", TRAFFIC SHOULD NOT BE ALLOWED TO CROSS UNEVEN LANE LINE.
2. THE W8-11 SIGNS SHOULD BE SPACED AT ¼-MILE INTERVALS THROUGHOUT UNEVEN LANE LINE LIMITS.
3. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER MAINTENANCE OF TRAFFIC.
UNEVEN LANES
W8-11
36 X 36
¼ MILE
TWO-WAY TRAFFIC
UNEVEN LANES
W8-11
48 X 48
¼ MILE
ONE-WAY TRAFFIC

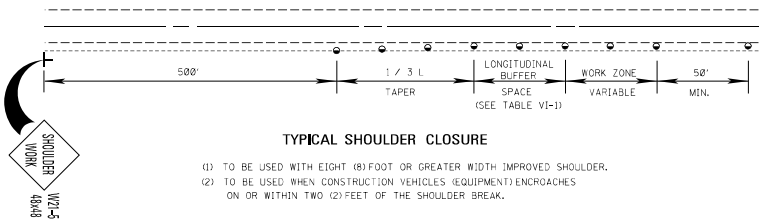

STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
TEMPORARY STRIPING FOR TRAFFIC CONTROL 2-LANE AND 4-LANE DIVIDED HIGHWAYS
WORKING NUMBER TCP-13
SHEET NUMBER 6363
ISSUE DATE: MAY 01, 2017
DATE
REVISION
BY
GENERAL NOTES:
* 1. 3" UNLESS SHOWN ELSEWHERE ON THE PLANS.
** 2. EDGE STRIPE SHALL BE SAME MATERIAL AS LANE-LINE STRIPE (PAINT OR TAPE AS INDICATED IN PAY ITEMS).
3. REFLECTIVE RAISED PAVEMENT MARKERS TO BE USED IF TEMPORARY MARKINGS ARE TO REMAIN IN PLACE OVER 3 MONTHS
*** 4. SPACING OF REFLECTIVE RAISED PAVEMENT MARKERS IS AS FOLLOWS:
URBAN AREA (ft-in)
RURAL AREA (ft-in)
TANGENT SECTIONS 40'-0" 80'-0"
HORIZONTAL CURVES 40'-0" 40'-0"
INTERCHANGE LIMITS 40'-0" † 40'-0"
† NOTE: ON THE MAIN FACILITY, REFLECTIVE RED-CLEAR RAISED PAVEMENT MARKERS ON A 40'-0" SPACING WILL BE REQUIRED ON LANE-LINE(S) THROUGH ALL INTERCHANGE AREAS BEGINNING 1000' IN ADVANCE IN EACH DIRECTION OF THE EXIT RAMP TAPER AND CONTINUING THROUGH THE INTERCHANGE TO THE END OF THE ENTRANCE RAMP TAPER.
5. PAVEMENT MARKERS SHALL BE HIGH PERFORMANCE REFLECTIVE RAISED PAVEMENT MARKERS AS LISTED IN THE MDOT "APPROVED SOURCES OF MATERIALS."
DIRECTION OF TRAFFIC
TRAFFIC
TRAFFIC
DETAIL "A"
TWO-WAY REFLECTIVE YELLOW RAISED PAVEMENT MARKERS
4" CONTINUOUS YELLOW
4" SKIP YELLOW (**)
4" CONTINUOUS WHITE EDGE STRIPE (**)
OUTSIDE EDGE OF TRAVEL LANE
OMIT BROKEN LINE STRIPING
PAY LENGTH
TWO-WAY TRAFFIC
(ASPHALT OR CONCRETE PAVEMENT)
4" SKIP WHITE
REFLECTIVE RED-CLEAR RAISED PAVEMENT MARKERS
MEDIAN EDGE OF TRAVEL LANE
4-LANE WITH ONE-WAY TRAFFIC


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
TEMPORARY STRIPING FOR TRAFFIC CONTROL 4-LANE AND 5-LANE UNDIVIDED ROADWAYS
WORKING NUMBER TCP-14
SHEET NUMBER 6364
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
TYPICAL STRIPING AND RAISED PAVEMENT MARKERS FOR 4-LANE SECTION
TYPICAL STRIPING AND RAISED PAVEMENT MARKERS FOR 5-LANE SECTION
TYPICAL STRIPING AND RAISED PAVEMENT MARKERS AT LEFT TURN LANES
* NOTE: USE DETAIL STRIPING IF LENGTH ≤ 150 AT THIS LOCATION, OTHERWISE USE CONTINUOUS STRIPING.
TYPICAL TWO-WAY ARROW INSTALLATION
DETAIL A LATERAL PLACEMENT OF PAVEMENT MARKERS
DETAIL B LATERAL PLACEMENT OF PAVEMENT MARKERS
DETAIL OF TEMPORARY TURN ARROW
GENERAL NOTE:
1. PAVEMENT MARKERS SHALL BE HIGH PERFORMANCE RAISED PAVEMENT MARKERS AS LISTED IN THE MDOT "APPROVED SOURCES OF MATERIALS".
2. REFLECTIVE RAISED PAVEMENT MARKERS TO BE USED IF TEMPORARY MARKINGS ARE TO REMAIN IN PLACE OVER 3 MONTHS
3. TEMPORARY TURN ARROW TO BE PAID FOR AS TEMPORARY TRAFFIC STRIPE (LEGEND), ESTIMATED AT 10.9 SQ. FT. PER ARROW
NOTES: 1. CONSIDER EACH SEGMENT OF CONTINUOUS TWO-WAY LEFT TURN LANE SEPARATELY.
2. IF SEGMENT IS LESS THAN 350', PLACE ONE SET OF ARROWS IN CENTER OF SEGMENT.
3. IF SEGMENT IS GREATER THAN 350', PLACE FIRST SET OF ARROWS 50' TO 100' FROM BEGINNING AND/OR END OF SEGMENT AND SPACE ADDITIONAL SETS OF ARROWS @250' O.C.


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
LOCATION OF R16-3 SIGNS (SPEEDING FINES DOUBLED)
WORKING NUMBER TCP-15
SHEET NUMBER 6365
ISSUE DATE: MAY 01, 2017
DATE REVISION BY
G20-1 MOUNTED ON TYPE III BARRICADE (SINGLE FACED) (6' WIDE)
G20-2 MOUNTED ON TYPE III BARRICADE (SINGLE FACED) (6' WIDE)
R16-3
250'
LOCAL RD.
G20-2 MOUNTED ON TYPE III BARRICADE (SINGLE FACED) (6' WIDE)
G20-1 MOUNTED ON TYPE III BARRICADE (SINGLE FACED) (6' WIDE)
DIVIDED HIGHWAY SHOWN
(2 LANE – 2 WAY ROADWAY SIMILAR)
(PROJECT MORE THAN 1 MILE LENGTH)
ENTRANCE RAMP
1500'
INTERCHANGE DETAIL
NOTES:
1. R16-3 SIGN TO BE PLACED AS SHOWN OR AS DIRECTED BY THE ENGINEER.
2. R16-3 SIGN SHOULD BE SPACED AT A MAXIMUM OF 2 MILES THROUGHOUT LENGTH OF PROJECT.
3. THIS SHEET WILL ONLY APPLY TO SPEED REDUCTION SECTIONS.
ORANGE/BLACK
WHITE/BLACK
WHEN WORKERS ARE PRESENT
SPEEDING FINES DOUBLED
48" x 60" (INTERSTATE USE)
36" x 48" (ALL OTHER HIGHWAYS)
R16-3

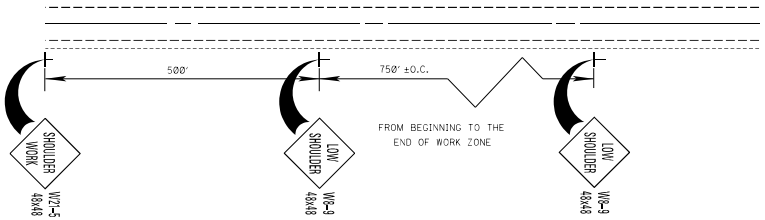
STATE	PROJECT NO.
MISS.	

PLASTIC DRUMS
(SEE NOTE FOR SPACING)



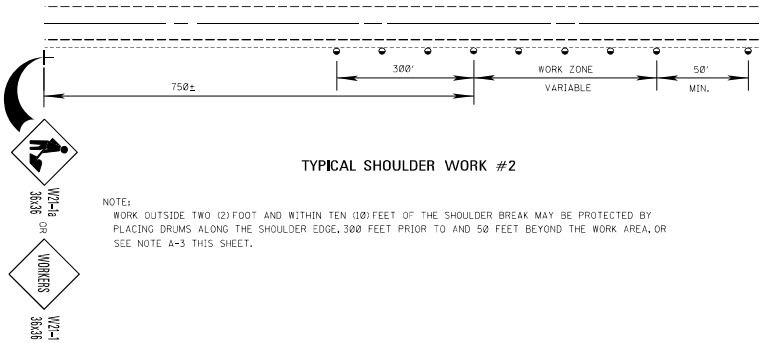
TYPICAL SHOULDER CLOSURE

(1) TO BE USED WITH EIGHT (8) FOOT OR GREATER WIDTH IMPROVED SHOULDER.
(2) TO BE USED WHEN CONSTRUCTION VEHICLES (EQUIPMENT) ENCROACHES ON OR WITHIN TWO (2) FEET OF THE SHOULDER BREAK.



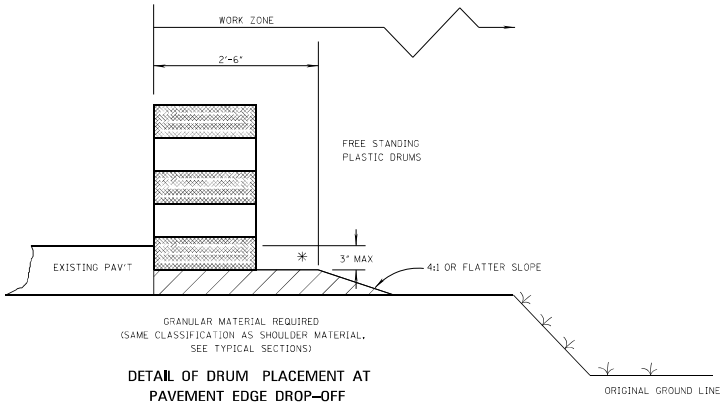
TYPICAL SHOULDER WORK #1
(SEE NOTE A–1 THIS SHEET)

PLASTIC DRUMS
(SEE NOTE FOR SPACING)



TYPICAL SHOULDER WORK #2

NOTE:
WORK OUTSIDE TWO (2) FOOT AND WITHIN TEN (10) FEET OF THE SHOULDER BREAK MAY BE PROTECTED BY PLACING DRUMS ALONG THE SHOULDER EDGE, 300 FEET PRIOR TO AND 50 FEET BEYOND THE WORK AREA, OR SEE NOTE A-3 THIS SHEET.



DETAIL OF DRUM PLACEMENT AT PAVEMENT EDGE DROP–OFF

NOTES:

✳ A. PAVEMENT EDGE DROP-OFF

1. IF LESS THAN TWO AND ONE QUARTER (2.25) INCHES-NO PROTECTION REQUIRED. PLACE A SHOULDER WORK SIGN (W21-5) 500 FEET IN ADVANCE OF WORK ZONE SHOULDER AND A LOW SHOULDER SIGN (W8-9) AT THE BEGINNING AND THROUGHOUT THE WORK ZONE @ (750'+O.C.).
2. TWO AND ONE QUARTER TO THREE INCHES-PLACE DRUMS, VERTICAL PANELS OR BARRICADES EVERY 100 FEET ON TANGENT SECTIONS FOR SPEEDS OF 50 MILES PER HOUR OR GREATER. CONES MAY BE USED IN PLACE OF DRUMS, PANELS, AND BARRICADES DURING DAYLIGHT HOURS. FOR TANGENT SECTIONS WITH SPEEDS LESS THAN 50 MILES PER HOUR AND FOR CURVES, DEVICES SHOULD BE PLACED EVERY 50 FEET. SPACING FOR TAPERS SHOULD BE IN ACCORDANCE WITH THE M.U.T.C.D. (1 / 3 L, WHERE L IS THE TAPER LENGTH IN FEET.)
3. GREATER THAN THREE (3) INCHES-POSITIVE SEPARATION OR WEDGE WITH 4:1 OR FLATTER SLOPE NEEDED. IF THERE IS EIGHT (8) FEET OR MORE DISTANCE BETWEEN THE EDGE OF TRAVEL LANE AND DROP-OFF, THEN DRUMS, PANELS OR BARRICADES MAY BE USED.
4. FOR TEMPORARY CONDITIONS, DROP-OFFS GREATER THAN THREE (3) INCHES MAY BE PROTECTED WITH DRUMS, VERTICAL PANELS OR BARRICADES FOR SHORT DISTANCES DURING DAYLIGHT HOURS WHILE WORK IS BEING DONE IN THE DROP-OFF AREA.
5. LESSER TREATMENTS THAN THOSE DESCRIBED ABOVE MAY BE CONSIDERED FOR LOW-VOLUME LOCAL STREETS.

B. DRUM SPACING

1. TANGENTS = 2 X S
2. TAPERS = L / 3
   WHERE L = S X W
   L = TAPER LENGTH IN FEET
   S = SPEED IN MPH (POSTED OR 85 PERCENTILE)
   W = WIDTH OF OFFSET IN FEET

C. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER MAINTENANCE OF TRAFFIC.

TABLE VI-1. GUIDELINES FOR LENGTH OF LONGITUDINAL BUFFER SPACE

✳✳ SPEED (MPH)	LENGTH (FEET)
20	35
25	55
30	85
35	120
40	170
45	220
50	280
55	335
60	415
65	485

✳✳ POSTED SPEED, OFF-PEAK 85 PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH.

BY | REVISION | DATE

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

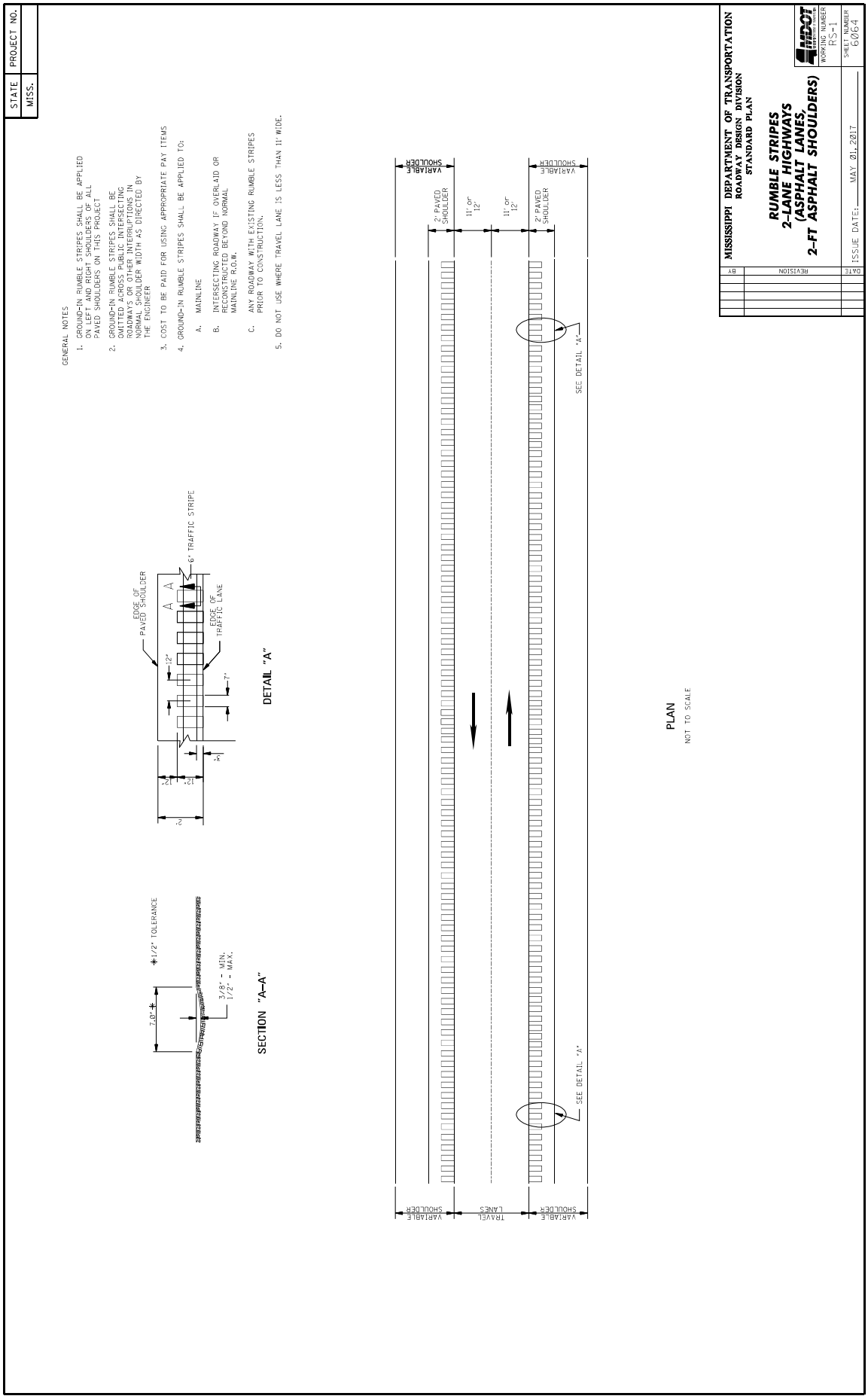
TRAFFIC CONTROL DETAILS DRUM PLACEMENT AND SHOULDER CLOSURE

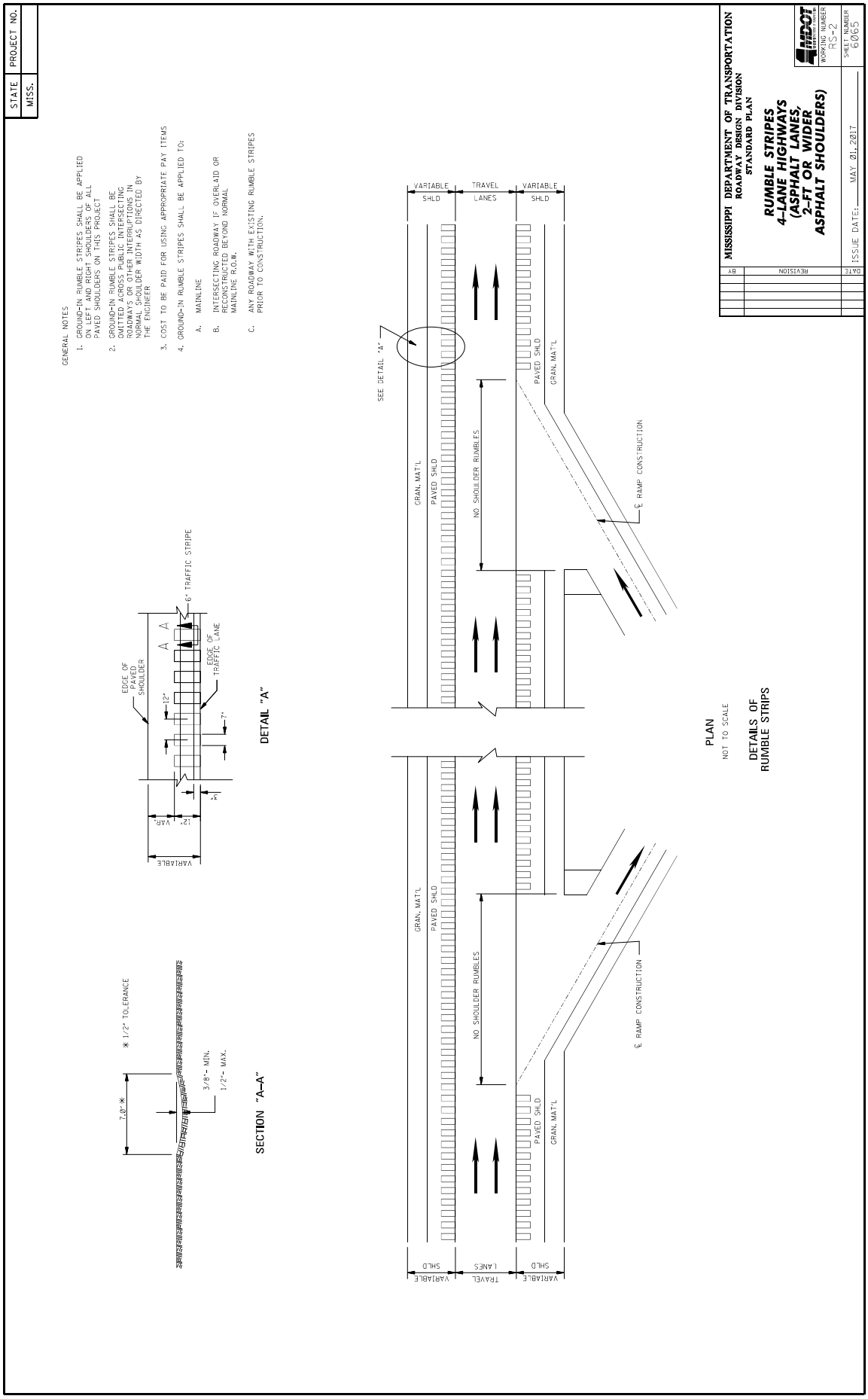
MDOT

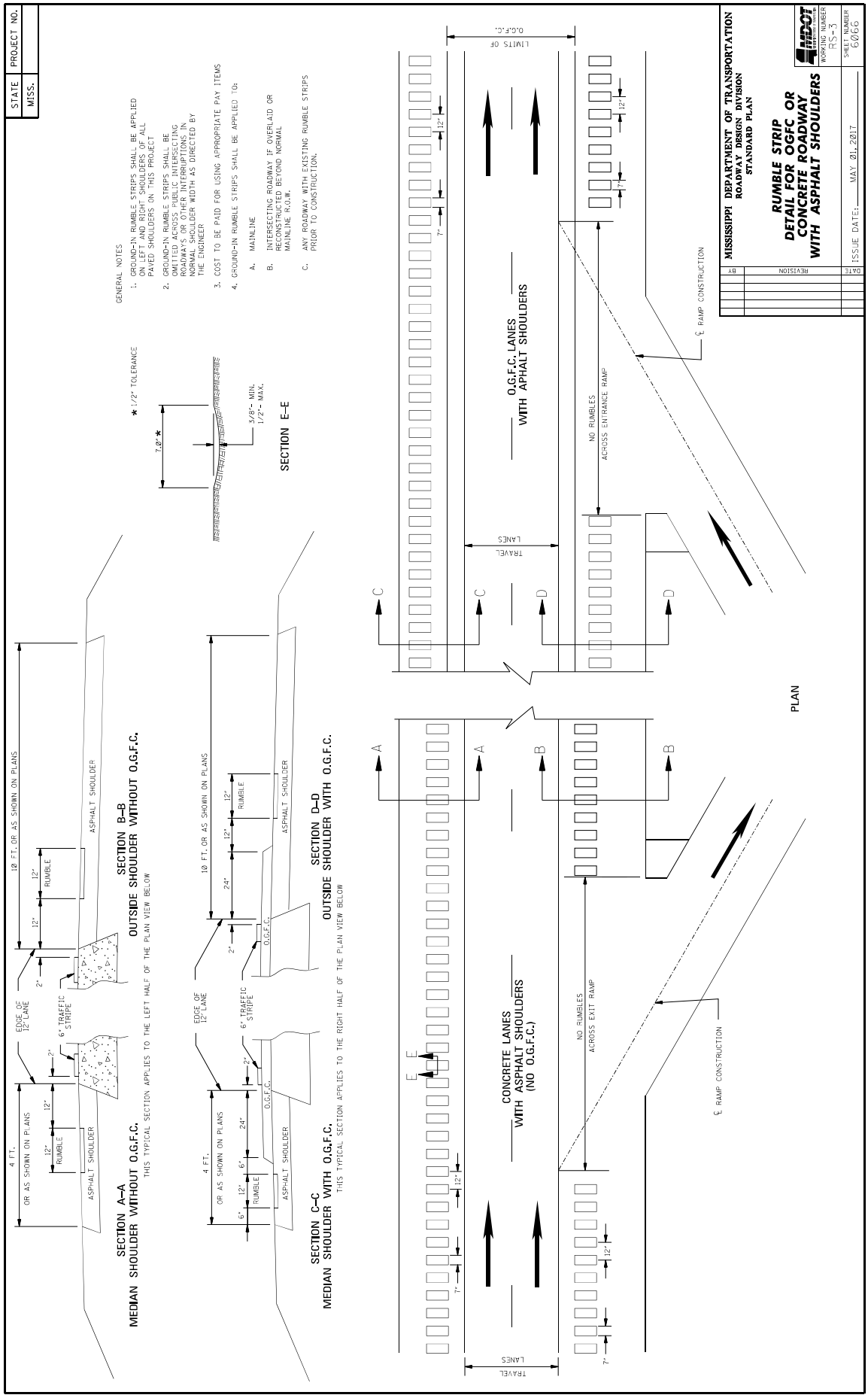
WORKING NUMBER
TCP-16

ISSUE DATE: MAY 01, 2017

SHEET NUMBER
6366


STATE
MISS.
PROJECT NO.
GENERAL NOTES
1. GROUND-IN RUMBLE STRIPES SHALL BE APPLIED ON LEFT AND RIGHT SHOULDERS OF ALL PAVED SHOULDERS ON THIS PROJECT
2. GROUND-IN RUMBLE STRIPES SHALL BE OMITTED ACROSS PUBLIC INTERSECTING ROADWAYS OR OTHER INTERRUPTIONS IN NORMAL SHOULDER WIDTH AS DIRECTED BY THE ENGINEER
3. COST TO BE PAID FOR USING APPROPRIATE PAY ITEMS
4. GROUND-IN RUMBLE STRIPES SHALL BE APPLIED TO:
A. MAINLINE
B. INTERSECTING ROADWAY IF OVERLAID OR RECONSTRUCTED BEYOND NORMAL MAINLINE R.O.W.
C. ANY ROADWAY WITH EXISTING RUMBLE STRIPES PRIOR TO CONSTRUCTION.
5. DO NOT USE WHERE TRAVEL LANE IS LESS THAN 11' WIDE.
EDGE OF PAVED SHOULDER
6" TRAFFIC STRIPE
EDGE OF TRAFFIC LANE
12"
7"
DETAIL "A"
7.0"
±1/2" TOLERANCE
3/8" - MIN.
1/2" - MAX.
SECTION "A-A"
VARIABLE SHOULDER
2' PAVED SHOULDER
11' or 12'
11' or 12'
2' PAVED SHOULDER
VARIABLE SHOULDER
SEE DETAIL 'A'
SEE DETAIL 'A'
VARIABLE SHOULDER
TRAVEL LANES
VARIABLE SHOULDER
PLAN
NOT TO SCALE
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
RUMBLE STRIPES
2-LANE HIGHWAYS
(ASPHALT LANES,
2-FT ASPHALT SHOULDERS)
WORKING NUMBER RS-1
SHEET NUMBER 6064
BY
REVISION
DATE
ISSUE DATE: MAY 01, 2017


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
RUMBLE STRIPES
4-LANE HIGHWAYS
(ASPHALT LANES,
2-FT OR WIDER
ASPHALT SHOULDERS)
WORKING NUMBER RS-2
SHEET NUMBER 6065
ISSUE DATE: MAY 01, 2017
BY REVISION DATE
GENERAL NOTES
1. GROUND-IN RUMBLE STRIPES SHALL BE APPLIED ON LEFT AND RIGHT SHOULDERS OF ALL PAVED SHOULDERS ON THIS PROJECT
2. GROUND-IN RUMBLE STRIPES SHALL BE OMITTED ACROSS PUBLIC INTERSECTING ROADWAYS OR OTHER INTERRUPTIONS IN NORMAL SHOULDER WIDTH AS DIRECTED BY THE ENGINEER
3. COST TO BE PAID FOR USING APPROPRIATE PAY ITEMS
4. GROUND-IN RUMBLE STRIPES SHALL BE APPLIED TO:
A. MAINLINE
B. INTERSECTING ROADWAY IF OVERLAID OR RECONSTRUCTED BEYOND NORMAL MAINLINE R.O.W.
C. ANY ROADWAY WITH EXISTING RUMBLE STRIPES PRIOR TO CONSTRUCTION.
6" TRAFFIC STRIPE
EDGE OF PAVED SHOULDER
EDGE OF TRAFFIC LANE
12"
7"
4"
12"
VAR.
VARIABLE
DETAIL "A"
* 1/2" TOLERANCE
7.0"*
3/8"- MIN.
1/2"- MAX.
SECTION "A-A"
VARIABLE SHLD
TRAVEL LANES
VARIABLE SHLD
SEE DETAIL "A"
GRAN. MAT'L
PAVED SHLD
NO SHOULDER RUMBLES
℄ RAMP CONSTRUCTION
PLAN
NOT TO SCALE
DETAILS OF RUMBLE STRIPS


STATE MISS.
PROJECT NO.
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN
RUMBLE STRIP
DETAIL FOR OGFC OR
CONCRETE ROADWAY
WITH ASPHALT SHOULDERS
WORKING NUMBER RS-3
SHEET NUMBER 6066
ISSUE DATE: MAY 01, 2017
BY REVISION DATE
GENERAL NOTES
1. GROUND-IN RUMBLE STRIPS SHALL BE APPLIED ON LEFT AND RIGHT SHOULDERS OF ALL PAVED SHOULDERS ON THIS PROJECT
2. GROUND-IN RUMBLE STRIPS SHALL BE OMITTED ACROSS PUBLIC INTERSECTING ROADWAYS OR OTHER INTERRUPTIONS IN NORMAL SHOULDER WIDTH AS DIRECTED BY THE ENGINEER
3. COST TO BE PAID FOR USING APPROPRIATE PAY ITEMS
4. GROUND-IN RUMBLE STRIPS SHALL BE APPLIED TO:
A. MAINLINE
B. INTERSECTING ROADWAY IF OVERLAID OR RECONSTRUCTED BEYOND NORMAL MAINLINE R.O.W.
C. ANY ROADWAY WITH EXISTING RUMBLE STRIPS PRIOR TO CONSTRUCTION.
* 1/2" TOLERANCE
7.0"*
3/8" MIN.
1/2" MAX.
SECTION E–E
SECTION A–A
MEDIAN SHOULDER WITHOUT O.G.F.C.
THIS TYPICAL SECTION APPLIES TO THE LEFT HALF OF THE PLAN VIEW BELOW
SECTION B–B
OUTSIDE SHOULDER WITHOUT O.G.F.C.
SECTION C–C
MEDIAN SHOULDER WITH O.G.F.C.
THIS TYPICAL SECTION APPLIES TO THE RIGHT HALF OF THE PLAN VIEW BELOW
SECTION D–D
OUTSIDE SHOULDER WITH O.G.F.C.
4 FT.
OR AS SHOWN ON PLANS
10 FT. OR AS SHOWN ON PLANS
EDGE OF 12' LANE
6" TRAFFIC STRIPE
12" RUMBLE
ASPHALT SHOULDER
O.G.F.C.
24"
6"
2"
PLAN
CONCRETE LANES
WITH ASPHALT SHOULDERS
(NO O.G.F.C.)
O.G.F.C. LANES
WITH APHALT SHOULDERS
NO RUMBLES
ACROSS EXIT RAMP
NO RUMBLES
ACROSS ENTRANCE RAMP
℄ RAMP CONSTRUCTION
TRAVEL LANES
LIMITS OF O.G.F.C.
7"
12"

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 445 **CODE: (SP)**

DATE: 10/10/2017

SUBJECT: Mississippi Agent or Qualified Nonresident Agent

Bidders are hereby advised of the requirements of Subsections 102.08, 103.05.2, and 107.14.2.1 of the *2017 Standard Specifications for Road and Bridge Construction* as it refers to bonding agents. Proposal guaranties, bonds, and liability insurance policies must be signed by a **Mississippi Agent or Qualified Nonresident Agent.**

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 446 **CODE: (SP)**

DATE: 10/18/2017

SUBJECT: Traffic on Milled Surface in Urban Areas

Bidders are hereby advised that when the main lanes of a roadway are fine milled, traffic will be allowed to run on a milled surfaces for up to five (5) calendar days. The Contractor will be assessed a penalty of **$5,000 per calendar day** afterwards until the milled surfaces are covered with the next lift of asphalt. It shall be the Contractor's responsibility to ensure that the milling operations do not commence until such time as forecasted weather conditions are suitable enough to allow the placement of the asphalt pavement after the milling operations.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 516 **CODE: (IS)**

DATE: 11/28/2017

SUBJECT: Errata and Modifications to the 2017 Standard Specifications

Page	Subsection	Change
16	102.06	In the seventh full paragraph, change "Engineer" to "Director."
33	105.05.1	In the sixth sentence, change "Contract Administration Engineer" to "Contract Administration Director."
34	105.05.2.1	In subparagraph 2, change "SWPPP, ECP" to "SWPPP and the ECP"
35	105.05.2.2	In subparagraphs 2, add " and" to the end of the sentence. In subparagraph 3, remove ", and" and add ".".
90	109.04.2	In the last paragraph of subparagraph (a), place a period "." at the end of the sentence.
93	109.04.2	In the last paragraph of subparagraph (g), place a period "." at the end of the sentence. Also, in the first paragraph of subparagraph (h), place a period "." at the end of the sentence.
97	109.07	Under ADJUSTMENT CODE, subparagraph (A1), change "HMA mixture" to "Asphalt mixtures."
98	109.11	In the third sentence, change "Engineer" to "Director."
219	308.04	In the last sentence of the last paragraph, change "Contractor's decision" to "Engineer's decision."
300	405.02.5.9	In the first sentence of the second paragraph, change "Hot Mix Asphalt" to "Asphalt Mixtures."
502	630.01.1	In the first paragraph, change "AASHTO" to "AASHTO's LRFD".
636	646.05	Change "each" to "per each" for the pay item units of payment.
640	656.02.6.2	In item 7), change "down stream" to "downstream".
688	630.03.2	Change the subsection number from "630.03.2" to "680.03.2."

725	702.08.3	In the second sentence of the first paragraph, change "hot-mix" to "asphalt."
954	804.02.13.1.6	In the definition for "M" in the % Reduction formulas, change "paragraph 7.3" to "paragraph 5.3."

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 977 **CODE: (IS)**

DATE: 07/25/2018

SUBJECT: DUNS Requirement for Federal Funded Projects

Bidders are advised that the Prime Contractor must maintain a current registration in the System for Award Management (http://www.sam.gov) at all times during this project. A Dun and Bradstreet Data Universal Numbering System (DUNS) Number (http://www.dnb.com) is one of the requirements for registration in the System for Award Management.

Bidders are also advised that prior to the award of this contract, they MUST be registered, active, and have no active exclusions in the System for Award Management.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1206 **CODE: (SP)**

DATE: 10/16/2018

SUBJECT: MASH Compliant Devices

Bidders are hereby advised that the Standard Specifications may require certain traffic control and permanent safety hardware devices to meet the requirements of the Manual for Assessing Safety Hardware (MASH). However, devices meeting the requirements of NCHRP Report 350 will be allowed until the mandatory effective date for MASH compliance. The following table shows the effective dates for MASH compliant devices.

Device	Effective Date for MASH Compliance
W-beam barriers, cast-in-place concrete barriers	December 31, 2017
W-beam terminals - non-flared	June 30, 2018
Crash cushions	December 31, 2018
Cable barriers, cable barrier terminals, bridge rails, transitions, all other longitudinal barriers including portable barriers installed permanently, W-beam terminals - flared, all other terminals, sign supports, all other breakaway hardware	December 31, 2019

Temporary work zone devices, including portable barriers manufactured after December 31, 2019, must have been successfully tested to the 2016 Edition of MASH. Such devices manufactured on or before this date and successfully tested to NCHRP Report 350 or the 2009 Edition of MASH may continue to be used throughout their normal service lives.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1225 **CODE: (SP)**

DATE: 11/13/2018

SUBJECT: Early Notice to Proceed

Bidders are advised that if an early notice to proceed is allowed by the Department and the Contractor experiences problems or delays between the early notice to proceed date and the original notice to proceed date, this shall not be justification for any monetary compensation or an extension of contract time.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1226 **CODE: (SP)**

DATE: 11/16/2018

SUBJECT: Material Storage Under Bridges

Bidders are advised that Subsection 106.08 of the Standard Specifications allows the Contractor to store materials and equipment on portions of the right-of-way. However, the Contractor will not be allowed to store or stockpile materials under bridges without written permission from the Project Engineer. The Contractor shall submit a detailed request of all proposed materials to be stored under bridges to the Engineer a minimum of 14 calendar days prior to anticipated storage. This detail shall include, but not limited to, bridge location, material type, material quantity, and duration of storage. The Project Engineer and any other needed Division will review this information and determine whether to grant approval. The Contractor shall not store any material under any bridge without written approval from the Project Engineer.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1241 **CODE: (SP)**

DATE: 11/27/2018

SUBJECT: Fuel and Material Adjustments

Bidder's attention is brought to the last paragraph of Subsection 109.07 of the Standard Specifications which states that no fuel or material adjustment will be made after the completion of contract time. Any fuels consumed or materials incorporated into the work during the monthly estimate period falling wholly after the expiration of contract time will not be subject a fuel or material adjustment.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1287 **CODE: (SP)**

DATE: 01/24/2019

SUBJECT: Contract Time

PROJECT: STP-0039-02(053) / 107631301 – Hinds County

The completion of work to be performed by the Contractor for this project will not be a specified date but shall be when all allowable working days are assessed, or any extension thereto as provided in Subsection 108.06. It is anticipated that the Notice of Award will be issued no later than **March 12, 2019** and the date for Notice to Proceed / Beginning of Contract Time will be **April 11, 2019**.

Should the Contractor request a Notice to Proceed earlier than **April 11, 2019** and it is agreeable with the Department for an early Notice to Proceed, the requested date will become the new Notice to Proceed date.

201 Working Days have been allowed for the completion of work on this project.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1288

DATE: 01/02/2019

SUBJECT: Specialty Items

PROJECT: STP-0039-02(053)/107631301 - HINDS

Pursuant to the provisions of Section 108, the following work items are hereby designated as "Specialty Items" for this contract. Bidders are reminded that these items must be subcontracted in order to be considered as specialty items.

CATEGORY: CONCRETE

Line No	Pay Item	Description
0680	907-515-A001	Fiber Reinforced Polymer Patching Material

CATEGORY: DISPOSAL OF BUILDINGS, RIGHT OF WAY CLEARING & GRUBBING

Line No	Pay Item	Description
0080	202-B240	Removal of Traffic Stripe

CATEGORY: EROSION CONTROL

Line No	Pay Item	Description
0110	216-A001	Solid Sodding
0120	219-A001	Watering
0130	221-A001	Concrete Paved Ditch

CATEGORY: GUARDRAIL, GUIDERAIL

Line No	Pay Item	Description
0370	606-B003	Guard Rail, Class A, Type 1, 'W' Beam, Metal Post
0380	606-B007	Guard Rail, Class A, Type 1, Double Faced, Metal Post
0390	606-D012	Guard Rail, Bridge End Section, Type D Modified
0400	606-D019	Guard Rail, Bridge End Section, Type H
0410	606-E003	Guard Rail, Terminal End Section, Double Faced
0420	606-E005	Guard Rail, Terminal End Section, Flared
0430	606-E007	Guard Rail, Terminal End Section, Non-Flared

CATEGORY: MISCELLANEOUS/ SPECIALTY WORK ITEMS

Line No	Pay Item	Description
0240	423-A001	Rumble Strips, Ground In

CATEGORY: PAVEMENT STRIPING AND MARKING

Line No	Pay Item	Description
0560	626-A001	6" Thermoplastic Double Drop Traffic Stripe, Skip White
0570	626-B002	6" Thermoplastic Double Drop Traffic Stripe, Continuous White

CATEGORY: PAVEMENT STRIPING AND MARKING

Line No	Pay Item	Description
0580	626-E001	6" Thermoplastic Double Drop Traffic Stripe, Continuous Yellow
0590	626-G004	Thermoplastic Double Drop Detail Stripe, White
0600	626-G005	Thermoplastic Double Drop Detail Stripe, Yellow
0610	626-H001	Thermoplastic Double Drop Legend, White
0620	626-H002	Thermoplastic Double Drop Legend, White
0630	627-J001	Two-Way Clear Reflective High Performance Raised Markers
0640	627-K001	Red-Clear Reflective High Performance Raised Markers
0650	627-L001	Two-Way Yellow Reflective High Performance Raised Markers

CATEGORY: TRAFFIC CONTROL - PERMANENT

Line No	Pay Item	Description
0660	630-G004	Type 3 Object Markers, OM-3R or OM-3L
0670	647-A001	Removal of Existing Traffic Signal Equipment
0690	907-632-D001	Solid State Traffic Actuated Controller, Type 1
0700	907-641-A002	Signal Stop Bar Radar Vehicle Detection Sensor, Type 2
0710	907-641-D001	Radar Vehicle Detection Cable

CATEGORY: TRAFFIC CONTROL - TEMPORARY

Line No	Pay Item	Description
0450	619-A1001	Temporary Traffic Stripe, Continuous White
0460	619-A2001	Temporary Traffic Stripe, Continuous Yellow
0470	619-A3001	Temporary Traffic Stripe, Skip White
0480	619-A5001	Temporary Traffic Stripe, Detail
0490	619-A6002	Temporary Traffic Stripe, Legend
0500	619-D1001	Standard Roadside Construction Signs, Less than 10 Square Feet
0510	619-D2001	Standard Roadside Construction Signs, 10 Square Feet or More
0520	619-F3001	Delineators, Guard Rail, White
0530	619-F3002	Delineators, Guard Rail, Yellow
0540	619-G4001	Barricades, Type III, Double Faced

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1289 **CODE: (SP)**

DATE: 01/23/2019

SUBJECT: Scope of Work

PROJECT: STP-0039-02(053) / 107631301 – Hinds County

The contract documents do not include an official set of construction plans but may, by reference, include some Standard Drawings when so specified in a Notice to Bidders entitled, "Standard Drawings". All other references to plans in the contract documents and Standard Specifications for Road and Bridge Construction are to be disregarded.

Project Location: SR 18 Beginning 1.7 Miles South of Raymond City Limits (End of Four-lane) and Ending at the West End of BR 56.1. A&B (Just North of Langley St.)

Work on the project shall consist of the following:

Mill & overlay of all existing asphalt pavement including shoulders on CRCP sections, turn lanes, crossovers and intersections, cleaning and filling joints, at the discretion of the Engineer, sawing and sealing transverse joints overlaid with asphalt as well as cleaning and sealing longitudinal joints that are not overlaid with asphalt, repairing failed areas/punch outs which includes removing concrete turn lane tapers listed in the table and replacing them perpendicular to the lane for ease of paving, repairing damaged drainage areas listed in the attached table and placing rumble strips. DBST shoulders shall be removed to a depth of three inches, removing underlying soil cement if necessary (202-B: Removal of Cement Treated Shoulder w/Variable Depth Overlay) and replaced with one, 3-foot wide, 3-inch deep lift of 12.5-mm, ST, asphalt. Spalled concrete areas shall be repaired at the locations listed in the attached table and any other areas determined by the Engineer. Spalls are to be prepared for the fiber reinforced polymer patching material by removing the concrete to the width, length and depth as prescribed by the attached detail, the attached special provision 907-515, and the manufacturer's recommendations. Signal loops locations listed in the attached table are too be replaced with radar detection sensors and all guard rail is to be replaced within project limits.

Station 590+18 - 10+00 (BOP) CRCP West Bound
Work in this area shall consist of repairing 9-inch and variable concrete failed areas, repairing spalled areas by routing and sealing, cleaning and sealing bridge approach slab joints, milling the existing asphalt overlay areas to a depth of 2", repairing CRCP if necessary, and concrete milling a 1-inch transition at the tie-ins to achieve a minimum 1-inch asphalt thickness. All DBST shoulders shall be removed to a depth of three inches (3"), removing underlying soil cement if necessary (202-B**:** Removal of Cement Treated Shoulder w/Variable Depth Overlay), and replaced with one, 3-foot wide, 3-inch deep lift of 12.5-mm, ST, asphalt, placing 2" of 12.5-mm, MT, asphalt, as per the attached details and typical sections. All intersecting roads shall be milled to a depth of 2" and place 2" of 12.5-mm, MT, asphalt. Replace vehicle loops with radar.

Guardrails are to be replaced (See General Notes). Rumble strips will be placed from station 10+00 (BOP) and end at station 628+36/626+30 (EOP) omitting the stations in the City limits of Raymond and Jackson.

Station 626+30 (EOP) to 592+08 WB & 628+36 (EOP) to 592+10 EB Overlaid JRCP
Work in this area shall consist of milling existing pavement to a depth of 2" on the existing slope (if the slope in normal crown section is not 2%, the slope will be corrected by a combination of milling and paving) and replacing with 12.5-mm, MT, asphalt, 3-foot trench widening of shoulders that do not have an existing 2-foot shoulder with one 3-inch lift of 12.5-mm, ST, cleaning and filling concrete joints under the asphalt pavement at the discretion of the Engineer, cleaning and sealing longitudinal joints not overlaid with asphalt, sawing and sealing transverse joints prior to overlay, repairing any 9-inch and variable concrete failed areas, and replacing guardrail. Replace vehicle loops with radar. All intersecting roads shall be milled to a depth of 2" and replaced with 2" of 12.5-mm, MT, asphalt. Rumble strips will be placed from station 10+00 (BOP) and end at station 628+36/626+30 (EOP) omitting the stations in the City limits of Raymond and Jackson.

Station 11+00 to 390+43 East Bound Full Depth Asphalt
Work in this area consists of repairing any failed areas with full depth 12.5-mm, MT, leveling to improve profile grade, milling existing pavement to a depth of 2" at 2% slope or proper super elevation slope as applicable (if the slope is not 2% in normal crown section, the slope will be corrected by a combination of milling and paving) and overlaid with 12.5-mm, MT, asphalt. Replace vehicle loops with radar. All intersecting roads shall be milled to a depth of 2" and replaced with 2" of 12.5-mm, MT, asphalt. Rumble strips will be placed from station 10+00 (BOP) and end at station 628+36/626+30 (EOP) omitting the stations in the City limits of Raymond and Jackson.

Station 10+00 to 11+00 (2-Lane)
Work in this area consists of milling and overlaying existing 10-foot shoulder (LT), trench widening on right shoulder 3' wide with one 3-inch lift of 12.5-mm, ST, and placing rumble strip. Shoulder material, unless composed of cement-treated material, generated by trench widening operation will be reused to bring shoulder to grade. No separate payment will be made for blading shoulder material. Any spalled areas will be repaired as previously mentioned.

Turn Lane Addition at Siwell Road
This work shall include adding an additional 12-foot turn lane to the inside, west bound, lane from Station 438+08 to 433+00. The additional lane shall consist of removing all existing shoulder material to the required depth and replacing it with eight inches (8") of crushed stone and six inches (6") of 12.5-mm, MT, asphalt. The asphalt shall be constructed in three (3) lifts: base lift 2½ inches, intermediate lift two (2) inches, and surface lift 1½ inches (See Detail for Turn Lane). The material removed from the shoulder is either to be used as unclassified or hauled off as excess. The existing concrete curb shall be removed and replaced with Type 3A Concrete Curb and Gutter. The existing stop bar on Highway 18 and Siwell Road shall be moved in order to accommodate new turn lane traffic, see detail for more information. If a pavement edge drop-off is required to be left overnight, than a safety edge is required to be placed as per standard drawing TCP-16, sheet number 6366. Any additional site grading

required to re-profile drainage ditch will be absorbed into other items bid. Solid sodding shall be used on the ditch areas disturbed during construction as directed by the Engineer. Wattles should also be used in ditch line to prevent any silt runoff.

General Notes:

Prior to milling and paving operations, failed areas in the existing pavement shall be removed and backfilled with 12.5-mm, MT, Leveling, asphalt as per the attached typical sections and details. Any granular base deemed unsuitable by the Engineer shall be removed as directed and backfilled with 12.5-mm, MT, Leveling, asphalt. Payment for the excavation of the granular base will be made using pay item 203-G: Excess Excavation. A list of the failed areas is shown in the attached table. Pavement repairs shall be completed as a continuous operation in order to minimize the traffic impact. Lane closures shall be in place until the failed area has been completely repaired.

Trench widening will be performed at the locations shown herein and on the typical sections and will paid for under the pay item 403-A003: 12.5-mm, ST, Asphalt Pavement. All construction and density requirements for this work shall follow the specifications for trench widening. The material present in the shoulder is composed of asphalt and/or DBST and cement-treated soil. Therefore, excavation for trench widening will be accomplished by milling. Any asphalt or bituminous surface treatment on top of soil cement set up for removal shall be absorbed in the cost for 202-B: Removal of Soil Cement Treated Shoulder w/Variable Depth Overlay.

Milling operations shall be in accordance with the contract documents and the MDOT Standard Specifications. Transitions will be used for local roads. Milling of driveway pads shall be conducted in a manner to prevent gouging or otherwise affecting the roadway pavement structure and slope. Traffic will be allowed to drive on milled surfaces for no more than five (5) days.

The Reclaimed Asphalt Pavement (RAP) material removed by the milling operations shall become the property of the Contractor with the exception of 10,000 tons or 50% of the total anticipated quantity, whichever is less. The reclaimed material shall be delivered to the Stockpile located at the intersection of SR27 S and SR 18 at Utica. The Contractor is responsible for coordinating the delivery of the RAP material with MDOT maintenance personnel. Sufficient advance notice shall be given to ensure the MDOT maintenance is equipped to handle the delivery. The Contractor shall be responsible for providing the equipment and operator to neatly stockpile the milled asphalt.

Temporary pavement joints (paper joints) will be used at the end of each day's paving/milling operations. Temporary pavement joints shall be a minimum of three (3) paper-widths long and shall be adequately maintained.

Publicly maintained roads and streets shall be milled and paved to the existing right-of-way or as directed by the Engineer. Privately owned entrances shall be paved to the shoulder line per the included typical drawing. Pads shall be shaped horizontally and vertically to prevent excessive drop-offs. Granular material (Class 5 Group C) shall be placed around the pads to prevent shoulder drop-offs as directed and shall be placed in a timely manner. Drop-offs exceeding 2.5"

shall be corrected within two (2) calendar days of the placement of the pad. Stabilizer aggregate shall be used as directed by the Engineer.

It shall be the responsibility of the Contractor to protect existing structures such as pipes, inlets, aprons, bridges, etc. from damage which might occur during construction. The Contractor shall replace or repair, as directed by the engineer, any structures damaged during the life of the contract. No payment will be made for replacement or repair of damaged items.

Drainage areas, which include paved ditches, median aprons and various sized pipes, are to be repaired at the locations listed in the attached table. This work will require re-grading ditches using borrow material, removing and re-pouring damaged paved ditch and aprons, removing and replacing separated pipes, and adding flared end sections. All excavation for remove and replace pipe, site grading, approved pipe gaskets and incidental grassing in and around repaired drainage areas shall be absorbed into other items bid. Sod shall be placed around paved ditches and aprons as per detail for typical ditch treatment. Bedding material for pipe shall be paid under Borrow Excavation AH LVM (Class B9-6). Any existing damaged pipe ends not suitable for gaskets shall have a concrete pipe collar installed in order to acquire correct seal. All pipe joints are to be wrapped in 24 inch wide type V geotextile fabric. The cost of which shall be absorbed in other items bid. The cost of removal for all headwalls and wing walls (pipes, box culverts, box culverts box bridges) shall be absorbed in other items bid.

Any signs that are in conflict with construction of this project shall be removed and relocated by the Contractor as directed by the Engineer, the cost of which is to be absorbed in other items bid.

The Contractor shall erect and maintain construction signing and provide all signs and traffic control devices necessary to safely maintain traffic around and through the work areas in accordance with the Traffic Control Plan and the MUTCD. The cost is to be included in the price bid for Pay Item No. 618-A, Maintenance of Traffic. Fluorescent orange sheeting shall be used on all construction and traffic control signs except those designated in the plans to be black legend and border on white background. Standard roadside construction signs and barricades will be paid for using the appropriate pay items.

Roadside construction signs, barrels, etc. shall be placed in accordance with the attached drawings or as directed by the Engineer. W20-1 signs shall be placed on all public road approaches as shown or as directed.

Incidental work such as removing vegetation, shaping and compacting shoulders, removing and resetting signs and/or mailboxes, removing excess asphalt material, project clean-up, and other items of incidental work necessary to complete the project will not be measured for separate payment and will be considered included in the prices of items bid.

The Contractor shall on a daily basis, remove all debris from within the roadway and a 30-foot clear zone which, in the opinion of the Engineer, is a hazard to the traveling public. This activity shall begin with the beginning of work or the beginning of the contract time, whichever comes first. No direct payment will be made for the debris removal; the cost is to be included in the prices of items bid. Failure of the Contractor to remove the debris as prescribed herein shall be

just cause for withholding the monthly progress estimate payment or suspending active operations until the debris is satisfactorily removed by the Contractor.

Where applicable, the existing shoulders are to be raised to match the new pavement elevation by placing variable depth Granular Material (Class 5 Group C).

Placement of the granular material on the finished asphalt course shall not be permitted. The existing shoulder shall be scarified to allow incorporation of the new shoulder material. The material shall be bladed, rolled, and compacted to a finished slope of four percent (4%). Placement of this material shall be performed to provide a uniform and compacted shoulder with a minimum depth and width of material placed. Shoulders with adequate shoulder material in place shall be bladed to a slope of four percent (4%). The cost of blading will be an absorbed item and is to be included in the price of other items bid.

Removal of the existing shoulder material shall be coincidental with the milling/overlaying operation to prevent the possible ponding of water. No payment will be made for blading or removal of the existing shoulder material. Any material excavated from the existing shoulder shall be used to raise the existing shoulder to match the new pavement elevation and any surplus material shall be spread along the edge of the shoulders, fore slopes, or other adjacent areas as directed by the Engineer and will be an absorbed item. Material which cannot be placed in adjacent areas and deemed to be excess excavation by the Engineer shall be removed under Pay Item No. 203-G: Excess Excavation. Shoulders will be pulled up at the end of each days paving operation.

Removal of existing raised pavement markers is to be included in the prices for other items bid.

Guardrails are to be replaced. The locations and quantities are listed in the attached table. Pay Item 202-B158: Removal of Guard Rail, Including Rail, Posts & Terminal Ends shall consist of removal of bridge end section, w-beam, terminal end section, posts, and all other appurtenances. All guardrail removed is to be replaced the same day and prior to reopening the adjacent lane of traffic. Voids created by the removal of posts, concrete anchors, footings, etc. shall be backfilled and tamped in accordance with Section 203 of the Standard Specifications. Object markers at the bridge approaches are also to be replaced. Removal of object markers shall be absorbed. Asphalt is to be extended under the guard rail and two feet (2') behind guard rail post as per the attached detail. The area to be paved shall be bladed to accommodate 3" of 12.5-mm, MT, asphalt. The excavated material shall be retained and used to raise the existing shoulder to match the new pavement elevation. The cost of blading will be an absorbed item and is not to be included in the price of pay items bid. Material which cannot be placed and blended in adjacent areas and deemed to be excess excavation by the Engineer shall be removed under Pay Item No. 203-G: Excess Excavation.

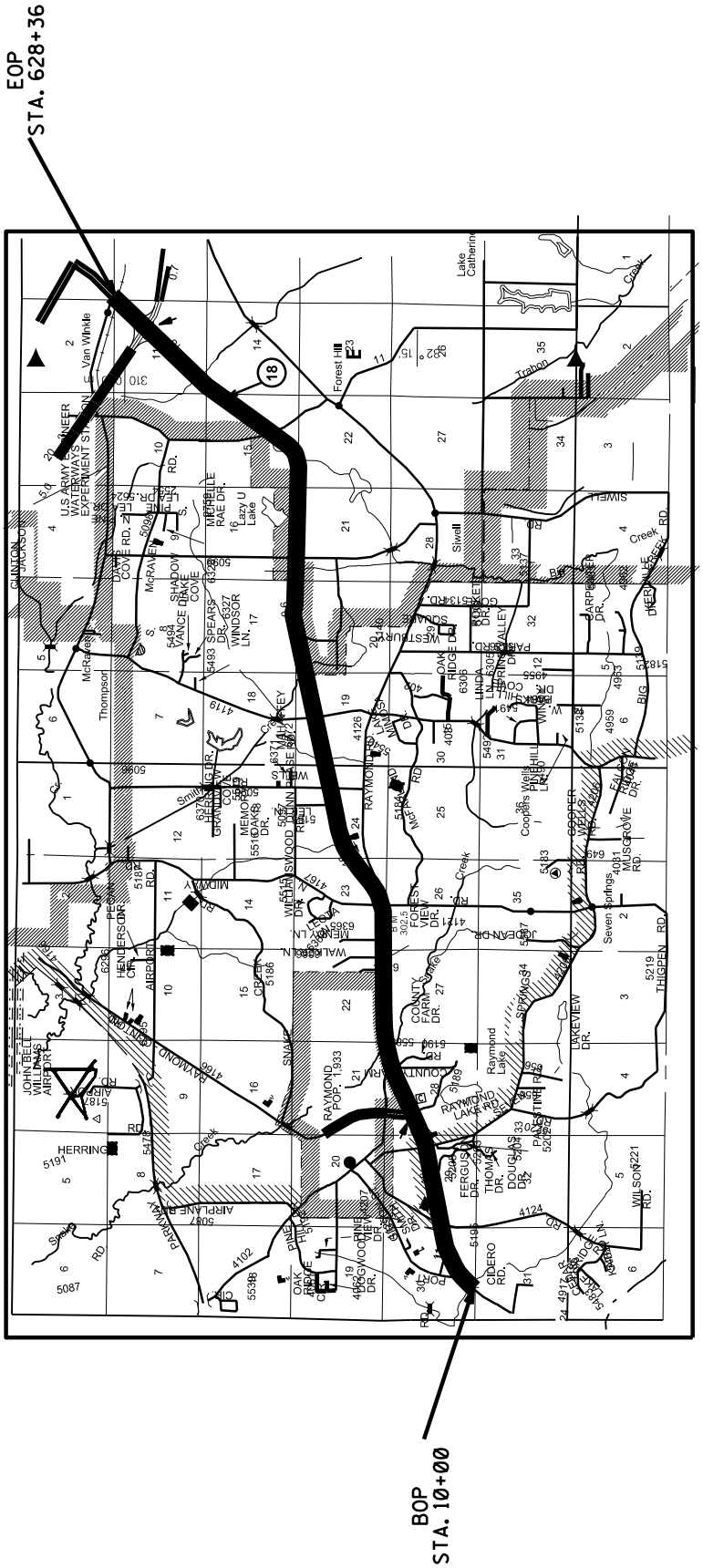
Temporary traffic stripe will be required immediately after the required overlay/milling operation and prior to opening area to traffic. Temporary stripe is to be placed in the same location and configuration as the permanent stripe.

All permanent striping, except that classified as Legend Stripe, will be thermoplastic, 90-mil double drop. Legend stripe shall be 120-mil thickness as required by the Standard Specifications. Rumble strips will be placed throughout the project limits in accordance with the attached details. Edge lines will be placed to accommodate the lane widths shown on the attached applicable typical sections unless prevented by field conditions.

Existing traffic signal loops are to be replaced using the following pay items. Removal of existing traffic signal equipment (647-A) - Prior to milling, remove all existing in-ground magnetometer sensors at the intersections of Hwy 18 at E Main St, Hwy 18 at Hinds Blvd, and Hwy 18 at Seven Springs Road. Radar Vehicle Detection Cable (907-641-D) - the Contractor may remove existing detection loop cable from conduit if necessary. Cable quantities may be adjusted based on radar locations per manufacturer recommendations. Solid State Traffic Actuated Controller, Type 1 (907-632-D) - Replace existing EPAC Controllers with new controllers. Existing EPAC controllers to be salvaged to City of Jackson (601-813-4172). Contractor shall be responsible for transferring existing controller data to the new controllers. Signal Stop Bar Radar Vehicle Detection Sensor, Type 2 (907-641-A) - Radar units shall be mounted per manufacturer recommendations

HINDS COUNTY
STP-0039-02(053)
107631/301000
HIGHWAY 18

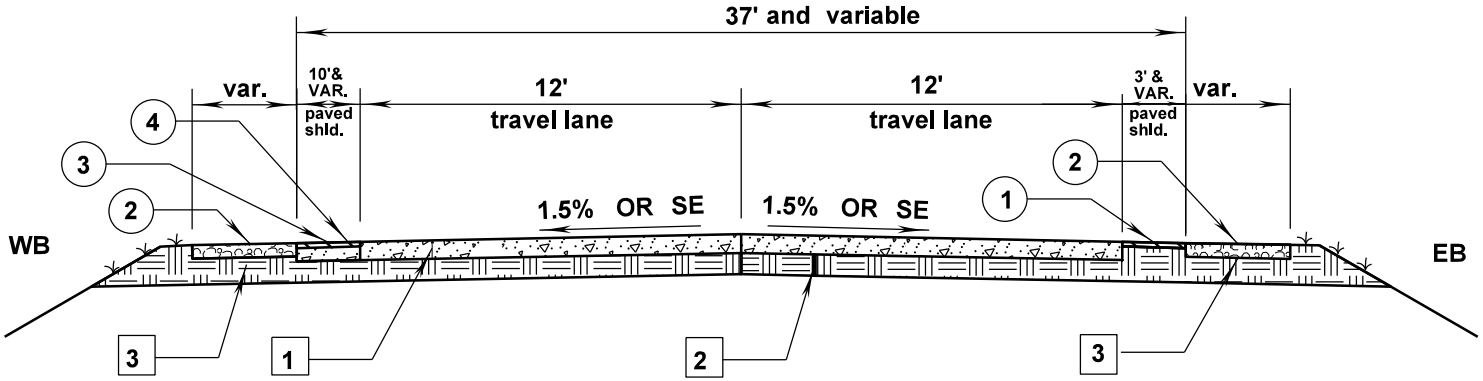
1.7 Miles South of Raymond City Limits to West Bridge Ends of BR 56.1 A & B.
STA. 10+00 TO 628+36



HINDS COUNTY
STP-0039-02(053)
107631/301000
HIGHWAY 18

CRCP 2-Lane

STATION BOP TO 11+00



EXISTING

1 - 9" VAR. CRCP

2 - 6" CEMENT-TREATED BASE

3 - EXISTING CLAY GRAVEL

PROPOSED

① 3" & VAR. 12.5MM MIX, ST WITH TRENCH WIDENING

② FILL LOW SHOULDERS WITH CLASS 5 GROUP C AS DIRECTED BY THE ENGINEER.

③ MILL 2" & VAR. OF EXISTING ASPHALT PAVEMENT

④ OVERLAY WITH 2" OF 12.5MM MIX, MT.

CRCP STATION NUMBERS
EAST BOUND

404+19 TO 410+60
470+90 TO 474+22
481+22 TO 483+34
510+12 TO 515+19
533+76 TO 543+65

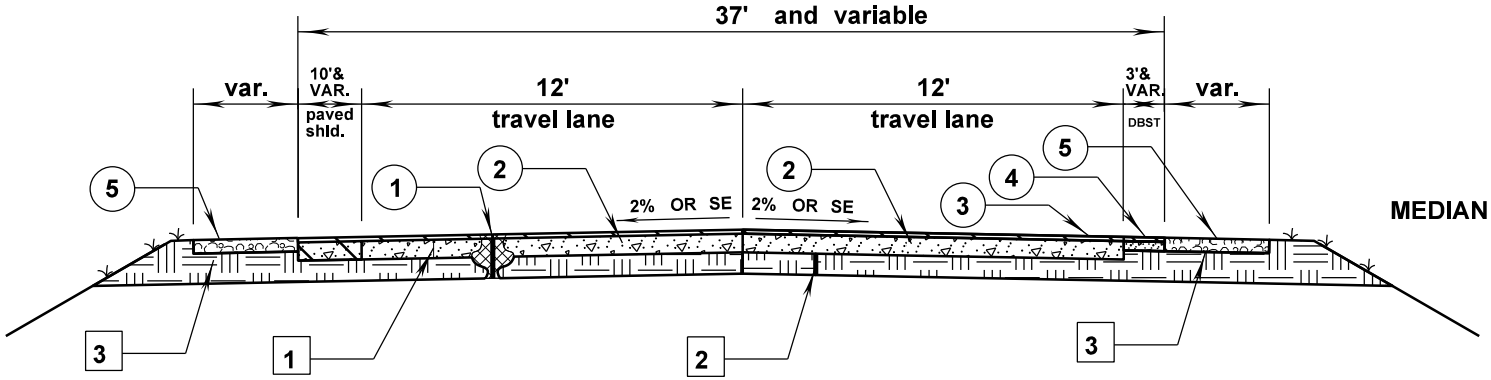
CRCP STATION NUMBERS
WEST BOUND

277+73 TO 280+37
283+80 TO 285+61
326+49 TO 392+71
464+27 TO 468+84
486+85 TO 489+94
508+20 TO 514+78
518+12 TO 522+00
527+00 TO 542+47
547+65 TO 549+61
566+75 TO 574+90

HINDS COUNTY
STP-0039-02(053)
107631/301000
HIGHWAY 18

CRCP W/ ASPHALT OVERLAY

SEE STATION LIST ON LEFT



EXISTING

1 - 9" & VAR. CRCP W/ 3" & VAR. ASPHALT.

2 - 6" CEMENT-TREATED BASE

3 - EXISTING CLAY GRAVEL

PROPOSED

① REPAIR FAILED AREAS FULL DEPTH WITH 12.5MM LEVELING MIX, MT AND CONCRETE. REPLACE FAILED CEMENT-TREATED BASE WITH CONCRETE PER SECTION 503.

② MILL 2" OF EXISTING ASPHALT PAVEMENT

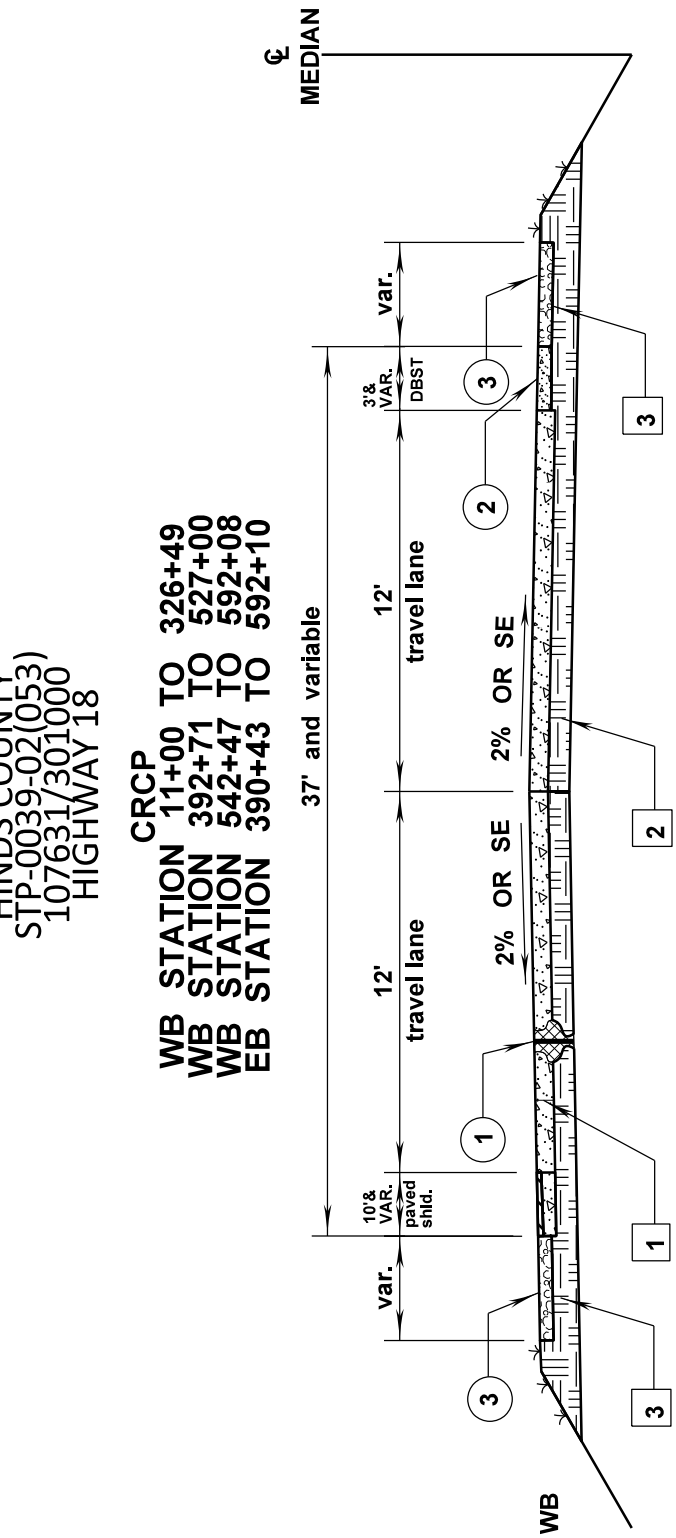
③ OVERLAY WITH 2" OF 12.5MM MIX, MT.

④ REMOVAL OF CEMENT TREATED SHOULDERS W/ VARIABLE DEPTH OVERLAY (202-B047); 3" & VAR. 12.5MM MIX, ST (TRENCH WIDENING)

⑤ FILL LOW SHOULDERS WITH CLASS 5 GROUP C AS DIRECTED BY THE ENGINEER.

HINDS COUNTY
STP-0039-02(053)
107631/301000
HIGHWAY 18

CRCP
WB STATION 11+00 TO 326+49
WB STATION 392+71 TO 527+00
WB STATION 542+47 TO 592+08
EB STATION 390+43 TO 592+10



PROPOSED

1 - REPAIR FAILED AREAS FULL DEPTH WITH CONCRETE. REPLACE FAILED CEMENT-TREATED BASE WITH CONCRETE PER SECTION 503.

2 - REMOVAL OF CEMENT TREATED SHOULDERS W/ VARIABLE DEPTH OVERLAY (202-B047); 3" & VAR. 12.5MM MIX, ST (TRENCHWIDENING)

3 - FILL LOW SHOULDERS WITH CLASS 5 GROUP C AS DIRECTED BY THE ENGINEER.

EXISTING

1 - 9" VAR. CRCP

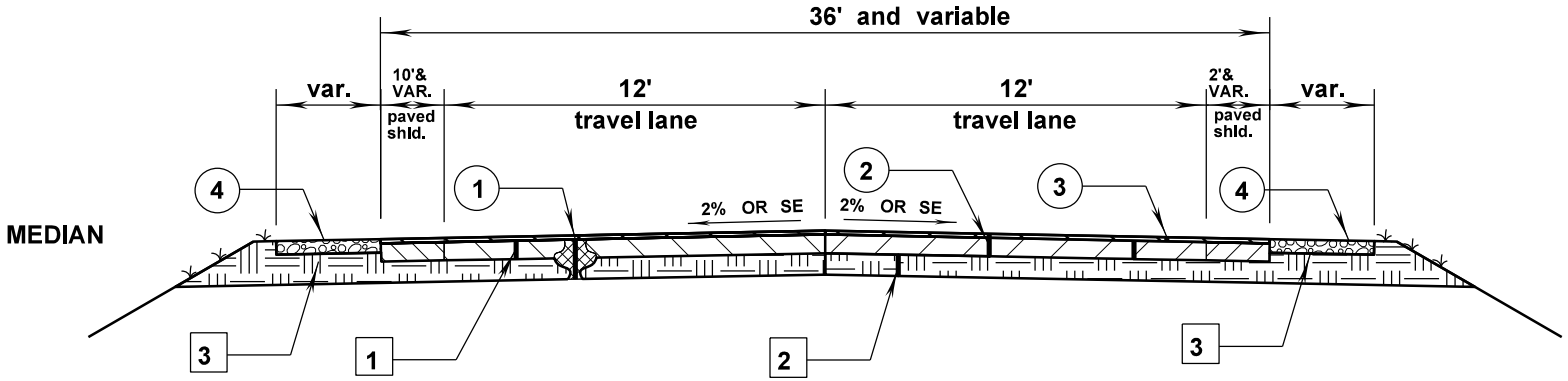
2 - 6" CEMENT-TREATED BASE MATERIAL

3 - EXISTING CLAY GRAVEL

HINDS COUNTY
STP-0039-02(053)
107631/301000
HIGHWAY 18

FULL DEPTH ASPHALT

EB STATION 11+00 TO 390+43



EXISTING

1 - 12" & VAR. ASPHALT PAVEMENT

2 - 8" LIME TREATED BASE

3 - EXISTING CLAY GRAVEL

PROPOSED

① REPAIR FAILED AREAS FULL DEPTH WITH 12.5MM LEVELING MIX, MT

② MILL 2" OF EXISTING ASPHALT PAVEMENT

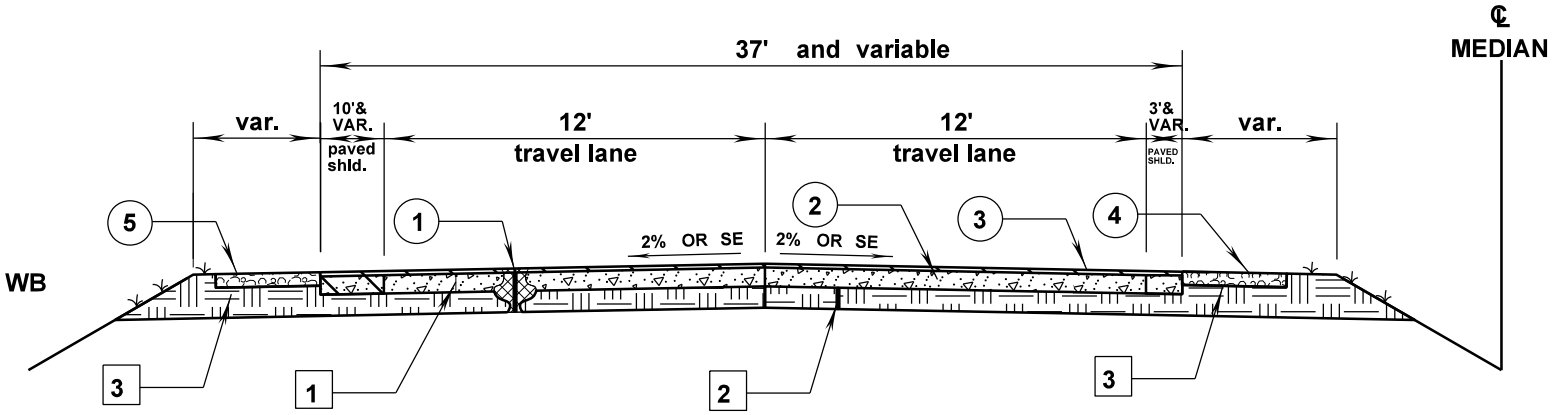
③ OVERLAY WITH 2" OF 12.5MM MIX, MT.

④ FILL LOW SHOULDERS WITH CLASS 5 GROUP C AS DIRECTED BY THE ENGINEER.

HINDS COUNTY
STP-0039-02(053)
107631/301000
HIGHWAY 18

JRCP W/ ASPHALT OVERLAY

WB STATION 592+08 TO EOP
EB STATION 592+10 TO EOP



EXISTING

1 - 9" & VAR. JRCP OVERLAID W/ 3" & VAR. ASPHALT.

2 - 6" CEMENT-TREATED BASE

3 - EXISTING CLAY GRAVEL

PROPOSED

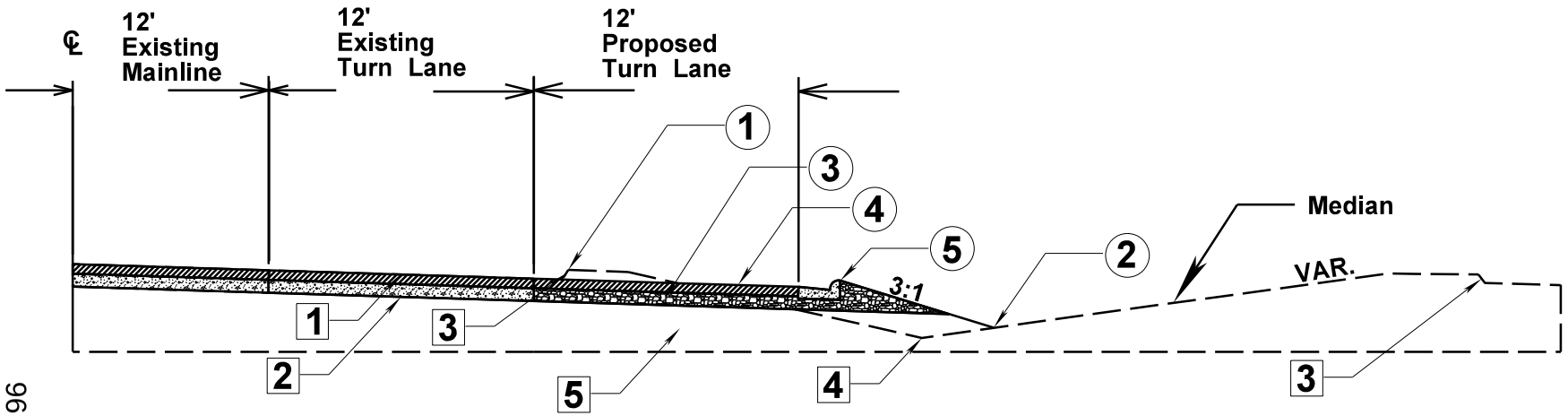
① REPAIR FAILED AREAS FULL DEPTH WITH 12.5MM LEVELING MIX, MT AND CONCRETE. REPLACE FAILED CEMENT-TREATED BASE WITH CONCRETE PER SECTION 503.

② MILL 2" & VAR. OF EXISTING ASPHALT PAVEMENT

③ OVERLAY WITH 2" OF 12.5MM MIX, MT.

④ FILL LOW SHOULDERS WITH CLASS 5 GROUP C AS DIRECTED BY THE ENGINEER.

HINDS COUNTY
STP-0039-02(053)
107631/301000
HIGHWAY 18
TURN LANE ADDITION AT SIWELL ROAD



Existing

1	12' Asphalt Turn Lane
2	Concrete Base material
3	Type 3 Curb and Gutter
4	Ditch Line
5	Subgrade

Proposed

①	Removal of Type 3 Curb and Gutter
②	Excavation of Existing Base and Subgrade Material for the Construction of New Turn Lane and Ditch Line
③	8" of Crushed Stone on Type 5 Geotextile Fabric
④	6" of 12.5 MM MT Asphalt (1@ 2-1/2",1@ 2",1@ 1-1/2")
⑤	New Type 3A Curb and Gutter

Drainage Repairs 107631/301000

Station	Lane	18" Pipe Removed and Relaid (ft)	18" End Section Removed and Relaid (Each)	24" Concrete End Section (Each)	24" Pipe Removed and Relaid (LF)	Removal of Concrete Paved Ditch (Sq YD)	Concrete Paved Ditch (CY)	Borrow Material B9-6 (CY)	Solid Sodding (SY)
34+75	LRL	-	-	-	-	5.0	0.4	-	-
50+00	RRL	-	-	-	-	124.4	10.4	100.0	88.9
174+30	RRL	16.0	1.0	-	-	0.0	-	-	-
183+70	LRL	-	-	-	-	5.0	0.4	10.0	-
194+60	LRL	-	-	-	-	5.0	0.4	1.0	-
201+60	LRL	-	-	-	-	4.6	0.4	2.0	-
204+20	LRL	-	-	-	-	4.6	0.4	-	-
230+35	LRL	-	-	-	-	5.0	0.4	-	-
237+15	LRL	8.0	-	-	-	3.6	0.3	-	-
269+20	LRL	-	-	-	-	22.3	1.9	1.5	11.6
304+00	LRL	-	-	-	-	18.3	1.5	5.0	8.9
324+20	LRL	-	-	-	-	5.0	0.4	-	-
230+10	LLL	-	-	-	-	6.1	0.5	-	-
35+50	LLL	-	-	1.0	8.0	55.0	4.6	20.0	21.6
Totals		24	1	1	8	263.7	22.0	139.5	170.9

Notes: ** All excavation, site grading, approved pipe gaskets, and incidental grassing, in and around repaired drainage areas shall be absorbed into other items bid.

** Bedding material to be placed under pipes shall be borrow material class B9-6 and paid for as such.

GUARD RAIL QUANTITIES 107631/301000

	GUARDRAIL		TERMINAL END SECTION			BRIDGE END SECTION		DELINEATORS			REMOVAL ITEMS	
STATION	(W-BEAM) LF	(DOUBLE FACED) LF	DOUBLE FACED	FLARED	NON-FLARED	TYPE "H" (EA)	TYPE "D" Modified (EA)	WHITE	YELLOW	Type 3 Object Markers	GUARDRAIL	REMARKS
140+55	137.5				1	1		7		1	201.75	RRL
140+55	137.5			1		1			7	1	201.75	LRL
141+76	150			1			1	7		1	200	LRL
141+76	150			1			1		7	1	200	RLL
605+16	150			1			1	7		1	214.25	RRL
605+16	75	75	1				1		7	1	214.25	LRL
606+40	75			1			1	7		1	139.25	LLL
606+40	67.5	75	1				1		7	1	201.75	RLL
TOTAL =	942.5	150	2	5	1	2	6	28	28	8	1573	
	L.F.	LF.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	LF.	

* ALL TERMINAL END SECTIONS ARE 37.5'
* REMOVAL OF ALL GUARDRAIL (BRIDGE END SECTIONS, W-BEAM, TYPE-I CABLE ANCHORAGE, TERMINAL END SECTIONS, ETC.) WILL BE PAID UNDER PAY ITEM 202-B REMOVAL OF GUARD RAIL.
* REMOVAL OF GUARDRAIL DELINEATORS ARE CONSIDERED INCIDENTAL TO THE REMOVAL OF GUARDRAIL AND WILL NOT BE MEASURED AS A SEPARATE PAY ITEM.
*REMOVAL OF OBJECT MARKERS WILL NOT BE MEASURED AS A SEPARATE PAY ITEM AS SHALL BE ABSORBED IN OTHER ITEMS

Asphalt Failed Areas 107631/301000

STATION	STATION	LANE	WIDTH (FT)	LENGTH (FT)	AREA (SF)*	Removal of Asphalt (SY)	12.5MM, MT LEVELING (Tons)	Excess Excavation, LVM, AH (CY)
78+09	78+19	LRL	12	10	120.0	13.333	9.00	4.44
390+43		RRL	12	12	144.0	16.000	10.80	5.33
390+31		LRL	12	12	144.0	16.000	10.80	5.33
				TOTAL	*408.0*	*45.333*	*30.60*	***15.111***

PUNCH OUT (Turn Lane Repair) QUANTITIES 107631/301000

STATION	TO	STATION	LOCATION	LENGTH	WIDTH	202-B007 REMOVAL OF ASPHALT PAVEMENT, ALL DEPTHS	403-B002 12.5MM MT ASPHALT LEVELING	202-B068 REMOVAL OF CONCRETE PAVEMENT PUNCHOUTS, 9" DEPTH	503-A003 9" AND VARIABLE REINFORCED CONCRETE PAVEMENT, BROOM FINISH	503-C004 SAW CUT 3-INCH	503-C010 SAW CUT, FULL DEPTH	503-B001 SAW CUT, LONGITUDINAL JOINTS	503-E002 TIE BARS, NO.5 DEFORMED, DRILLED AND EPOXIED OR GROUTED	202-B045 REMOVAL OF CEMENT TREATED BASE, ALL DEPTHS	503-D001 CONCRETE FOR BASE REPAIR
559+15	-	560+14	RLL	99.00	11	60.5	-	60.5	121	-	22	99	50	15	10
556+09	-	557+28	LRL	119.00	12	79.3	-	79.3	159	-	24	119	60	20	13
530+26	-	530+68	LRL	42.00	11	25.7	-	25.7	51	-	22	42	21	6	4
529+64	-	529+76	RLL	12.00	40	26.7	-	26.7	53	-	40	12	6	7	4
529+76	-	530+17	RLL	41.00	11	25.1	-	25.1	50	-	18	41	21	6	4
511+24	-	512+05	RLL	81.00	12	54.0	-	54.0	108	-	24	81	41	14	9
510+80	-	511+68	LRL	88.00	12	58.7	-	58.7	117	-	24	88	44	15	10
492+82	-	493+30	RLL	48.00	12	32.0	-	32.0	64	-	23	48	24	8	5
474+41	-	474+95	RLL	54.00	12	36.0	-	36.0	72	-	23	54	27	9	6
434+38	-	435+08	RLL	70.00	12	46.7	-	46.7	93	-	24	70	35	12	8
430+53	-	431+29	LRL	76.00	12	50.7	-	50.7	101	-	24	76	38	13	8
TOTAL =						**495**	**0**	**495**	**990**	**0**	**268**	**730**	**365**	**124**	**83**

PUNCH OUT (CRCP) QUANTITIES 107631/301000

STATION		TO STATION	LOCATION	LENGTH	WIDTH	202-B007 REMOVAL OF ASPHALT PAVEMENT, ALL DEPTHS	403-B002 12.5MM MT ASPHALT LEVELING	202-B068 REMOVAL OF CONCRETE PAVEMENT PUNCHOUTS, 9" DEPTH	503-A003 9" AND VARIABLE REINFORCED CONCRETE PAVEMENT, BROOM FINISH	503-C004 SAW CUT 3-INCH	503-C010 SAW CUT, FULL DEPTH	503-B001 SAW CUT, LONGITUDINAL JOINTS	503-E002 TIE BARS, NO.5 DEFORMED, DRILLED AND EPOXIED OR GROUTED	202-B045 REMOVAL OF CEMENT TREATED BASE, ALL DEPTHS	503-D001 CONCRETE FOR BASE REPAIR
625+57	-	625+72	LLL	15	12	-	-	20	20	12	12	15	8	5	2
625+57	-	625+72	RLL	15	12	-	-	20	20	12	12	15	8	5	2
592+02	-	592+20	RRL	18	12	-	-	24	24	12	12	18	9	6	2
592+02	-	592+20	LRL	18	12	-	-	24	24	12	12	18	9	6	2
562+72	-	562+78	LLL	6	12	-	-	8	8	12	12	6	3	2	1
467+48	-	467+68	RLL	20	12	27	5	27	27	12	12	20	10	7	2
467+48	-	467+68	RRL	20	12	27	5	27	27	12	12	20	10	7	2
426+67	-	427+03	RRL	36	12	-	-	48	48	12	12	36	18	12	4
426+67	-	427+03	LRL	36	12	-	-	48	48	12	12	36	18	12	4
233+43	-	233+58	LRL	15	12	-	-	20	20	12	12	15	8	5	2
233+43	-	233+58	LLL	15	12	-	-	20	20	12	12	15	8	5	2
42+96	-	43+08	RLL	8	12	-	-	11	11	12	12	8	4	3	1
42+96	-	43+08	LLL	8	12	-	-	11	11	12	12	8	4	3	1
TOTAL =						**53**	**9**	**307**	**307**	**156**	**156**	**230**	**115**	**77**	**26**

PUNCH OUT (JRCP) QUANTITIES 107631/301000

STATION	TO	STATION	LOCATION	LENGTH	WIDTH	202-B007 REMOVAL OF ASPHALT PAVEMENT, ALL DEPTHS	403-B002 12.5MM MT ASPHALT LEVELING	202-B068 REMOVAL OF CONCRETE PAVEMENT PUNCHOUTS, 9" DEPTH	503-A003 9" AND VARIABLE REINFORCED CONCRETE PAVEMENT, BROOM FINISH	503-C004 SAW CUT 3-INCH	503-C010 SAW CUT, FULL DEPTH	503-B001 SAW CUT, LONGITUDINAL JOINTS	503-E002 TIE BARS, NO.5 DEFORMED, DRILLED AND EPOXIED OR GROUTED	202-B045 REMOVAL OF CEMENT TREATED BASE, ALL DEPTHS	503-D001 CONCRETE FOR BASE REPAIR	501-D001 Expansion Joint With Dowels
619+45	-	619+55	LLL	10	12	13	2	13	13	12	12	10	5	3	1	12
619+45	-	619+55	RLL	10	12	13	2	13	13	12	12	10	5	3	1	12
580+77	-	580+83	LLL	6	12	-	-	8	8	12	12	6	3		1	12
139+54	-	139+66	LLL	12	12	-	-	16	16	12	12	12	6		1	12
139+54	-	139+66	RLL	12	12	-	-	16	16	12	12	12	6		1	12
139+84	-	139+96	RLL	12	12			16	16	12	12	12	6		1	12
TOTAL =						**27**	**5**	**83**	**83**	**72**	**72**	**62**	**25**	**7**	**7**	**72**

PUNCH OUT (CRCP) QUANTITIES 107631/301000

STATION	TO	STATION	LOCATION	LENGTH	WIDTH	202-B007 REMOVAL OF ASPHALT PAVEMENT, ALL DEPTHS	403-B002 12.5MM MT ASPHALT LEVELING	202-B068 REMOVAL OF CONCRETE PAVEMENT PUNCHOUTS, 9" DEPTH	503-A003 9" AND VARIABLE REINFORCED CONCRETE PAVEMENT, BROOM FINISH	503-C004 SAW CUT 3-INCH	503-C010 SAW CUT, FULL DEPTH	503-B001 SAW CUT, LONGITUDINAL JOINTS	503-E002 TIE BARS, NO.5 DEFORMED, DRILLED AND EPOXIED OR GROUTED	202-B045 REMOVAL OF CEMENT TREATED BASE, ALL DEPTHS	503-D001 CONCRETE FOR BASE REPAIR
625+57	-	625+72	LLL	15	12	-	-	20	20	12	12	15	8	5	2
625+57	-	625+72	RLL	15	12	-	-	20	20	12	12	15	8	5	2
592+02	-	592+20	RRL	18	12	-	-	24	24	12	12	18	9	6	2
592+02	-	592+20	LRL	18	12	-	-	24	24	12	12	18	9	6	2
562+72	-	562+78	LLL	6	12	-	-	8	8	12	12	6	3	2	1
467+48	-	467+68	RLL	20	12	27	5	27	27	12	12	20	10	7	2
467+48	-	467+68	RRL	20	12	27	5	27	27	12	12	20	10	7	2
426+67	-	427+03	RRL	36	12	-	-	48	48	12	12	36	18	12	4
426+67	-	427+03	LRL	36	12	-	-	48	48	12	12	36	18	12	4
233+43	-	233+58	LRL	15	12	-	-	20	20	12	12	15	8	5	2
233+43	-	233+58	LLL	15	12	-	-	20	20	12	12	15	8	5	2
42+96	-	43+08	RLL	8	12	-	-	11	11	12	12	8	4	3	1
42+96	-	43+08	LLL	8	12	-	-	11	11	12	12	8	4	3	1
TOTAL =						**53**	**9**	**307**	**307**	**156**	**156**	**230**	**115**	**77**	**26**

PUNCH OUT (JRCP) QUANTITIES 107631/301000

STATION		TO STATION	LOCATION	LENGTH	WIDTH	202-B007 REMOVAL OF ASPHALT PAVEMENT, ALL DEPTHS	403-B002 12.5MM MT ASPHALT LEVELING	202-B068 REMOVAL OF CONCRETE PAVEMENT PUNCHOUTS, 9" DEPTH	503-A003 9" AND VARIABLE REINFORCED CONCRETE PAVEMENT, BROOM FINISH	503-C004 SAW CUT 3 INCH	503-C010 SAW CUT, FULL DEPTH	503-B001 SAW CUT, LONGITUDINAL JOINTS	503-E002 TIE BARS, NO.5 DEFORMED, DRILLED AND EPOXIED OR GROUTED	202-B045 REMOVAL OF CEMENT TREATED BASE, ALL DEPTHS	503-D001 CONCRETE FOR BASE REPAIR	501-D001 Expansion Joint With Dowels
619+45	-	619+55	LLL	10	12	13	2	13	13	12	12	10	5	3	1	12
619+45	-	619+55	RLL	10	12	13	2	13	13	12	12	10	5	3	1	12
580+77	-	580+83	LLL	6	12	-	-	8	8	12	12	6	3		1	12
139+54	-	139+66	LLL	12	12	-	-	16	16	12	12	12	6		1	12
139+54	-	139+66	RLL	12	12	-	-	16	16	12	12	12	6		1	12
139+84	-	139+96	RLL	12	12			16	16	12	12	12	6		1	12
TOTAL =						**27**	**5**	**83**	**83**	**72**	**72**	**62**	**25**	**7**	**7**	**72**

STP-0039-02(053) 107631-301000						
Spalled Areas -- Westbound						
STATION	TO	STATION	LOCATION	AREA (ft^2)	VOLUME (ft^3)	Weight (lbs)
593+00		592+00	RLL	1.0	0.1	11.9
592+00		591+00	RLL	2.0	0.3	23.8
590+00		589+00	LLL	1.0	0.1	11.9
587+00		586+00	LLL	0.3	0.0	4.0
586+00		585+00	LLL	0.2	0.0	2.6
585+00		584+00	LLL	0.5	0.1	5.9
584+00		583+00	RLL	12.0	1.5	142.5
583+00		582+00	RLL & LLL	12.0	1.5	142.5
582+00		581+00	LLL	4.0	0.5	47.5
581+00		580+00	RLL & LLL	5.0	0.6	59.4
580+00		579+00	LLL	0.3	0.0	4.0
577+00		576+00	RLL & LLL	8.8	1.1	104.2
576+00		575+00	RLL & LLL	0.5	0.1	5.9
575+00		574+00	RLL	0.3	0.0	4.0
559+00		558+00	RLL	6.0	0.8	71.3
558+00		557+00	LLL	2.0	0.3	23.8
557+00		556+00	LLL	12.1	1.5	144.1
556+00		555+00	LCL	18.9	2.4	224.3
552+00		551+00	RLL	0.2	0.0	2.6
547+00		546+00	RLL	20.6	2.6	244.1
546+00		545+00	RLL & LLL	0.3	0.0	4.0
531+00		530+00	LLL	0.2	0.0	2.0
530+00		529+00	LLL	0.3	0.0	4.0
521+00		519+00	LLL	0.2	0.0	2.6
519+00		518+00	LLL	0.5	0.1	5.9
518+00		517+00	RLL & LLL	0.5	0.1	5.9
517+00		516+00	LLL	34.0	4.3	403.8
509+00		508+00	RLL & LLL	1.0	0.1	11.9
508+00		507+00	RLL	0.3	0.0	4.0
507+00		506+00	LCL	0.5	0.1	5.9
505+00		504+00	RLL & LLL	1.5	0.2	17.8

Spalled Areas -- Westbound						
STATION	TO	STATION	LOCATION	AREA (ft^2)	VOLUME (ft^3)	Weight (lbs)
504+00		503+00	RLL & LLL	0.5	0.1	5.9
500+00		499+00	RLL	1.0	0.1	11.9
499+00		498+00	LCL	13.3	1.7	158.3
487+00		486+00	LLL & LCL	8.0	1.0	95.0
483+00		482+00	LCL	6.0	0.8	71.3
482+00		481+00	LLL	1.0	0.1	11.9
481+00		480+00	LLL & LCL	2.5	0.3	29.7
480+00		479+00	RLL & LLL	0.7	0.1	7.9
479+00		478+00	RLL & LCL	6.0	0.8	71.3
478+00		477+00	LLL	0.0	0.0	0.0
477+00		476+00	LLL, RLL, & LCL	0.3	0.0	4.0
476+00		475+00	LLL, RLL, & LCL	1.6	0.2	18.5
475+00		474+00	RLL & LCL	7.0	0.9	83.1
473+00		472+00	RLL & LLL	1.0	0.1	11.9
472+00		471+00	LLL, RLL, & LCL	63.9	8.0	758.7
463+00		462+00	RLL	1.6	0.2	19.1
462+00		461+00	RLL & LLL	0.7	0.1	7.9
461+00		460+00	RLL	4.5	0.6	53.4
460+00		459+00	RLL	3.5	0.4	41.6
459+00		458+00	RLL & LLL	2.3	0.3	27.7
458+00		457+00	RLL & LCL	1.0	0.1	11.9
457+00		456+00	RLL	12.9	1.6	153.1
456+00		455+00	RLL	2.3	0.3	27.7
455+00		454+00	RLL & LLL	6.0	0.8	71.3
454+00		453+00	RLL & LLL	13.5	1.7	160.3
453+00		452+00	RLL	1.1	0.1	12.5
452+00		451+00	RLL	1.0	0.1	11.9
451+00		450+00	LLL	3.0	0.4	35.6
450+00		449+00	RLL & LLL	0.7	0.1	7.9
449+00		448+00	RLL & LLL	0.0	0.0	0.0
448+00		447+00	RLL	0.5	0.1	5.9
447+00		446+00	LLL	0.3	0.0	4.0

Spalled Areas -- Westbound						
STATION	TO	STATION	LOCATION	AREA (ft^2)	VOLUME (ft^3)	Weight (lbs)
446+00		445+00	LLL	4.7	0.6	55.4
445+00		444+00	RLL & LLL	3.3	0.4	39.6
444+00		443+00	LLL & LCL	2.5	0.3	29.7
443+00		442+00	RLL	0.0	0.0	0.0
442+00		441+00	RLL & LLL	1.0	0.1	11.9
441+00		440+00	RLL	0.8	0.1	9.2
440+00		439+00	RLL & LLL	0.2	0.0	2.6
439+00		438+00	RLL	0.8	0.1	9.9
438+00		437+00	RLL	34.0	4.3	403.8
437+00		436+00	RLL	2.5	0.3	29.7
436+00		435+00	RLL	0.5	0.1	5.9
433+00		432+00	RLL & LLL	0.3	0.0	4.0
432+00		431+00	RLL	28.3	3.5	336.5
431+00		430+00	RLL & LLL	2.7	0.3	31.7
430+00		429+00	RLL	0.3	0.0	4.0
429+00		428+00	RLL	12.9	1.6	153.3
428+00		427+00	RLL	34.2	4.3	406.4
427+00		426+00	RLL & LLL	1.6	0.2	18.5
426+00		425+00	RLL & LLL	1.5	0.2	17.8
423+00		422+00	RLL	0.3	0.0	4.0
417+00		416+00	RLL	0.3	0.0	4.0
414+00		413+00	RLL	1.7	0.2	19.8
412+00		411+00	RLL	96.9	12.1	1150.6
411+00		410+00	RLL & LLL	10.8	1.3	128.0
410+00		409+00	RLL	12.2	1.5	144.5
409+00		408+00	RLL & LLL	2.2	0.3	26.4
408+00		407+00	LLL & LCL	13.0	1.6	154.4
406+00		405+00	RLL, LLL, & LCL	28.7	3.6	340.4
405+00		404+00	RLL & LLL	34.4	4.3	409.0
404+00		403+00	RLL & LLL	26.6	3.3	315.3
403+00		402+00	RLL & LLL	12.8	1.6	152.4
402+00		401+00	RLL & LLL	3.2	0.4	38.3

Spalled Areas -- Westbound						
STATION	TO	STATION	LOCATION	AREA (ft^2)	VOLUME (ft^3)	Weight (lbs)
400+00		399+00	RLL & LLL	0.2	0.0	2.6
399+00		398+00	RLL, LLL, & LCL	2.8	0.3	33.0
398+00		397+00	RLL, LLL, & LCL	8.9	1.1	106.2
394+00		393+00	RLL & LLL	39.7	5.0	471.7
327+00		326+00	RLL & LLL	3.4	0.4	40.9
326+00		325+00	RLL & LLL	3.1	0.4	36.3
325+00		324+00	RLL & LLL	10.4	1.3	124.0
324+00		323+00	RLL & LLL	6.6	0.8	77.8
323+00		322+00	RLL & LLL	3.8	0.5	45.5
322+00		321+00	RLL & LLL	15.0	1.9	178.1
321+00		320+00	RLL & LLL	12.0	1.5	142.5
320+00		319+00	RLL & LLL	1.4	0.2	17.2
319+00		318+00	RLL & LLL	2.5	0.3	29.7
318+00		317+00	RLL & LLL	7.7	1.0	91.0
317+00		316+00	RLL & LLL	2.1	0.3	24.4
316+00		315+00	RLL & LLL	9.7	1.2	115.5
315+00		314+00	RLL & LLL	35.7	4.5	423.5
314+00		313+00	RLL & LLL	18.6	2.3	220.3
313+00		312+00	RLL & LLL	8.3	1.0	99.0
312+00		311+00	RLL & LLL	14.8	1.9	176.1
311+00		310+00	RLL & LLL	39.1	4.9	463.8
310+00		309+00	RLL & LLL	49.8	6.2	591.8
309+00		308+00	RLL & LLL	60.9	7.6	723.7
308+00		307+00	RLL & LLL	20.7	2.6	246.1
307+00		306+00	RLL & LLL	19.2	2.4	227.6
306+00		305+00	RLL & LLL	20.2	2.5	239.5
305+00		304+00	RLL & LLL	9.4	1.2	111.5
304+00		303+00	RLL & LLL	9.5	1.2	112.8
303+00		302+00	RLL & LLL	19.3	2.4	229.6
302+00		301+00	RLL & LLL	2.7	0.3	32.3
301+00		300+00	RLL & LLL	36.7	4.6	435.4
299+00		298+00	LLL	2.7	0.3	31.7

Spalled Areas -- Westbound						
STATION	TO	STATION	LOCATION	AREA (ft^2)	VOLUME (ft^3)	Weight (lbs)
298+00		297+00	RLL & LLL	17.1	2.1	202.5
297+00		296+00	RLL & LLL	35.4	4.4	420.9
296+00		295+00	RLL	13.2	1.7	157.0
295+00		294+00	RLL & LLL	21.1	2.6	250.0
294+00		293+00	RLL & LLL	15.6	2.0	185.4
293+00		292+00	RLL & LLL	26.4	3.3	313.5
292+00		291+00	RLL & LLL	7.1	0.9	83.8
291+00		290+00	RLL & LLL	8.7	1.1	103.6
289+00		288+00	RLL & LLL	2.5	0.3	29.7
288+00		287+00	RLL & LLL	67.2	8.4	797.6
287+00		285+61	RLL & LLL	46.4	5.8	550.9
285+61		283+80	RLL & LLL	159.0	19.9	1888.1
283+80		283+00	RLL & LLL	175.2	21.9	2080.1
282+00		280+37	RLL & LLL	59.6	7.4	707.2
277+00		276+00	RLL & LLL	52.8	6.6	627.4
276+00		275+00	RLL & LLL	24.6	3.1	292.3
275+00		274+00	RLL & LLL	22.1	2.8	262.6
274+00		273+00	RLL & LLL	32.8	4.1	389.9
273+00		272+00	RLL & LLL	51.7	6.5	613.5
272+00		271+00	RLL & LLL	87.3	10.9	1036.4
271+00		270+00	RLL & LLL	34.2	4.3	405.7
270+00		269+00	RLL & LLL	31.6	3.9	374.7
269+00		268+00	RLL & LLL	17.0	2.1	201.9
268+00		267+00	RLL & LLL	63.4	7.9	752.7
267+00		266+00	RLL & LLL	13.3	1.7	157.7
266+00		265+00	RLL & LLL	29.5	3.7	350.3
265+00		264+00	RLL & LLL	25.9	3.2	307.4
264+00		263+00	RLL & LLL	13.7	1.7	162.3
263+00		262+00	RLL & LLL	4.3	0.5	51.5
262+00		261+00	RLL & LLL	2.5	0.3	29.7
261+00		260+00	RLL & LLL	27.3	3.4	324.6
260+00		259+00	LLL, LCL, & RLL	33.1	4.1	392.5

Spalled Areas -- Westbound						
STATION	TO	STATION	LOCATION	AREA (ft^2)	VOLUME (ft^3)	Weight (lbs)
259+00		258+00	RLL & LLL	64.2	8.0	762.0
258+00		257+00	RLL & LLL	74.0	9.3	878.8
257+00		256+00	LLL, LCL, & RLL	94.8	11.9	1126.1
256+00		255+00	LLL, LCL, & RLL	125.1	15.6	1485.0
255+00		254+00	RLL & LLL	56.6	7.1	671.6
254+00		253+00	RLL & LLL	18.8	2.4	223.6
253+00		252+00	RLL & LLL	27.5	3.4	326.6
252+00		251+00	RLL & LLL	30.9	3.9	366.8
251+00		250+00	RLL & LLL	19.3	2.4	228.9
250+00		249+00	RLL & LLL	41.4	5.2	491.5
249+00		248+00	RLL & LLL	89.2	11.1	1058.9
248+00		247+00	RLL & LLL	100.8	12.6	1197.4
247+00		246+00	RLL & LLL	58.2	7.3	691.4
246+00		245+00	RLL & LLL	49.2	6.1	583.9
245+00		244+00	RLL & LLL	80.7	10.1	957.9
244+00		243+00	RLL & LLL	16.2	2.0	192.0
243+00		242+00	RLL & LLL	45.7	5.7	542.3
242+00		241+00	RLL & LLL	69.0	8.6	819.4
241+00		240+00	RLL & LLL	41.8	5.2	496.8
240+00		239+00	RLL & LLL	16.2	2.0	192.0
239+00		238+00	RLL & LLL	13.7	1.7	162.3
238+00		237+00	RLL & LLL	14.7	1.8	174.2
237+00		236+00	RLL & LLL	6.3	0.8	75.2
236+00		235+00	RLL & LLL	57.2	7.1	678.9
235+00		234+00	RLL & LLL	24.7	3.1	292.9
234+00		233+00	RLL & LLL	16.2	2.0	192.0
233+00		232+00	RLL & LLL	37.5	4.7	445.3
232+00		231+00	RLL & LLL	30.0	3.8	356.3
231+00		230+00	RLL & LLL	152.5	19.1	1810.9
230+00		229+00	RLL & LLL	130.2	16.3	1545.7
229+00		228+00	RLL & LLL	63.0	7.9	748.1
228+00		227+00	Traffic Loop, LLL & RLL	99.3	12.4	1179.6

Spalled Areas -- Westbound						
STATION	TO	STATION	LOCATION	AREA (ft^2)	VOLUME (ft^3)	Weight (lbs)
227+00		226+00	RLL & LLL	90.3	11.3	1072.7
226+00		225+00	RLL & LLL	75.9	9.5	901.2
225+00		224+00	RLL & LLL	64.3	8.0	764.0
224+00		223+00	RLL & LLL	38.3	4.8	455.2
223+00		222+00	RLL & LLL	2.0	0.3	23.8
221+00		220+00	RLL & LLL	1.3	0.2	15.8
220+00		219+00	RLL & LLL	12.7	1.6	150.4
215+00		214+00	RLL & LLL	23.0	2.9	273.1
212+00		211+00	RLL & LLL	3.0	0.4	35.6
210+00		209+00	RLL & LLL	0.5	0.1	5.9
207+00		206+00	RLL & LLL	0.2	0.0	2.0
205+00		204+00	RLL & LLL	0.3	0.0	4.0
204+00		203+00	RLL & LLL	6.0	0.8	71.3
202+00		201+00	RLL & LLL	4.0	0.5	47.5
201+00		200+00	RLL & LLL	1.5	0.2	17.8
199+00		198+00	RLL & LLL	2.0	0.3	23.8
197+00		196+00	RLL & LLL	5.0	0.6	59.4
195+00		194+00	RLL & LLL	0.3	0.0	4.0
194+00		193+00	RLL & LLL	2.0	0.3	23.8
189+00		188+00	RLL & LLL	1.0	0.1	5.9
188+00		187+00	RLL & LLL	3.3	0.6	52.8
187+00		186+00	RLL & LLL	1.0	0.2	15.8
185+00		184+00	RLL & LLL	1.2	0.2	18.5
182+00		181+00	RLL & LLL	2.0	0.3	31.7
181+00		180+00	RLL & LLL	4.5	0.8	71.3
180+00		179+00	RLL & LLL	0.5	0.1	7.9
176+00		175+00	RLL & LLL	2.0	0.3	31.7
175+00		174+00	RLL & LLL	0.5	0.1	7.9
174+00		173+00	RLL & LLL	0.7	0.1	10.6
173+00		172+00	RLL & LLL	0.3	0.1	5.3
170+00		169+00	RLL & LLL	0.2	0.0	3.5
169+00		168+00	RLL & LLL	0.5	0.1	7.9

Spalled Areas -- Westbound						
STATION	TO	STATION	LOCATION	AREA (ft^2)	VOLUME (ft^3)	Weight (lbs)
168+00		167+00	RLL & LLL	3.7	0.6	58.1
167+00		166+00	RLL & LLL	2.0	0.3	31.7
166+00		165+00	RLL & LLL	0.3	0.1	5.3
165+00		164+00	RLL & LLL	1.0	0.2	15.8
163+00		162+00	RLL & LLL	2.3	0.4	36.9
161+00		160+00	RLL & LLL	2.7	0.4	42.2
159+00		158+00	RLL & LLL	5.3	0.9	84.4
158+00		157+00	RLL	5.7	0.9	89.7
157+00		156+00	RLL & LLL	3.0	0.5	47.5
156+00		155+00	RLL & LLL	1.8	0.3	29.0
155+00		154+00	LLL	3.2	0.5	50.1
154+00		153+00	RLL & LLL	1.3	0.2	21.1
153+00		152+00	RLL & LLL	4.3	0.7	68.6
152+00		151+00	RLL & LLL	5.6	0.9	88.0
151+00		150+00	LLL	0.7	0.1	10.6
146+00		145+00	RLL & LLL	0.3	0.1	5.3
143+00		142+00	RLL & LLL	1.5	0.3	23.8
138+00		137+00	RLL	4.0	0.7	63.3
137+00		136+00	RLL & LLL	2.0	0.3	31.7
135+00		134+00	RLL & LLL	1.3	0.2	21.1
134+00		133+00	RLL & LLL	7.2	1.2	113.5
133+00		132+00	RLL & LLL	24.3	4.1	385.3
132+00		131+00	RLL & LLL	4.0	0.7	63.3
131+00		130+00	RLL	9.3	1.6	147.8
130+00		129+00	RLL & LLL	0.7	0.1	10.6
129+00		128+00	RLL & LLL	0.0	0.0	0.0
128+00		127+00	RLL & LLL	7.7	1.3	121.4
127+00		126+00	RLL & LLL	14.5	2.4	229.6
126+00		125+00	LLL	4.0	0.7	63.3
125+00		124+00	RLL & LLL	3.0	0.5	47.5
124+00		123+00	RLL & LLL	1.7	0.3	26.4
123+00		122+00	RLL & LLL	3.5	0.6	55.4

Spalled Areas -- Westbound						
STATION	TO	STATION	LOCATION	AREA (ft^2)	VOLUME (ft^3)	Weight (lbs)
122+00		121+00	RLL & LLL	1.5	0.3	23.8
121+00		120+00	RLL & LLL	0.5	0.1	7.9
120+00		119+00	RLL & LLL	2.0	0.3	31.7
119+00		118+00	RLL & LLL	2.3	0.4	36.9
114+00		113+00	RLL & LLL	5.0	0.8	79.2
113+00		112+00	RLL & LLL	1.9	0.3	29.9
112+00		111+00	RLL & LLL	6.7	1.1	105.6
111+00		110+00	RLL	0.5	0.1	7.9
108+00		107+00	RLL & LLL	15.7	2.6	248.1
107+00		106+00	RLL & LLL	3.3	0.6	52.8
106+00		105+00	RLL & LLL	0.4	0.1	7.0
105+00		104+00	RLL & LLL	2.0	0.3	31.7
104+00		103+00	RLL, LLL, & LCL	1.0	0.2	15.8
103+00		102+00	RLL & LLL	0.7	0.1	10.6
102+00		101+00	RLL & LLL	0.3	0.1	5.3
101+00		100+00	RLL, LLL, & LCL	1.0	0.2	15.8
100+00		99+00	LLL	5.0	0.8	79.2
99+00		98+00	RLL & LLL	14.7	2.4	232.2
98+00		97+00	RLL & LLL	0.3	0.1	5.3
97+00		96+00	RLL & LLL	1.2	0.2	18.5
96+00		95+00	RLL	3.3	0.6	52.8
95+00		94+00	RLL & LLL	4.3	0.7	68.6
92+00		91+00	RLL & LLL	1.0	0.2	15.8
91+00		90+00	RLL & LLL	7.2	1.2	113.5
90+00		89+00	RLL & LLL	6.7	1.1	105.6
89+00		88+00	RLL & LLL	7.8	1.3	124.0
88+00		87+00	RLL & LLL	6.0	1.0	95.0
87+00		86+00	RLL & LLL	0.5	0.1	7.9
84+00		83+00	RLL & LLL	3.3	0.6	52.8
83+00		82+00	RLL & LLL	5.5	0.9	87.1
79+00		78+00	RLL & LLL	5.2	0.9	82.7
78+00		77+00	RLL & LLL	13.7	2.3	216.4

Spalled Areas -- Westbound						
STATION	TO	STATION	LOCATION	AREA (ft^2)	VOLUME (ft^3)	Weight (lbs)
77+00		76+00	RLL & LLL	14.7	2.4	232.2
76+00		75+00	RLL & LLL	31.3	5.2	496.1
75+00		74+00	RLL & LLL	19.2	3.2	303.5
74+00		73+00	RLL & LLL	10.0	1.7	158.3
73+00		72+00	RLL & LLL	1.3	0.2	21.1
72+00		71+00	RLL & LLL	1.8	0.3	29.0
71+00		70+00	RLL & LLL	8.5	1.4	134.6
70+00		69+00	RLL & LLL	2.0	0.3	31.7
69+00		68+00	RLL & LLL	1.7	0.3	26.4
68+00		67+00	RLL & LLL	1.3	0.2	21.1
67+00		66+00	RLL	0.7	0.1	10.6
66+00		65+00	RLL & LLL	5.7	0.9	89.7
65+00		64+00	RLL & LLL	24.7	4.1	390.6
64+00		63+00	RLL & LLL	0.5	0.1	7.9
63+00		62+00	RLL & LLL	13.0	2.2	205.8
62+00		61+00	LLL	8.0	1.3	126.7
61+00		60+00	RLL & LLL	3.3	0.6	52.8
60+00		59+00	RLL & LLL	22.3	3.7	353.6
59+00		58+00	RLL & LLL	1.3	0.2	21.1
58+00		57+00	RLL, LLL, & LCL	3.3	0.6	52.8
57+00		56+00	RLL & LLL	13.0	2.2	205.8
55+00		54+00	RLL & LLL	0.5	0.1	7.9
54+00		53+00	RLL & LLL	1.3	0.2	21.1
53+00		52+00	RLL & LLL	8.0	1.3	126.7
52+00		51+00	RLL & LLL	0.0	0.0	0.0
51+00		50+00	RLL & LLL	5.4	0.9	85.3
50+00		49+00	RLL & LLL	4.2	0.7	66.9
49+00		48+00	RLL & LLL	5.3	0.9	84.4
47+00		46+00	RLL & LLL	9.5	1.6	150.4
45+00		44+00	RLL & LLL	0.7	0.1	10.6
44+00		43+00	RLL & LLL	65.6	10.9	1038.0
43+00		42+00	RLL & LLL	2.3	0.4	36.9

Spalled Areas -- Westbound						
STATION	TO	STATION	LOCATION	AREA (ft^2)	VOLUME (ft^3)	Weight (lbs)
42+00		41+00	RLL & LLL	0.4	0.1	7.0
41+00		40+00	RLL & LLL	0.4	0.1	7.0
40+00		39+00	RLL	0.2	0.0	3.5
39+00		38+00	RLL & LLL	4.3	0.7	68.6
38+00		37+00	RLL & LLL	28.0	4.7	443.3
37+00		36+00	RLL & LLL	14.3	2.4	226.9
36+00		35+00	LLL	14.3	2.4	226.9
35+00		34+00	RLL & LLL	13.5	2.3	213.8
34+00		33+00	RLL & LLL	42.8	7.1	678.2
33+00		32+00	RLL & LLL	26.0	4.3	411.7
32+00		31+00	RLL & LLL	17.7	2.9	279.7
30+00		29+00	RLL & LLL	2.7	0.4	42.2
29+00		28+00	RLL & LLL	1.3	0.2	21.1
28+00		27+00	RLL & LLL	4.7	0.8	74.8
27+00		26+00	RLL	2.0	0.3	31.7
26+00		25+00	RLL & LLL	16.3	2.7	258.6
25+00		24+00	LLL	8.9	1.5	140.7
24+00		23+00	LLL	4.8	0.8	76.5
23+00		22+00	RLL & LLL	4.7	0.8	73.9
22+00		21+00	RLL & LLL	0.5	0.1	7.9
21+00		20+00	LLL	13.0	2.2	205.8
20+00		19+00	LL	14.2	2.4	224.3
19+00		18+00	LL	16.5	2.8	261.3
18+00		17+00	LL	13.3	2.2	211.1
17+00		16+00	LL	12.7	2.1	200.6
16+00		15+00	LL	3.3	0.6	52.8
15+00		14+00	LL	0.6	0.1	9.7
14+00		13+00	LL	3.3	0.5	51.9
13+00		12+00	LL	0.5	0.1	7.9
12+00		11+00	LL	0.6	0.1	8.8
11+00		10+00	LL	2.6	0.4	41.3
TOTALS				5365.0	706.3	67100.8

Spalled Areas -- Eastbound						
STATION	TO	STATION	LOCATION	AREA (ft^2)	VOLUME (ft^3)	Weight (lbs)
394+00		395+00	RRL & LRL	1.8	0.3	26.0
395+00		396+00	LRL	1.5	0.2	17.8
398+00		399+00	RRL & LRL	1.3	0.2	15.8
400+00		401+00	RRL	5.8	0.7	69.3
416+00		417+00	RRL	1.8	0.2	21.8
420+00		421+00	RRL & LRL	2.2	0.3	25.7
427+00		428+00	RRL & LRL	13.0	1.6	154.4
428+00		429+00	RRL & LRL	3.7	0.5	43.5
430+00		431+00	LRL	1.0	0.1	11.9
438+00		439+00	LRL	3.0	0.4	35.6
439+00		440+00	RRL	0.5	0.1	5.9
441+00		442+00	LRL	1.0	0.1	11.9
443+00		444+00	RRL	1.0	0.1	11.9
444+00		445+00	RRL	0.5	0.1	5.9
446+00		447+00	LRL	0.5	0.1	5.9
451+00		452+00	RRL & LRL	1.5	0.2	17.8
452+00		453+00	RRL & LRL	0.5	0.1	5.9
456+00		457+00	LRL	6.0	0.8	71.3
458+00		459+00	RRL	0.5	0.1	5.9
460+00		461+00	RRL & LRL	1.5	0.2	17.8
462+00		463+00	RRL	1.0	0.1	11.9
463+00		464+00	RRL	0.3	0.0	4.0
464+00		465+00	LRL	0.7	0.1	7.9
466+00		467+30	RRL & LRL	1.7	0.2	19.8
467+30		468+70	RRL & LRL	32.5	4.1	385.9
474+00		475+00	RRL	0.5	0.1	5.9
479+00		480+00	RRL & LRL	5.5	0.7	65.3
480+00		481+00	RRL & LRL	2.3	0.3	27.7
483+00		484+00	RRL	1.0	0.1	11.9
488+00		489+00	LRL	1.5	0.2	17.8
491+00		492+65	RRL & LRL	29.5	3.7	350.3
495+00		496+40	RRL & LRL	8.3	1.0	99.0

Spalled Areas -- Eastbound						
STATION	TO	STATION	LOCATION	AREA (ft^2)	VOLUME (ft^3)	Weight (lbs)
497+00		498+15	RRL & LRL	6.7	0.8	79.2
498+00		499+00	LLL	1.3	0.2	15.8
499+00		500+00	RRL & LRL	7.3	0.9	87.1
500+00		501+00	RRL & LRL	4.0	0.5	47.5
507+00		508+00	RRL	0.5	0.1	5.9
516+00		517+00	RRL & LRL	2.3	0.3	27.7
518+00		519+00	RRL & LRL	2.0	0.3	23.8
519+00		520+00	LRL	7.2	0.9	85.1
520+00		521+00	LRL	2.3	0.3	27.7
521+00		522+00	RRL & LRL	1.5	0.2	17.8
522+00		523+00	RRL & LRL	5.5	0.7	65.3
523+00		524+00	RRL & LRL	25.2	3.1	298.9
524+00		525+00	RRL & LRL	7.0	0.9	83.1
525+00		526+00	RRL	5.3	0.7	63.3
526+00		527+00	RRL	4.5	0.6	53.4
527+00		528+00	RRL	1.8	0.2	21.8
529+00		530+00	RRL & LRL	4.0	0.5	47.5
530+00		531+00	RRL & LRL	6.0	0.8	71.3
531+00		532+00	RRL & LRL	6.5	0.8	77.2
532+00		533+00	RRL & LRL	6.0	0.8	71.3
544+00		545+00	RRL & LRL	21.0	2.6	249.4
545+00		546+00	RRL & LRL	11.1	1.4	131.3
546+00		547+00	RRL & LRL	16.3	2.0	194.0
547+00		548+00	RRL & LRL	11.7	1.5	138.5
548+00		549+00	RRL	9.1	1.1	107.5
550+00		551+00	RRL	3.7	0.5	44.2
552+00		553+00	RRL & LRL	1.0	0.1	11.9
553+00		554+00	RRL & LRL	9.7	1.2	115.5
555+00		556+00	RRL	1.3	0.2	15.8
556+00		557+00	RRL	2.6	0.3	30.3
557+00		558+00	RRL	0.8	0.1	9.9
562+00		563+00	LRL	1.8	0.2	21.8

Spalled Areas -- Eastbound						
STATION	TO	STATION	LOCATION	AREA (ft^2)	VOLUME (ft^3)	Weight (lbs)
563+00		564+00	RRL	0.5	0.1	5.9
565+00		566+00	RRL & LRL	1.0	0.1	11.9
566+00		567+00	RRL & LRL	2.2	0.3	25.7
567+00		568+00	RRL	4.2	0.5	50.1
569+00		570+00	RRL	2.8	0.4	33.6
570+00		571+00	RRL & LRL	5.3	0.7	63.3
572+00		573+00	RRL	4.7	0.6	56.1
573+00		574+00	RRL & LRL	2.7	0.3	32.3
574+00		575+00	RRL	1.7	0.2	20.1
575+00		576+00	RRL	2.0	0.3	23.8
576+00		577+00	RRL & LRL	0.5	0.1	5.9
577+00		578+00	RRL	27.0	3.4	320.6
578+00		579+00	RRL	1.5	0.2	17.8
580+00		581+00	RRL & LRL	2.0	0.3	23.8
581+70		582+25	RRL & LRL	33.3	4.2	395.2
582+25		583+00	RRL & LRL	3.3	0.4	38.6
583+00		584+00	RRL & LRL	3.0	0.4	35.6
584+00		585+00	RRL & LRL	1.6	0.2	18.5
585+00		586+00	RRL	17.2	2.1	203.9
587+00		588+00	LRL	1.0	0.1	11.9
588+00		589+00	RRL	1.7	0.2	19.8
589+00		590+00	LRL	28.0	3.5	332.5
TOTALS				477.7	59.8	5677.2

619-D2001 Standard Roadside Construction Signs (10 Sq. Ft. or More) 107631/301000					
STATION	**LOCATION**	**DESCRIPTION**	**QUANTITY**	**UNIT**	**REMARKS**
0+00	RL	W20-1 (Road Work Ahead)	16	SF	1000' WEST OF BOP
5+00	RL	G20-1 (Road Work Next 18 Miles)	10	SF	500' West Of BOP
10+00	RL	R16-3 (Speeding Fines Doubled)	12	SF	
10+00	LL	R16-3 (Speeding Fines Doubled)	12	SF	
18+00	LLL	W20-1 (Road Work Ahead)	16	SF	RAYMOND SCHOOL
24+00	RRL	W20-1 (Road Work Ahead)	16	SF	Dry Grove St
32+40	RRL	W20-1 (Road Work Ahead)	16	SF	Dry Grove Rd
33+30	LLL	W20-1 (Road Work Ahead)	16	SF	Dry Grove Rd
58+00	RRL	W20-1 (Road Work Ahead)	16	SF	FERGUSON DR
62+80	RRL & LRL	R16-3 (Speeding Fines Doubled)	24	SF	
62+80	RLL & LLL	R16-3 (Speeding Fines Doubled)	24	SF	
79+00	RRL	W20-1 (Road Work Ahead)	16	SF	SEVEN SPRING RD
79+00	LLL	W20-1 (Road Work Ahead)	16	SF	PALESTINE ST
94+00	LLL	W20-1 (Road Work Ahead)	16	SF	PAUL WILLIAMS DR
101+00	RRL	W20-1 (Road Work Ahead)	16	SF	RAYMOND LAKE RD
101+30	LLL	W20-1 (Road Work Ahead)	16	SF	HINDS BLVD
109+40	LLL	W20-1 (Road Work Ahead)	16	SF	CENTRAL DR
115+60	RRL & LRL	R16-3 (Speeding Fines Doubled)	24	SF	
115+60	RLL & LLL	R16-3 (Speeding Fines Doubled)	24	SF	
127+00	LLL	W20-1 (Road Work Ahead)	16	SF	EAST MAIN ST
127+50	RRL	W20-1 (Road Work Ahead)	16	SF	COUNTY FARM RD
168+40	RRL & LRL	R16-3 (Speeding Fines Doubled)	24	SF	
168+40	RLL & LLL	R16-3 (Speeding Fines Doubled)	24	SF	
185+50	LLL	W20-1 (Road Work Ahead)	16	SF	FOREST VIEW DR
193+00	LLL	W20-1 (Road Work Ahead)	16	SF	WALKER LN
203+00	LLL	W20-1 (Road Work Ahead)	16	SF	MENDY LN
221+20	RRL & LRL	R16-3 (Speeding Fines Doubled)	24	SF	

STATION	LOCATION	DESCRIPTION	QUANTITY	UNIT	REMARKS
221+20	RLL & LLL	R16-3 (Speeding Fines Doubled)	24	SF	
222+50	LLL	W20-1 (Road Work Ahead)	16	SF	MIDWAY RD
222+50	RRL	W20-1 (Road Work Ahead)	16	SF	MIDWAY RD
229+00	RRL	W20-1 (Road Work Ahead)	16	SF	JACKSON RAYMOND RD
274+00	RRL & LRL	R16-3 (Speeding Fines Doubled)	24	SF	
274+00	RLL & LLL	R16-3 (Speeding Fines Doubled)	24	SF	
287+00	LLL	W20-1 (Road Work Ahead)	16	SF	LEE LN
297+50	LLL	W20-1 (Road Work Ahead)	16	SF	WELLS RD
297+50	RRL	W20-1 (Road Work Ahead)	16	SF	WELLS RD
326+80	RRL & LRL	R16-3 (Speeding Fines Doubled)	24	SF	
326+80	RLL & LLL	R16-3 (Speeding Fines Doubled)	24	SF	
339+00	LLL	W20-1 (Road Work Ahead)	16	SF	SPRINGRIDGE RD
339+30	RRL	W20-1 (Road Work Ahead)	16	SF	SPRINGRIDGE RD
379+60	RRL & LRL	R16-3 (Speeding Fines Doubled)	24	SF	
379+60	RLL & LLL	R16-3 (Speeding Fines Doubled)	24	SF	
386+00	RRL	W20-1 (Road Work Ahead)	16	SF	THOUSAND OAKS DR
408+35	RRL	W20-1 (Road Work Ahead)	16	SF	MIKELLE RD
432+00	LLL	W20-1 (Road Work Ahead)	16	SF	SIWELL RD
432+00	RRL	W20-1 (Road Work Ahead)	16	SF	SIWELL RD
432+40	RRL & LRL	R16-3 (Speeding Fines Doubled)	24	SF	
432+40	RLL & LLL	R16-3 (Speeding Fines Doubled)	24	SF	
459+75	RRL	W20-1 (Road Work Ahead)	16	SF	EDEN DOWNS RD
475+50	RRL	W20-1 (Road Work Ahead)	16	SF	GREENMONT DR
478+00	RRL	W20-1 (Road Work Ahead)	16	SF	GREENMONT DR
485+20	RRL & LRL	R16-3 (Speeding Fines Doubled)	24	SF	
485+20	RLL & LLL	R16-3 (Speeding Fines Doubled)	24	SF	
494+00	RRL	W20-1 (Road Work Ahead)	16	SF	TIMBER LAWN RD
511+30	LLL	W20-1 (Road Work Ahead)	16	SF	MADDOX RD
512+50	RRL	W20-1 (Road Work Ahead)	16	SF	MADDOX RD

STATION	LOCATION	DESCRIPTION	QUANTITY	UNIT	REMARKS
538+00	RRL & LRL	R16-3 (Speeding Fines Doubled)	24	SF	
538+00	RLL & LLL	R16-3 (Speeding Fines Doubled)	24	SF	
539+80	RRL	W20-1 (Road Work Ahead)	16	SF	MCDOWELL RD
557+00	LLL	W20-1 (Road Work Ahead)	16	SF	TV RD
559+60	RRL	W20-1 (Road Work Ahead)	16	SF	TV RD
561+00	LLL	W20-1 (Road Work Ahead)	16	SF	18TH PLACE
567+00	LLL	W20-1 (Road Work Ahead)	16	SF	WOODLAND WAY
582+00	RRL	W20-1 (Road Work Ahead)	16	SF	CHADWICK DR
585+20	LLL	W20-1 (Road Work Ahead)	16	SF	FULTON PLACE
590+80	RRL & LRL	R16-3 (Speeding Fines Doubled)	24	SF	
590+80	RLL & LLL	R16-3 (Speeding Fines Doubled)	24	SF	
592+00	LLL	W20-1 (Road Work Ahead)	16	SF	GREEN WAY DR
594+50	RRL	W20-1 (Road Work Ahead)	16	SF	GREEN WAY DR
598+00	LLL	W20-1 (Road Work Ahead)	16	SF	I-20 RAMP
610+50	RRL	W20-1 (Road Work Ahead)	16	SF	I-20 RAMP
625+50	RRL	W20-1 (Road Work Ahead)	16	SF	LANGLEY ST
625+50	LLL	W20-1 (Road Work Ahead)	16	SF	LANGLEY ST
626+30	RLL & LLL	R16-3 (Speeding Fines Doubled)	24	SF	
633+36	RLL	G20-1 (Road Work Next 18 Miles)	10	SF	500' East Of EOP
633+36	LLL	G20-1 (Road Work Next 18 Miles)	10	SF	500' East Of EOP
638+36	RLL	W20-1 (Road Work Ahead)	16	SF	1000' EAST OF EOP
638+36	LLL	W20-1 (Road Work Ahead)	16	SF	1000' EAST OF EOP
TOTAL			**1390**	**SF**	

619-D1001 Standard Roadside Construction Signs (Less than 10 Sq. Ft.) 107631/301000					
Station	**Location**	**Description**	**Quantity**	**Unit**	**Remarks**
5+00	LT	G20-2	8	SF	500' WEST OF BOP
633+36	RRL	G20-2	8	SF	500' EAST OF EOP
633+36	LRL	G20-2	8	SF	500' EAST OF EOP
TOTAL			**24**	SF	

619-G4005 Barricades, Type III, Double Faced 107631/301000					
Location		**Station**	**Quantity**	**Unit**	**Description**
LLL		500' East of EOP	6	LF	Mounted on G20-1
RLL		500' East of EOP	6	LF	Mounted on G20-1
RL		500' West of BOP	6	LF	Mounted on G20-1
LL		BOP	6	LF	Mounted on G20-2
LRL		EOP	6	LF	Mounted on G20-2
RRL		EOP	6	LF	Mounted on G20-2
TOTAL			**36**	**LF**	

TRAFFIC SIGNAL RADAR DETECTION CHART

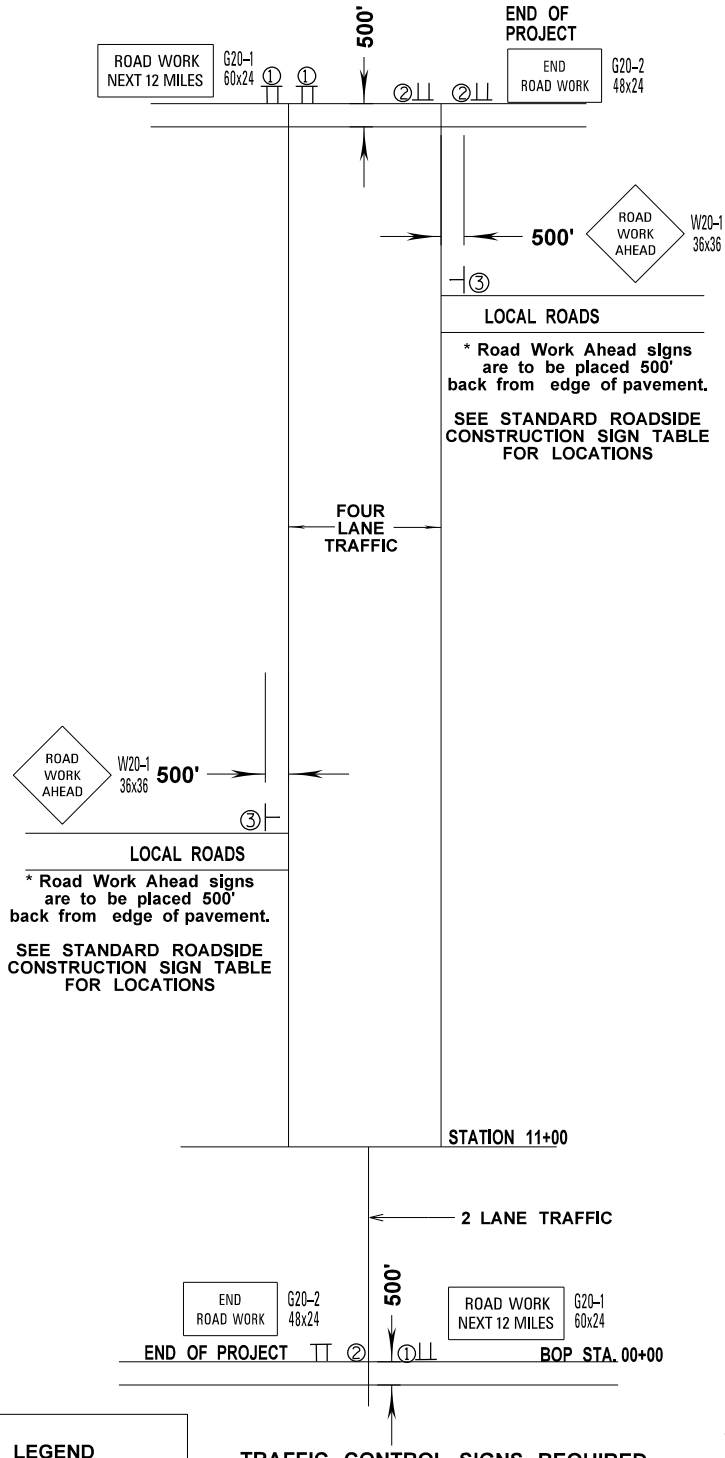
Intersection Name	Detection Zone Location	Street/Approach Name	Phase #	Detection Zone Size	STOPBAR Radar Units Required	Radar Cable (ft)	Existing Controller Type	Existing Pole Configuration	Notes
Hwy 18 @ Langley St	NB Outside Thru Lane	Hwy 18	2	6'X50'	1	50	M10 Controller (New Controller Required)	Steel Strain Spanwire Signal	*Note: New Controller Required*
	NB Inside Thru Lane	Hwy 18	2	6'X50'					
	WB Inside Left Turn Lane	Langley St	8	6'X50'	1	50			
	WB Outside Left Turn Lane	Langley St	8	6'X50'					
	SB Inside Thru Lane	Hwy 18	6	6'X50'	1	350			
	SB Outside Thru Lane	Hwy 18	6	6'X50'					
	EB Left Turn Lane	Langley St	4	6'X50'	1	350			
Hwy 18 @ Greenway Dr	NB Inside Thru Lane	Hwy 18	2	6'X50'	-	-	M50 EPAC Controller	Steel Strain Spanwire Signal	*Note: Reuse Existing STOPBAR Radar Unit for Phase 2 and 5 detection zones. Also reuse existing Radar Unit for Phase 6 advance detection.*
	NB Outside Thru Lane	Hwy 18	2	6'X50'					
	NB Left Turn Lane	Hwy 18	5	6'X50'					
	SB Left Turn Lane	Hwy 18	1	6'X50'	1	200			
	SB Inside Thru Lane	Hwy 18	6	6'X50'					
	SB Outside Thru Lane	Hwy 18	6	6'X50'					
	EB Inside Left Turn Lane	Greenway Dr	3	6'X50'	1	60			
	EB Outside Left Turn Lane	Greenway Dr	3	6'X50'					
	EB Thru Lane	Greenway Dr	3	6'X50'					
	WB Left Turn Lane	Greenway Dr	4	6'X50'	1	220			
	WB Thru Lane	Greenway Dr	4	6'X50'					
Hwy 18 @ Chadwick dr	NB Inside Thru Lane	Hwy 18	2	6'X50'	1	240	M50 EPAC Controller	Steel Strain Spanwire Signal	*Note:*
	NB Outside Thru Lane	Hwy 18	2	6'X50'					
	SB Inside Thru Lane	Hwy 18	6	6'X50'	1	240			
	SB Outside Thru Lane	Hwy 18	6	6'X50'					
	SB Inside Left Turn Lane	Hwy 18	1	6'X50'					
	SB Outside Left Turn Lane	Hwy 18	1	6'X50'					
	WB Inside Left Turn Lane	Chadwick Dr	3	6'X50'	1	60			
	WB Outside Left Turn Lane	Chadwick Dr	3	6'X50'					

Intersection Name	Detection Zone Location	Street/Approach Name	Phase #	Detection Zone Size	STOPBAR Radar Units Required	Radar Cable (ft)	Existing Controller Type	Existing Pole Configuration	Notes
MS 18 @ TV Road	NB Left Turn Lane	Hwy 18	5	6'X50'	1	60	M50 EPAC Controller	Steel Strain Spanwire Signal	*Note:*
	NB Inside Thru Lane	Hwy 18	2	6'X50'					
	NB Outside Thru Lane	Hwy 18	2	6'X50'					
	SB Left Turn Lane	Hwy 18	1	6'X50'	1	210			
	SB Inside Thru Lane	Hwy 18	6	6'X50'					
	SB Outside Thru Lane	Hwy 18	6	6'X50'					
	EB Left Turn Lane	TV Road	8	6'X50'	1	210			
	EB Thru Lane	TV Road	8	6'X50'					
	WB Left Turn Lane	TV Road	4	6'X50'	1	280			
	WB Thru Lane	TV Road	4	6'X50'					
MS 18 @ McDowell Rd	SB Inside Thru Lane	Hwy 18	6	6'X50'	1	280	M50 EPAC Controller	Steel Strain Spanwire Signal	*Note:*
	SB Outside Thru Lane	Hwy 18	6	6'X50'					
	SB Inside Left Turn Lane	Hwy 18	1	6'X50'					
	SB Outside Left Turn Lane	Hwy 18	1	6'X50'					
	NB Left Turn Lane	Hwy 18	5	6'X50'	1	280			
	NB Inside Thru Lane	Hwy 18	2	6'X50'					
	NB Outside Thru Lane	Hwy 18	2	6'X50'					
	EB Left Turn Lane	McDowell Rd Ext	3	6'X50'	1	280			
	EB Thru Lane	McDowell Rd Ext	3	6'X50'					
	WB Left Turn Lane	McDowell Rd Ext	4	6'X50'	1	60			
	WB Thru/Left Shared Lane	McDowell Rd Ext	4	6'X50'					
MS 18 @ Maddox Road	NB Left Turn Lane	Hwy 18	5	6'X50'	1	280	M50 EPAC Controller	Steel Strain Spanwire Signal	*Note:*
	NB Inside Thru Lane	Hwy 18	2	6'X50'					
	NB Outside Thru Lane	Hwy 18	2	6'X50'					
	SB Left Turn Lane	Hwy 18	1	6'X50'	1	70			
	SB Inside Thru Lane	Hwy 18	6	6'X50'					
	SB Outside Thru Lane	Hwy 18	6	6'X50'					
	EB Left Turn Lane	Maddox Road	4	6'X50'	1	70			
	EB Thru Lane	Maddox Road	4	6'X50'					
	WB Left Turn Lane	Maddox Road	8	6'X50'	1	280			
	WB Thru Lane	Maddox Road	8	6'X50'					

Intersection Name	Detection Zone Location	Street/Approach Name	Phase #	Detection Zone Size	STOPBAR Radar Units Required	Radar Cable (ft)	Existing Controller Type	Existing Pole Configuration	Notes
MS 18 @ Siwell Road	NB Left Turn Lane	Hwy 18	5	6'X50'	1	200	M34 Controller (New Controller Required)	Steel Strain Spanwire Signal	*Note: New Controller Required*
	NB Inside Thru Lane	Hwy 18	2	6'X50'					
	NB Outside Thru Lane	Hwy 18	2	6'X50'					
	SB Left Turn Lane	Hwy 18	1	6'X50'	1	280			
	SB Inside Thru Lane	Hwy 18	6	6'X50'					
	SB Outside Thru Lane	Hwy 18	6	6'X50'					
	EB Left Turn Lane	Siwell Road	7	6'X50'	1	280			
	EB Thru Lane	Siwell Road	4	6'X50'					
	WB Left Turn Lane	Siwell Road	3	6'X50'	1	70			
	WB Thru Lane	Siwell Road	8	6'X50'					
MS 18 @ Springridge Road	NB Left Turn Lane	Hwy 18	5	6'X50'	1	260	M50 EPAC Controller	Steel Strain Spanwire Signal	*Note:*
	NB Inside Thru Lane	Hwy 18	2	6'X50'					
	NB Outside Thru Lane	Hwy 18	2	6'X50'					
	SB Left Turn Lane	Hwy 18	1	6'X50'	1	180			
	SB Inside Thru Lane	Hwy 18	6	6'X50'					
	SB Outside Thru Lane	Hwy 18	6	6'X50'					
	EB Left Turn Lane	Springridge Road	4	6'X50'	1	90			
	EB Thru Lane	Springridge Road	4	6'X50'					
	WB Left Turn Lane	Springridge Road	3	6'X50'	1	260			
	WB Thru Lane	Springridge Road	3	6'X50'					
MS 18 @ Midway Road	NB Left Turn Lane	Hwy 18	5	6'X50'	1	260	M50 EPAC Controller	Mast Arm Signal	Note:
	NB Inside Thru Lane	Hwy 18	2	6'X50'					
	NB Outside Thru Lane	Hwy 18	2	6'X50'					
	SB Left Turn Lane	Hwy 18	1	6'X50'	1	150			
	SB Inside Thru Lane	Hwy 18	6	6'X50'					
	SB Outside Thru Lane	Hwy 18	6	6'X50'					
	EB Thru Lane	Midway Road	4	6'X50'	1	150			
	WB Thru Lane	Midway Road	3	6'X50'	1	280			

Intersection Name	Detection Zone Location	Street/Approach Name	Phase #	Detection Zone Size	STOPBAR Radar Units Required	Radar Cable (ft)	Existing Controller Type	Existing Pole Configuration	Notes
MS 18 @ E Main St	NB Left Turn Lane	Hwy 18	5	6'X50'	1	200	M50 EPAC Controller	Mast Arm Signal	*Note: Contractor shall remove all existing in-ground magnetometer sensors at this intersection, PRIOR to milling.*
	NB Inside Thru Lane	Hwy 18	2	6'X50'					
	NB Outside Thru Lane	Hwy 18	2	6'X50'					
	SB Left Turn Lane	Hwy 18	1	6'X50'	1	100			
	SB Inside Thru Lane	Hwy 18	6	6'X50'					
	SB Outside Thru Lane	Hwy 18	6	6'X50'					
	EB Thru Lane	E Main St	4	6'X50'	1	100			
	WB Thru Lane	County Farm Road	3	6'X50'	1	260			
MS 18 @ Hinds Blvd	NB Left Turn Lane	Hwy 18	5	6'X50'	1	390	M50 EPAC Controller	Mast Arm Signal	*Note: Contractor shall remove all existing in-ground magnetometer sensors at this intersection, PRIOR to milling.*
	NB Inside Thru Lane	Hwy 18	2	6'X50'					
	NB Outside Thru Lane	Hwy 18	2	6'X50'					
	SB Left Turn Lane	Hwy 18	1	6'X50'	1	130			
	SB Inside Thru Lane	Hwy 18	6	6'X50'					
	SB Outside Thru Lane	Hwy 18	6	6'X50'					
	EB Left Turn Lane	Hinds Blvd	7	6'X50'	1	130			
	EB Thru Lane	Hinds Blvd	4	6'X50'					
	WB Left Turn Lane	Raymond Lake Road	3	6'X50'	1	280			
	WB Thru Lane	Raymond Lake Road	8	6'X50'					
MS 18 @ Seven Springs Road	NB Left Turn Lane	Hwy 18	5	6'X50'	1	90	M50 EPAC Controller	Mast Arm Signal	*Note: Contractor shall remove all existing in-ground magnetometer sensors at this intersection, PRIOR to milling.*
	NB Inside Thru Lane	Hwy 18	2	6'X50'					
	NB Outside Thru Lane	Hwy 18	2	6'X50'					
	SB Left Turn Lane	Hwy 18	1	6'X50'	1	300			
	SB Inside Thru Lane	Hwy 18	6	6'X50'					
	SB Outside Thru Lane	Hwy 18	6	6'X50'					
	EB Thru Lane	Palestine St	4	6'X50'	1	240			
	WB Thru Lane	Seven Springs Road	3	6'X50'	1	90			
				Total	46	8950			

CONSTRUCTION SIGNING DETAIL



SIGN LEGEND	
NUMBER	DESCRIPTION
①	ROAD WORK NEXT 12 MILE G20-1 60x24
②	END ROAD WORK G20-2 48x24
③	ROAD WORK AHEAD W20-1 48x48

TRAFFIC CONTROL SIGNS REQUIRED

3 - G20-1 "ROAD WORK NEXT MILE"

3 - G20-2 "END ROAD WORK"

50 - W20-1 "ROAD WORK AHEAD"

2 - TYPE III DOUBLE FACED BARRICADES

0 - R4-1 "DO NOT PASS"

0 - R4-2 "PASS WITH CARE

0 - W14-3 "NO PASSING ZONE"

NOTES:

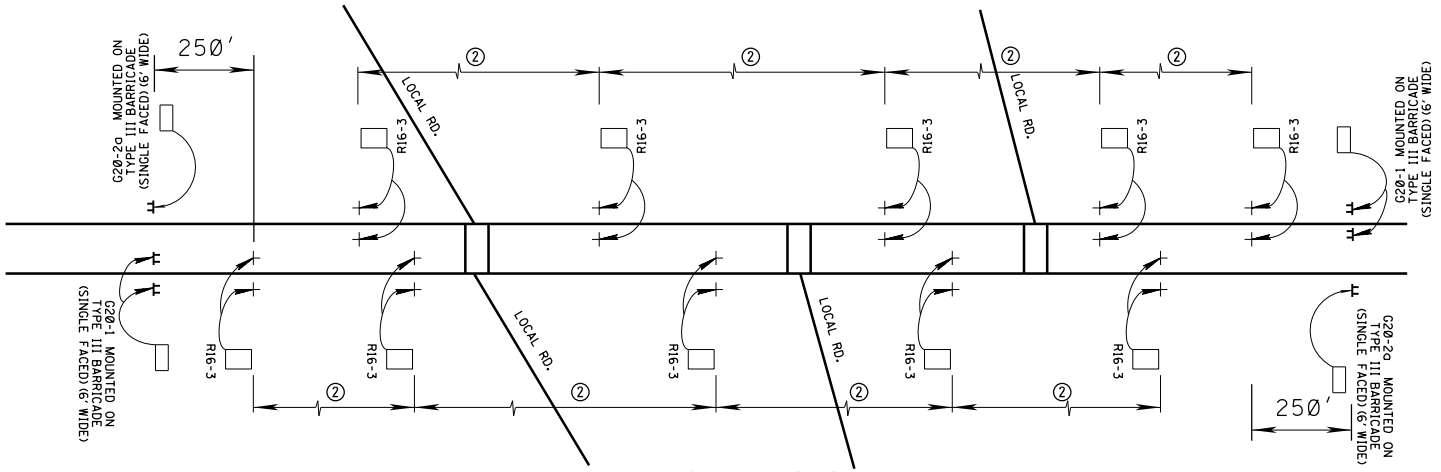
ONE (1) W20-1 "ROAD WORK AHEAD SIGN IS REQUIRED AT EACH LOCAL ROAD, STREET, OR HIGHWAY ENTERING THE PROJECT.

G20-1 AND G20-2 SIGNS MOUNTED ON TYPE III DOUBLE FACED BARRICADE.

FIELD CONDITIONS MAY REQUIRE SOME SIGNS ON THIS DETAIL TO BE ADJUSTED.

THE ABOVE SHOWN ITEMS WILL BE PAID UNDER THE APPROPRIATE PAY ITEMS.

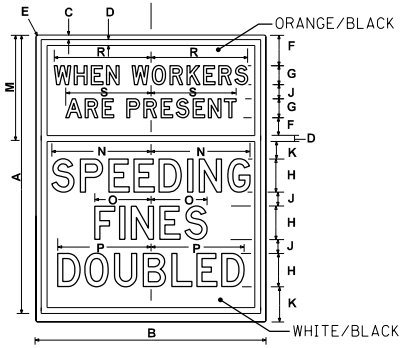
LOCATION OF R16-3 SIGNS (SPEEDING FINES DOUBLED)



DIVIDED HIGHWAY SHOWN
(2 LANE - 2 WAY ROADWAY SIMILAR)
(PROJECT MORE THAN 1 MILE LENGTH)

NOTES

1. R16-3 SIGN SHALL BE PLACED AS SHOWN OR AS DIRECTED BY THE ENGINEER.
2. R16-3 SIGN SHALL BE SPACED AT A MAXIMUM OF 2 MILES THROUGHOUT LENGTH OF PROJECT.
3. THIS SHEET WILL ONLY APPLY TO SPEED REDUCTION SECTIONS.



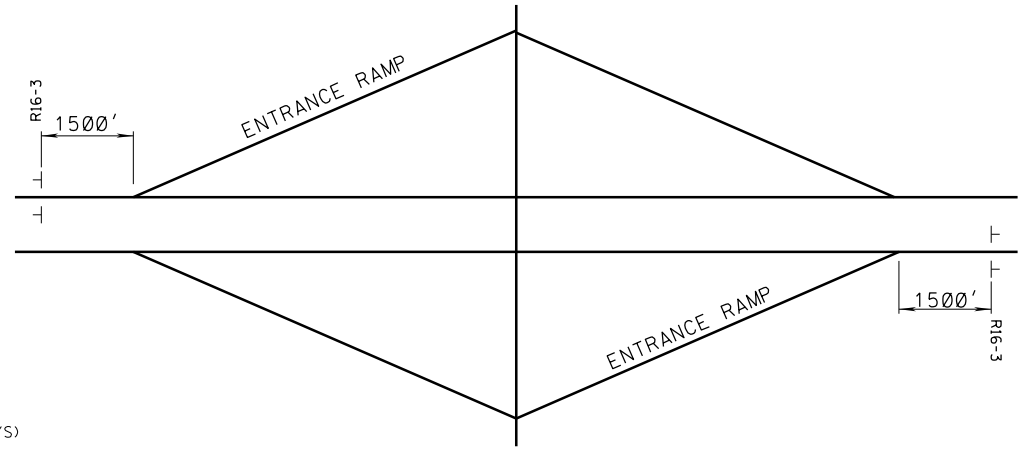
SIGN	DIMENSIONS (INCHES)							
	A	B	C	D	E	F	G	H
STD.	60	48	3/4	1 1/4	3	3 3/4	4 Dm	7 D
	J	K	M	N	O	P	R	S
STD.	3	6 5/8	22 5/8	21	11 7/8	19 5/8	20 5/8	18

48″ × 60″ (INTERSTATE USE)

SIGN	DIMENSIONS (INCHES)							
	A	B	C	D	E	F	G	H
STD.	48	36	3/4	1 1/4	3	2 3/4	3 Dm	6 D
	J	K	M	N	O	P	R	S
STD.	3	4 1/8	14 3/4	14	7 7/8	13 1/8	13 5/8	12

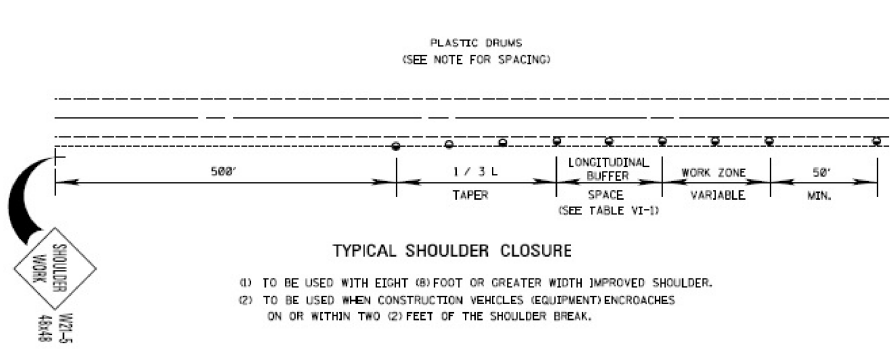
36″ × 48″ (ALL OTHER HIGHWAYS)

R16-3



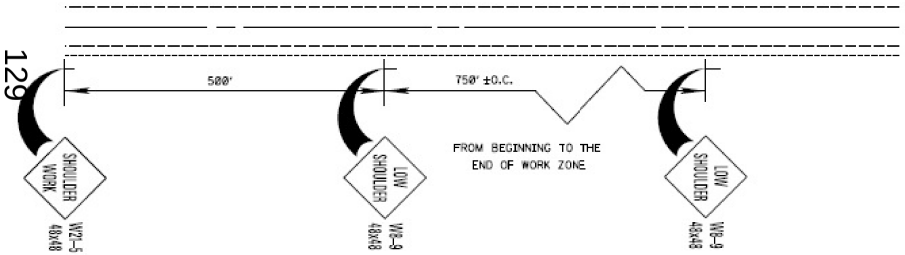
INTERCHANGE DETAIL

TRAFFIC CONTROL DETAILS
DRUM PLACEMENT AND SHULDER CLOSURE

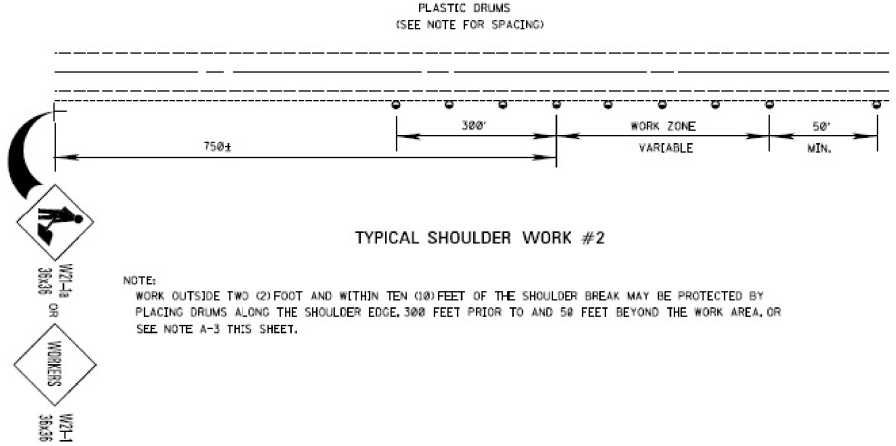


TYPICAL SHOULDER CLOSURE

(1) TO BE USED WITH EIGHT (8) FOOT OR GREATER WIDTH IMPROVED SHOULDER.
(2) TO BE USED WHEN CONSTRUCTION VEHICLES (EQUIPMENT) ENCROACHES ON OR WITHIN TWO (2) FEET OF THE SHOULDER BREAK.

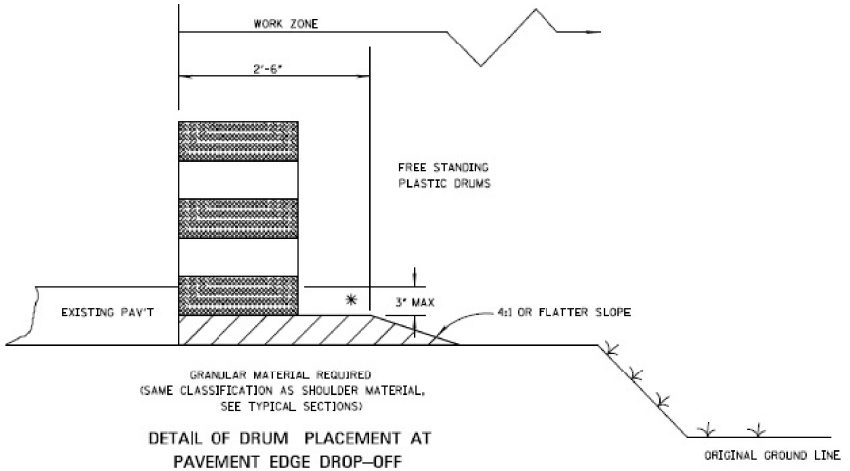


TYPICAL SHOULDER WORK #1
(SEE NOTE A–1 THIS SHEET)



TYPICAL SHOULDER WORK #2

NOTE:
WORK OUTSIDE TWO (2) FOOT AND WITHIN TEN (10) FEET OF THE SHOULDER BREAK MAY BE PROTECTED BY PLACING DRUMS ALONG THE SHOULDER EDGE, 300 FEET PRIOR TO AND 50 FEET BEYOND THE WORK AREA, OR SEE NOTE A-3 THIS SHEET.



DETAIL OF DRUM PLACEMENT AT
PAVEMENT EDGE DROP–OFF

NOTES:

✳ A. PAVEMENT EDGE DROP-OFF

1. IF LESS THAN TWO AND ONE QUARTER (2.25) INCHES-NO PROTECTION REQUIRED. PLACE A SHOULDER WORK SIGN (W21-5) 500 FEET IN ADVANCE OF WORK ZONE SHOULDER AND A LOW SHOULDER SIGN (W8-9) AT THE BEGINNING AND THROUGHOUT THE WORK ZONE @ (750'+O.C.).

2. TWO AND ONE QUARTER TO THREE INCHES-PLACE DRUMS, VERTICAL PANELS OR BARRICADES EVERY 100 FEET ON TANGENT SECTIONS FOR SPEEDS OF 50 MILES PER HOUR OR GREATER. CONES MAY BE USED IN PLACE OF DRUMS, PANELS, AND BARRICADES DURING DAYLIGHT HOURS. FOR TANGENT SECTIONS WITH SPEEDS LESS THAN 50 MILES PER HOUR AND FOR CURVES, DEVICES SHOULD BE PLACED EVERY 50 FEET. SPACING FOR TAPERS SHOULD BE IN ACCORDANCE WITH THE M.U.T.C.D. (1 / 3 L, WHERE L IS THE TAPER LENGTH IN FEET.)

3. GREATER THAN THREE (3) INCHES-POSITIVE SEPARATION OR WEDGE WITH 4:1 OR FLATTER SLOPE NEEDED. IF THERE IS EIGHT (8) FEET OR MORE DISTANCE BETWEEN THE EDGE OF TRAVEL LANE AND DROP-OFF, THEN DRUMS, PANELS OR BARRICADES MAY BE USED.

4. FOR TEMPORARY CONDITIONS, DROP-OFFS GREATER THAN THREE (3) INCHES MAY BE PROTECTED WITH DRUMS, VERTICAL PANELS OR BARRICADES FOR SHORT DISTANCES DURING DAYLIGHT HOURS WHILE WORK IS BEING DONE IN THE DROP-OFF AREA.

5. LESSER TREATMENTS THAN THOSE DESCRIBED ABOVE MAY BE CONSIDERED FOR LOW-VOLUME LOCAL STREETS.

B. DRUM SPACING

1. TANGENTS = 2 X S
2. TAPERS = L / 3
WHERE L = S X W
L = TAPER LENGTH IN FEET
S = SPEED IN MPH (POSTED OR 85 PERCENTILE)
W = WIDTH OF OFFSET IN FEET

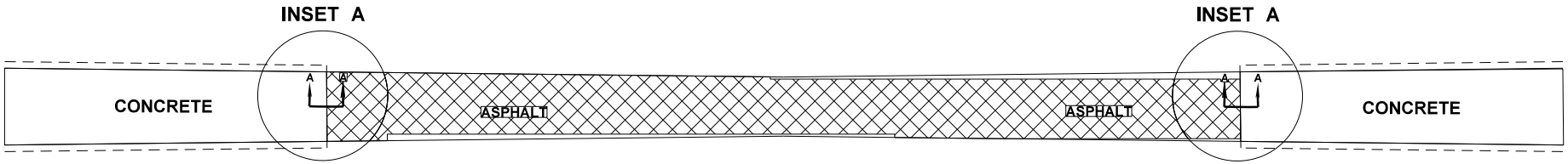
C. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER MAINTENANCE OF TRAFFIC.

TABLE VI-1. GUIDELINES FOR LENGTH OF LONGITUDINAL BUFFER SPACE

✳✳ SPEED (MPH)	LENGTH (FEET)
20	35
25	55
30	85
35	120
40	170
45	220
50	280
55	335
60	415
65	485

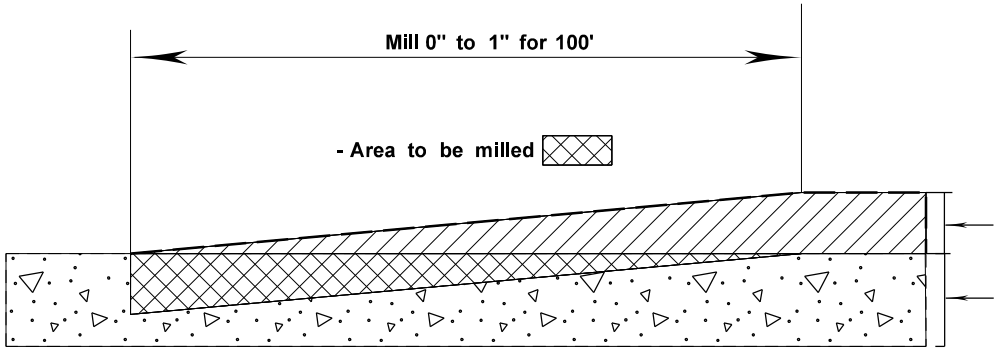
✳✳ POSTED SPEED, OFF-PEAK 85 PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH.

STATE	PROJECT NO.
MISS.	STP-0039-02(053)



- PAVING LIMITS

Note:
Asphalt leveling patches less than 200' long will be milled at 0" to 1" for 50'



(NOT TO SCALE)

SECTION A-A
MILLING REQUIREMENTS

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

TRANSITION MILLING CRCP WITH ASPHALT OVERLAY

PROJ. NO.: STP-0039-02(053)/107631(301000)

COUNTY: HINDS

FILENAME: Detail Paving limits.dgn

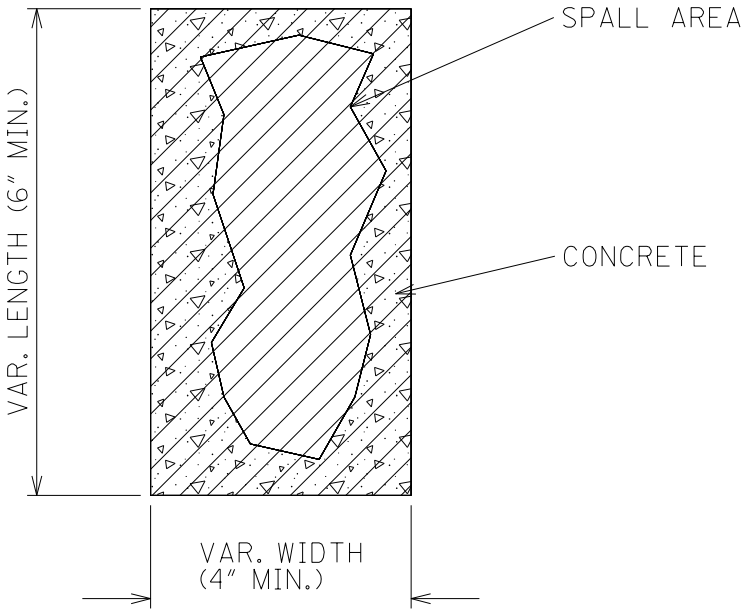
DESIGN TEAM _____ CHECKED _____ DATE 2018-06-27

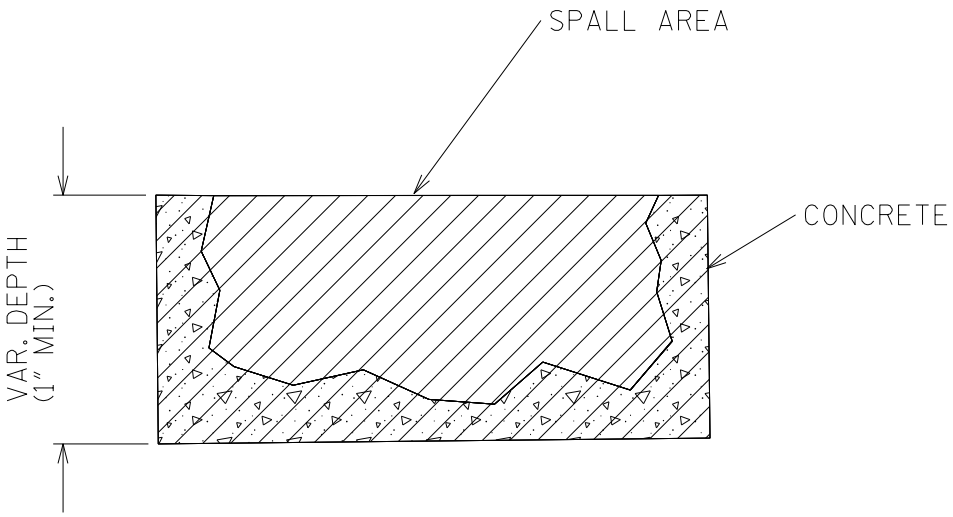
PRELIMINARY
NOT FOR CONSTRUCTION

WORKING NUMBER

SHEET NUMBER
PG

HINDS COUNTY
STP-0039-02(053)
107631/301000
HIGHWAY 18
SPALL AREA REPAIR



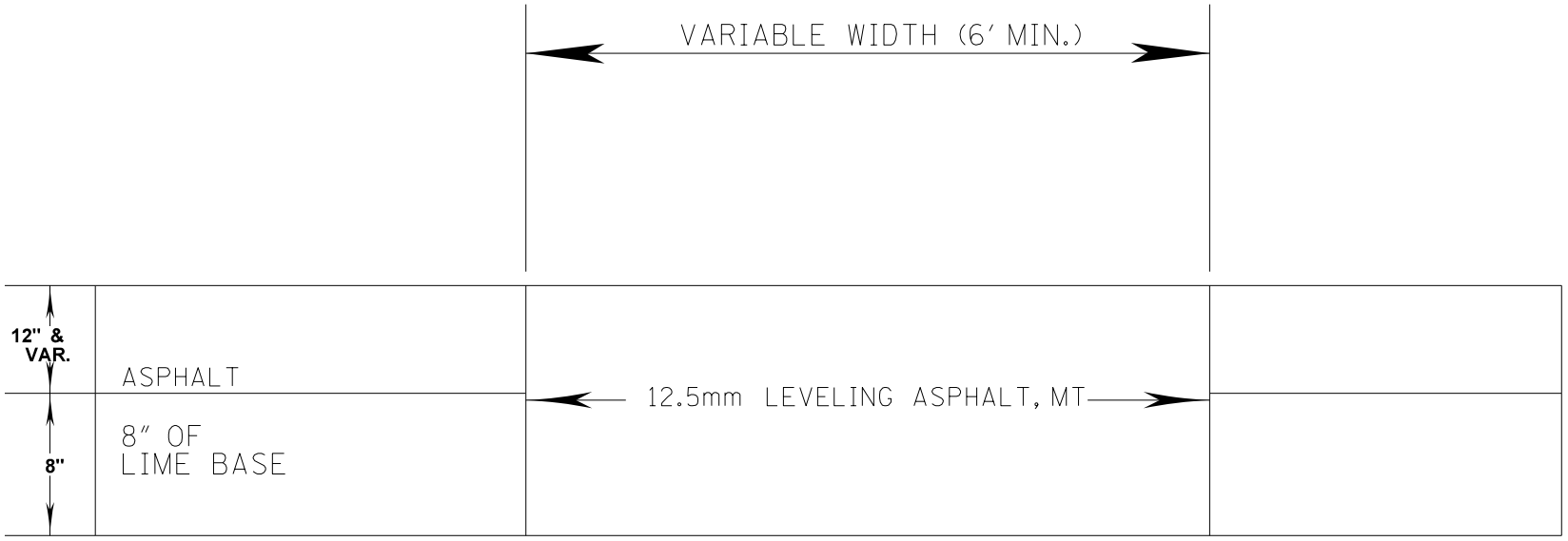


*Spall area to be repaired by using material, means, methods as explained in special provision 907-515-1 Fiber Reinforced Polymer Patching Material, and manufacturer's recommendations.

*Paid by using pay item 907-515-A001 Fiber Reinforced Polymer Patching Material.

HINDS COUNTY
STP-0039-02(053)
107631/301000
HIGHWAY 18

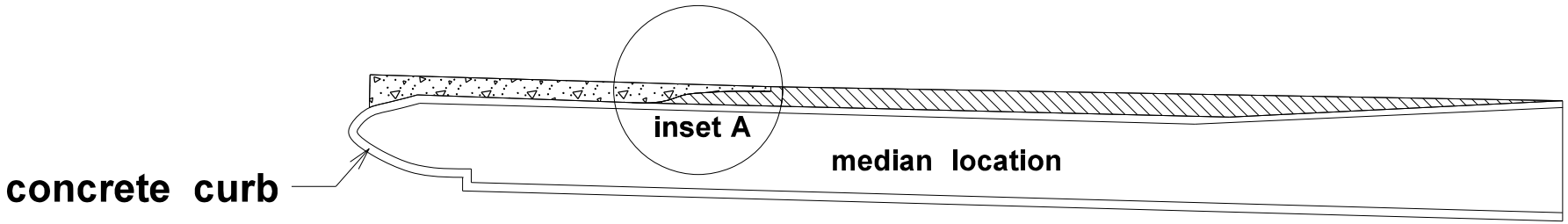
PAVEMENT REPAIR DETAIL



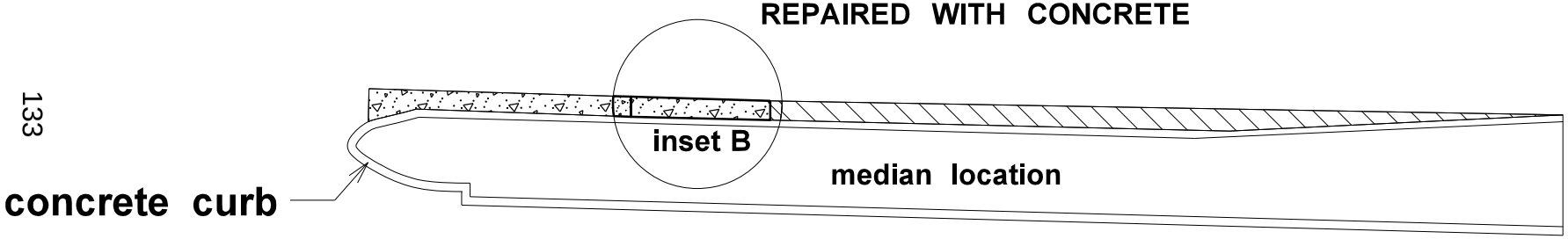
*Remove any damaged lime treated base and/or subgrade and replace with 12.5mm asphalt as directed by the engineer.

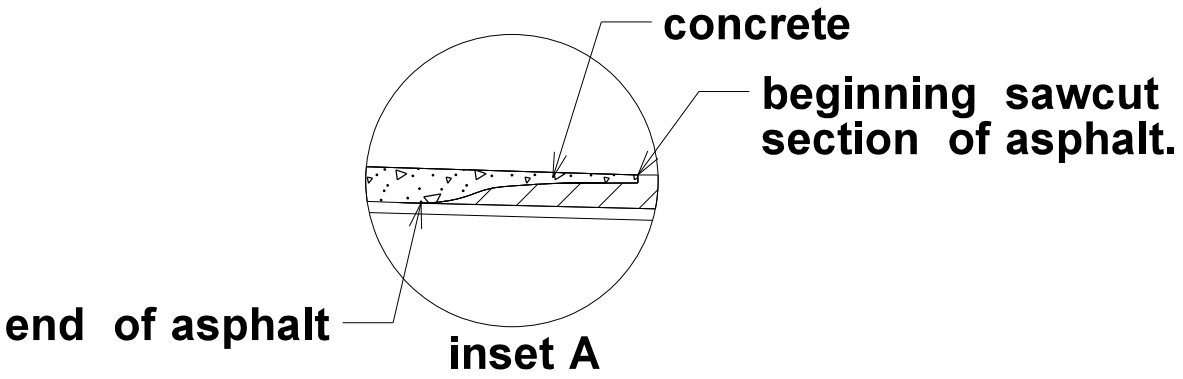
DETAIL TURN LANE REPAIR

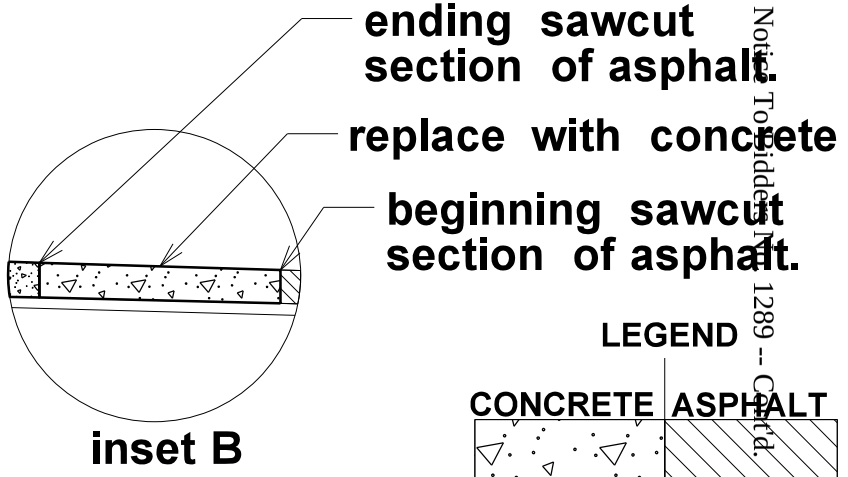
EXISTING TURN LANE SECTION



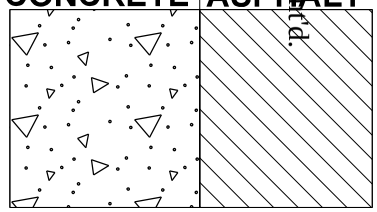
PROPOSED TURN LANE SECTION
REPAIRED WITH CONCRETE







LEGEND



*See Scope of Work for explanation of work in these locations.

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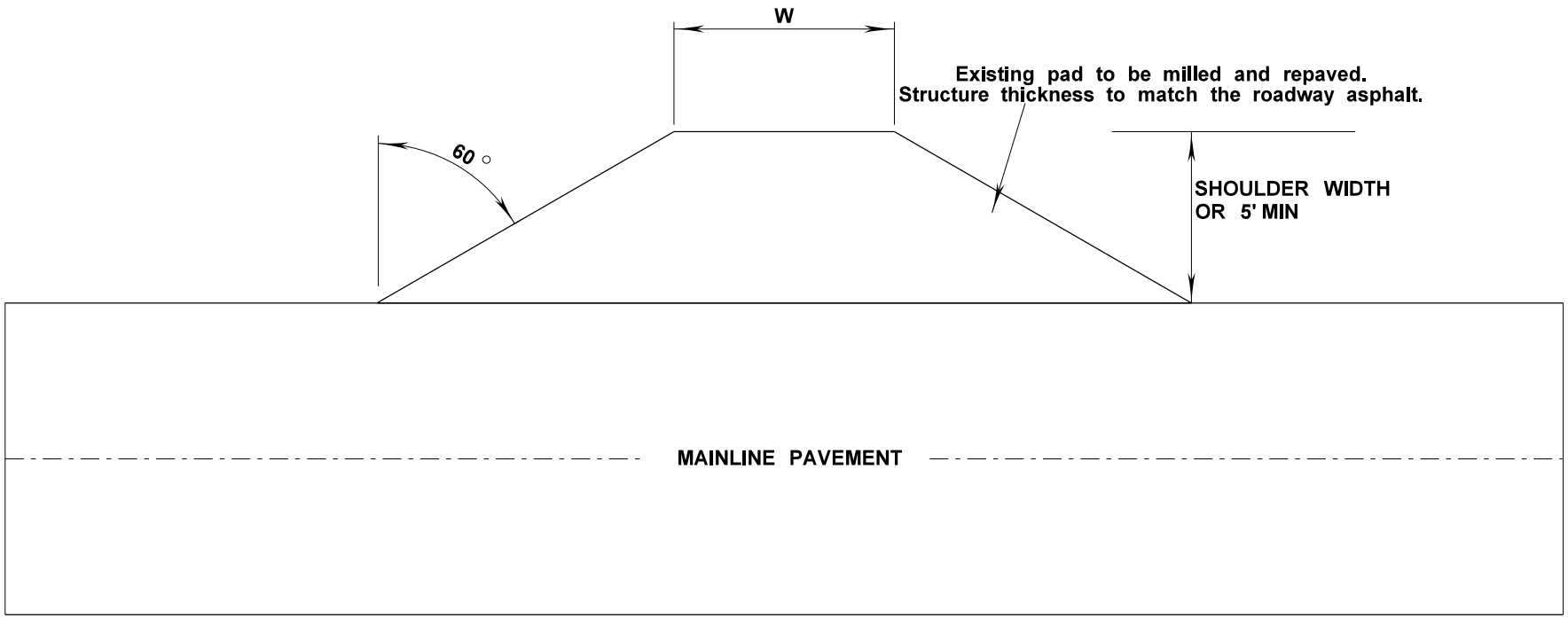
Notice To Bidders, Rev. 1289 -- Cont'd.

HINDS COUNTY
STP-0039-02(053)
107631/301000
HIGHWAY 18

STATION 10+00 TO 628+36

DRIVEWAY PAD DETAIL



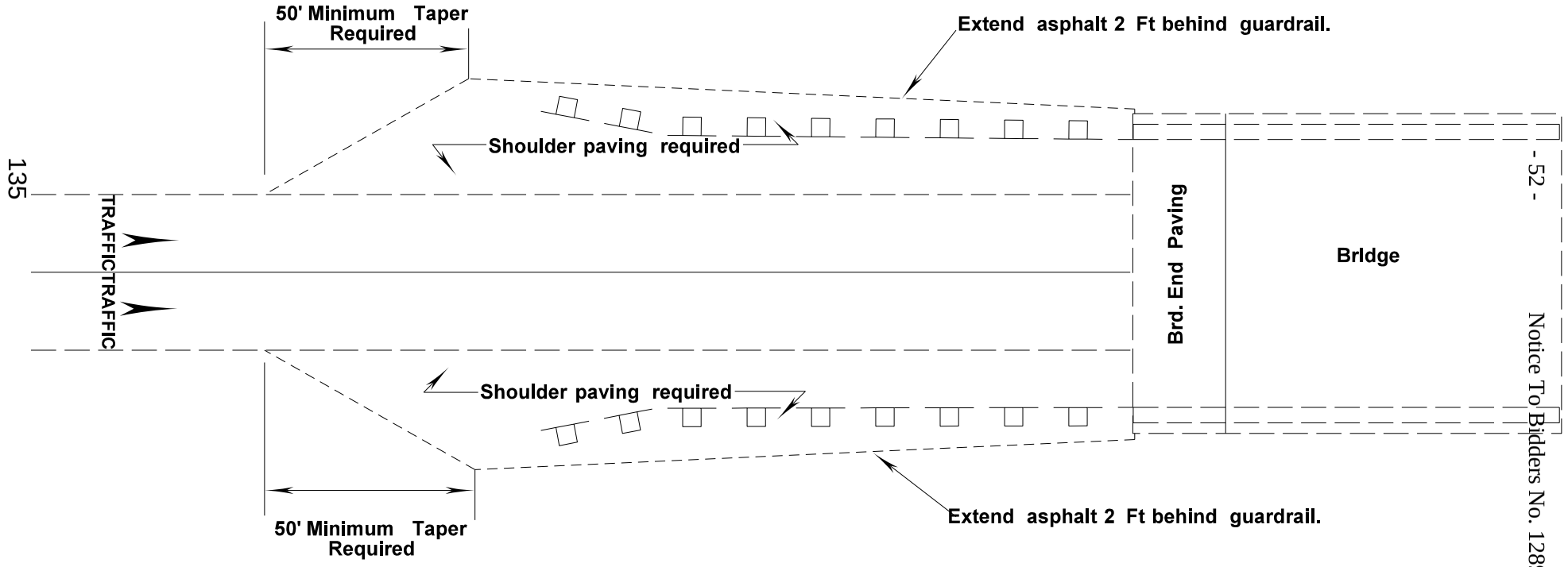
W = 16' MAX RESIDENTIAL
W = 30'-50' COMMERCIAL

NOTE:

THE ASPHALT ON THE EXISTING DRIVEWAY/RAMP PADS ARE TO REMAIN IN THEIR CURRENT SIZE AND LOCATION AND MILLED/OVERLAID. IF, IN THE OPINION OF THE ENGINEER, A PAD SHOULD BE MODIFIED OR REPLACED, PAYMENT WILL BE MADE FOR THE WORK USING THE APPROPRIATE PAY ITEMS. GRANULAR MATERIAL AND/OR STABILIZER AGGREGATE SHOULD BE PLACED AROUND THE PADS AS REQUIRED.

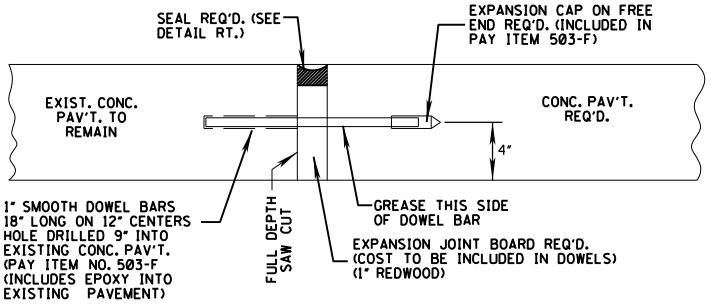
HINDS COUNTY
STP-0039-02(053)
107631/301000
HIGHWAY 18

TYPICAL DETAIL OF ADDITIONAL SHOULDER PAVING REQUIRED AT GUARDRAIL LOCATIONS

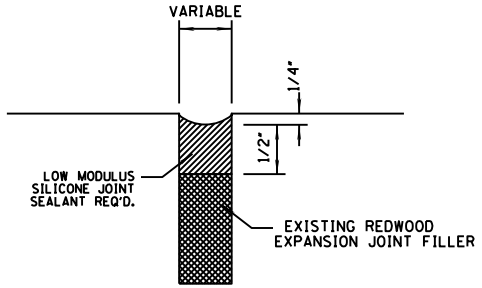


*Asphalt Thickness
See scope of work for additional details

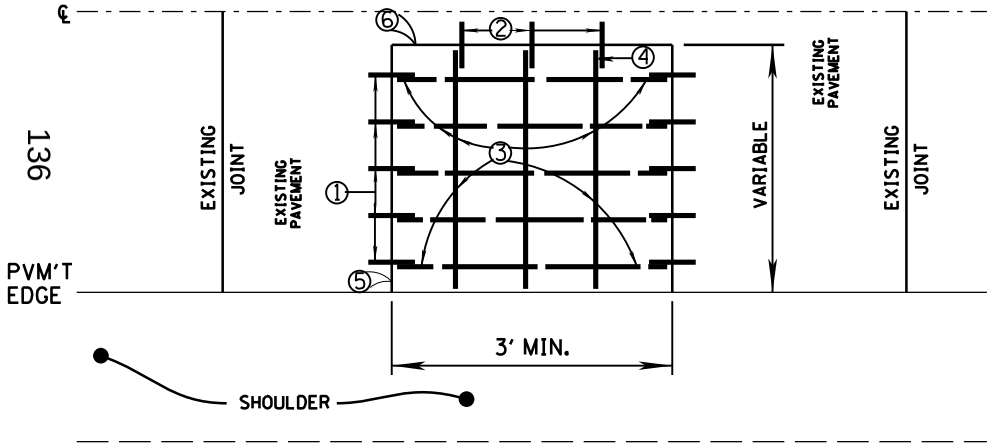
STATE	PROJECT NO.
MISS.	



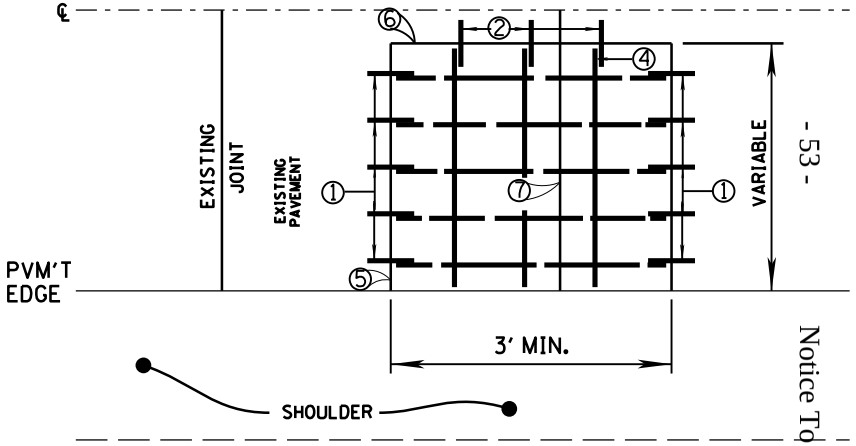
EXPANSION JOINT
DETAIL
(PARTIAL RECONSTRUCTION AT EXISTING EXPANSION JOINT)



DETAIL FOR SEALING
EXPANSION JOINTS



DETAIL OF TYPICAL
FAILURE REPAIR

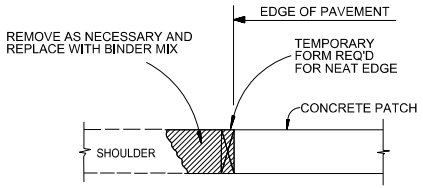


REPAIR OF FAILURE INCLUDING
EXPANSION JOINT

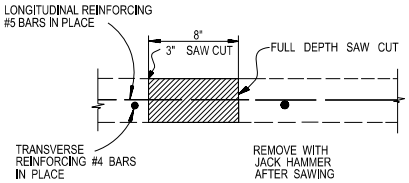
① 30" @ #5 TIE BARS @ 12" O.C.
② 30" @ #5 TIE BARS @ 42" O.C.
③ #5 BARS @ LENGTH OR WIDTH OF REPAIR, LESS 6"
④ A) LAP MIN. 12" FOR TIED LAP OR
B) LAP MIN. 6" WITH 4" WELD
⑤ FULL DEPTH SAW CUT TRANSVERSELY
⑥ FULL DEPTH SAW CUT LONGITUDINALLY

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
DETAILS FAILURE REPAIR OF JOINTED REINFORCED CONCRETE PAVEMENT
COUNTY: HINDS
PROJ. NUM.: STP-0039-02(053)/107631(3010000)
FILENAME: DETAIL JRCP SEAL.DGN
DESIGN TEAM _____ CHECKED _____ DATE _____
WORKING NUMBER JRCP-1
SHEET NUMBER

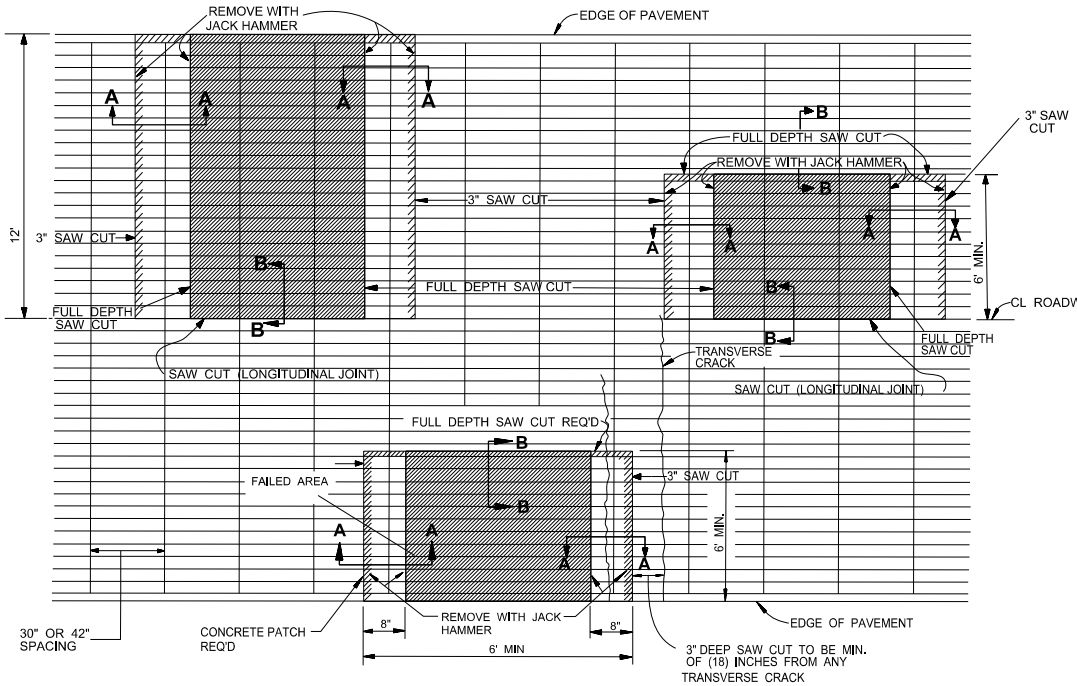
STATE	PROJECT NO.
MISS.	



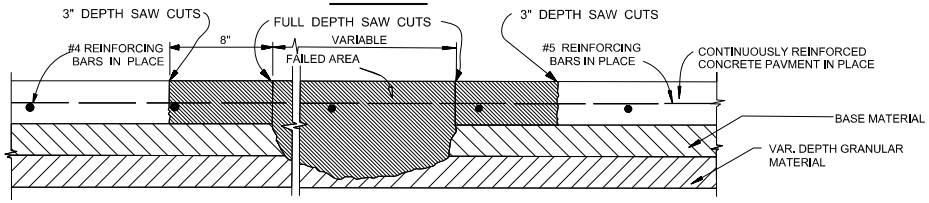
DETAIL FOR FORMING OUTER EDGE



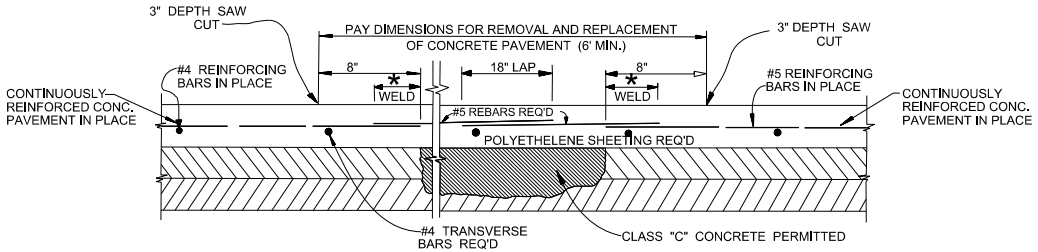
SECTION A - A



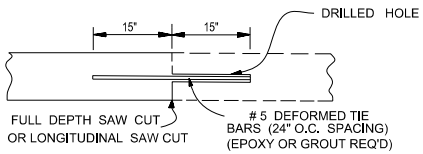
PLAN VIEW



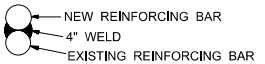
SECTIONAL VIEW (SHOWING AREA TO BE REMOVED)



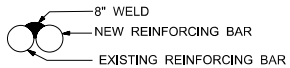
SECTIONAL VIEW (SHOWING REPLACED AREA)



SECTION B - B



DETAIL OF DOUBLE 4-INCH WELD



DETAIL OF SINGLE 8-INCH WELD

GENERAL NOTES

1. REMOVE EXISTING MATERIALS TO DIMENSIONS DETERMINED BY THE ENGINEER.
2. REMOVAL OF ASPHALT PATCHES AND CONCRETE PAVEMENT WILL BE PAID FOR UNDER THE APPROPRIATE PAY ITEM.
3. REINFORCING BARS TO BE FIELD CUT AS DIRECTED BY THE ENGINEER. COST OF REQUIRED REINFORCING BARS TO BE INCLUDED IN THE BID PRICE OF THE CONCRETE PAVEMENT
4. REMOVAL OF FAILED BASE (PAY AS REMOVAL OF CEMENT TREATED BASE - S.Y.). BACKFILL WITH CLASS "C" CONCRETE (BASE REPAIR).
5. PAVEMENT EDGE ADJACENT TO SHOULDER SHALL BE FORMED.
6. SEE SHEET NO. 102 FOR DETAILS NOT SHOWN.
7. POLYETHELENE SHEETING SHALL BE TWO (2) LAYERS OF 8 MIL THICKNESS. (ABSORBED ITEM).
8. REINFORCING BARS WILL BE SUPPORTED AS SHOWN ON SHEET NO. 102.
9. ALL SAW CUTS (3" DEPTH, FULL DEPTH, AND LONGITUDINAL JOINT) WILL BE PAID FOR UNDER APPROPRIATE PAY ITEMS.
10. #5 DEFORMED TIE BARS (30 IN. LONG, @ 24 IN. O.C. SPACING) WILL BE PAID FOR UNDER APPROPRIATE PAY ITEM.
11. THE TRANSVERSE BARS IN THE REPAIR AREA WILL BE SPACED ON 42" CENTERS REGARDLESS OF THE EXISTING SPACING OF THE TRANSVERSE STEEL.

* DOUBLE 4-INCH OR SINGLE 8-INCH WELD

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Notice To Bidders No. 289 -- Cont'd.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

TYPICAL CRC PAVEMENT REPAIR (OPTIONAL WELDING METHOD)

COUNTY: HINDS

PROJ. NUM.: STP-0039-02(053)/107631/301000

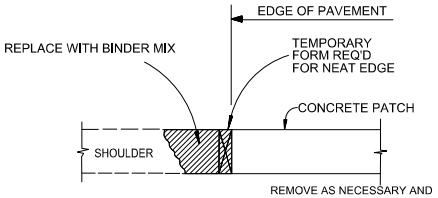
FILENAME: RWD.CEL

DESIGN TEAM _____ CHECKED _____ DATE _____

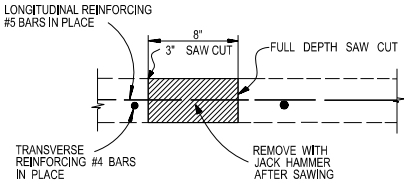
WORKING NUMBER PR-1A

SHEET NUMBER

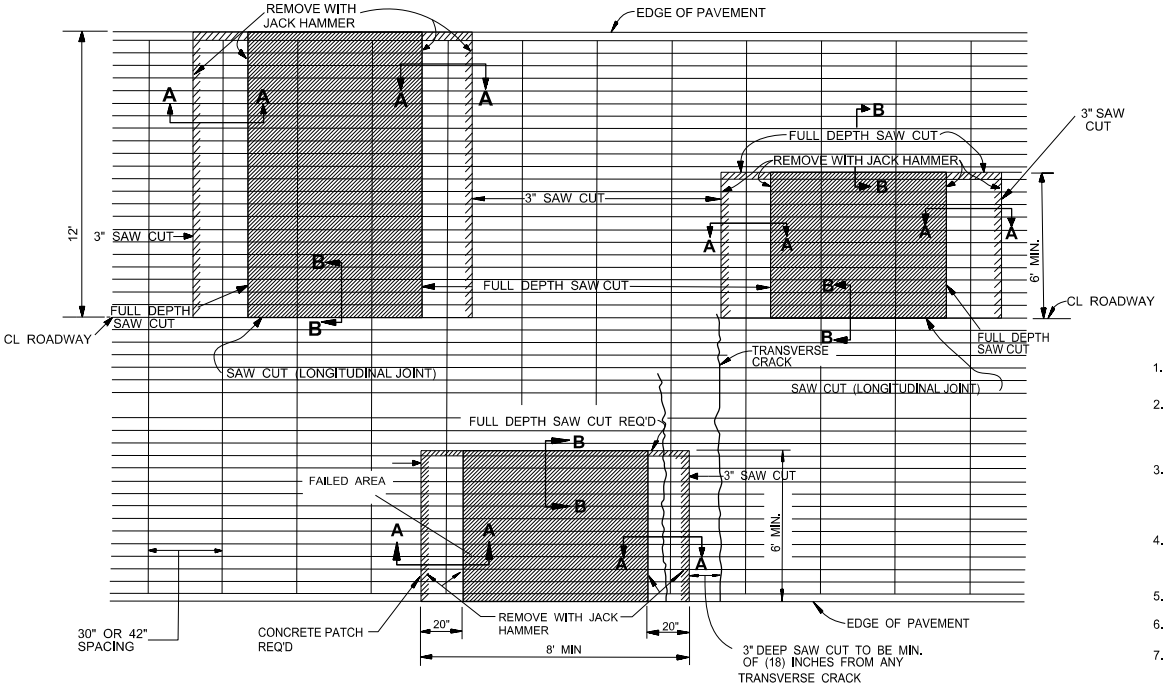
STATE	PROJECT NO.
MISS.	



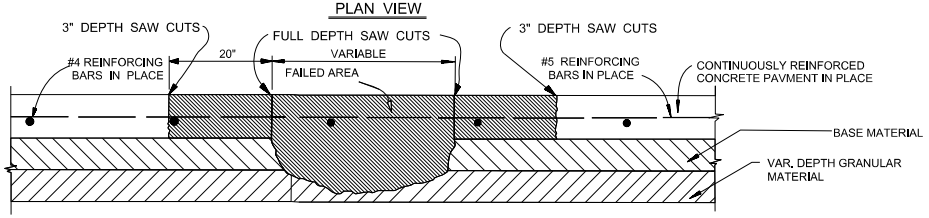
DETAIL FOR FORMING OUTER EDGE



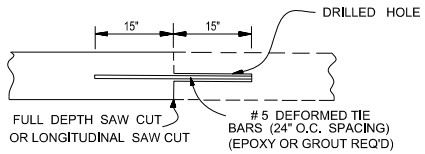
SECTION A - A



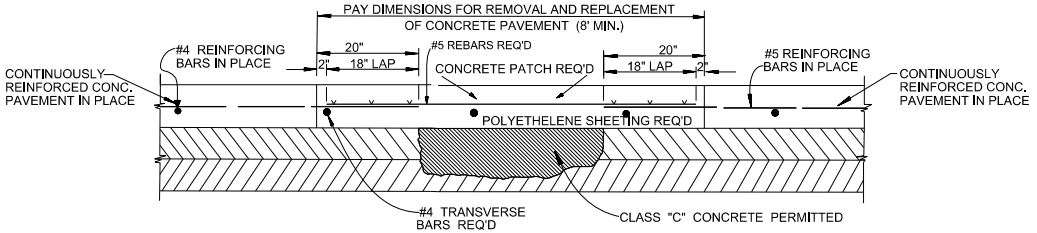
PLAN VIEW



SECTIONAL VIEW (SHOWING AREA TO BE REMOVED)



SECTION B - B



SECTIONAL VIEW (SHOWING REPLACED AREA)

GENERAL NOTES

1. REMOVE EXISTING MATERIALS TO DIMENSIONS DETERMINED BY THE ENGINEER.
2. REMOVAL OF ASPHALT PATCHES AND CONCRETE PAVEMENT WILL BE PAID FOR UNDER THE APPROPRIATE PAY ITEM.
3. REINFORCING BARS TO BE FIELD CUT AS DIRECTED BY THE ENGINEER. COST OF REQUIRED REINFORCING BARS TO BE INCLUDED IN THE BID PRICE OF THE CONCRETE PAVEMENT
4. REMOVAL OF FAILED BASE (PAY AS REMOVAL OF CEMENT TREATED BASE - S.Y.). BACKFILL WITH CLASS "C" CONCRETE (BASE REPAIR).
5. PAVEMENT EDGE ADJACENT TO SHOULDER SHALL BE FORMED.
6. SEE SHEET NO. 102 FOR DETAILS NOT SHOWN.
7. POLYETHELENE SHEETING SHALL BE TWO (2) LAYERS OF 8 MIL THICKNESS. (ABSORBED ITEM).
8. REINFORCING BARS WILL BE SUPPORTED AS SHOWN ON SHEET NO. 102.
9. ALL SAW CUTS (3" DEPTH, FULL DEPTH, AND LONGITUDINAL JOINT) WILL BE PAID FOR UNDER APPROPRIATE PAY ITEMS.
10. #5 DEFORMED TIE BARS (30 IN. LONG, @ 24 IN. O.C. SPACING) WILL BE PAID FOR UNDER APPROPRIATE PAY ITEM.
11. THE TRANSVERSE BARS IN THE REPAIR AREA WILL BE SPACED ON 42" CENTERS REGARDLESS OF THE EXISTING SPACING OF THE TRANSVERSE STEEL.

Notice To Bidders No. 289 - Cont'd. - 55 -

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MISSISSIPPI DEPARTMENT OF TRANSPORTATION

TYPICAL CRC PAVEMENT REPAIR

COUNTY: HINDS

PROJ. NUM.: STP-0039-02(053)/107631/301000

WORKING NUMBER PR-1B

SHEET NUMBER

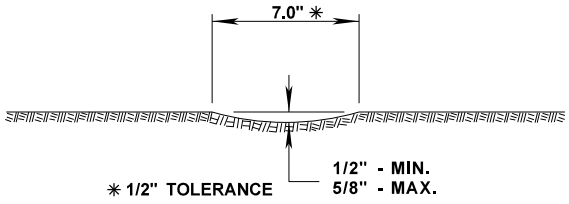
FILENAME: DETAIL PR-1B.DGN

DESIGN TEAM _____ CHECKED _____ DATE _____

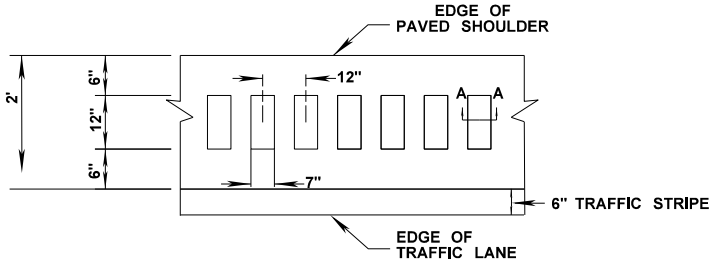
BY: DIVISION: DATE:

HINDS COUNTY
STP-0039-02(053)
107631/301000
HIGHWAY 18

RUMBLE STRIP



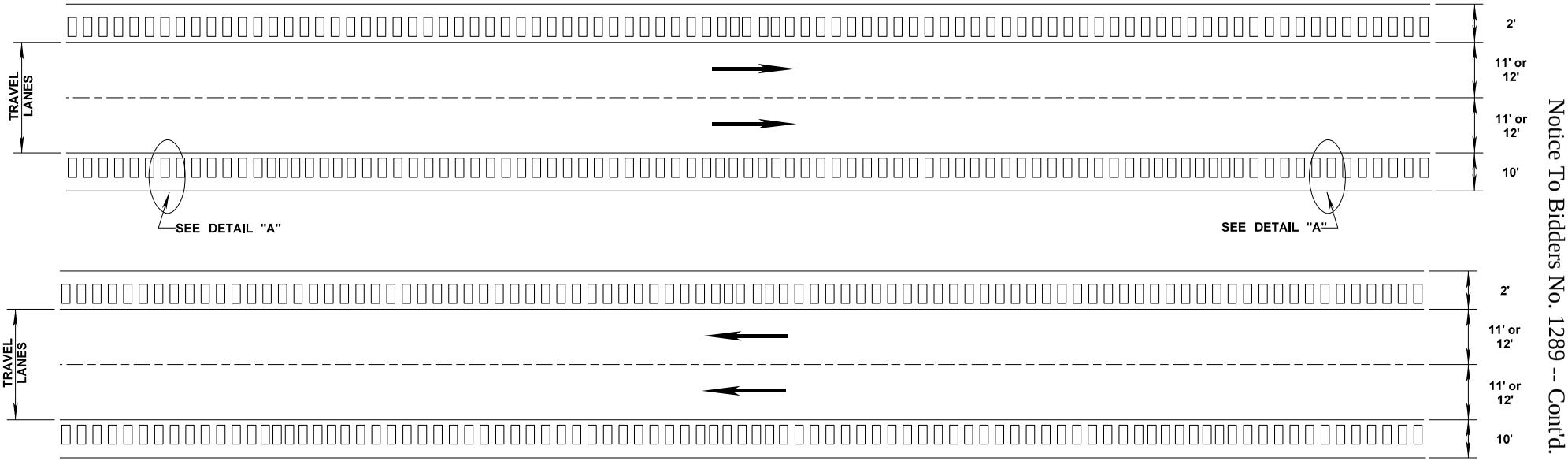
SECTION "A-A"



DETAIL "A"

GENERAL NOTES

1. GROUND-IN RUMBLE STRIPES SHALL BE APPLIED ON LEFT AND RIGHT SHOULDERS OF ALL PAVED SHOULDERS ON THIS PROJECT
2. GROUND-IN RUMBLE STRIPES SHALL BE OMITTED ACROSS PRINCIPAL INTERSECTING ROADWAYS, OTHER INTERRUPTIONS AND WITHIN CITY LIMITS IN NORMAL SHOULDER WIDTH AS DIRECTED BY THE ENGINEER
3. COST TO BE PAID FOR USING APPROPRIATE PAY ITEMS
4. GROUND-IN RUMBLE STRIPES SHALL BE APPLIED TO MAINLINE ONLY.
5. DO NOT USE WHERE TRAVEL LANE IS LESS THAN 11' WIDE.

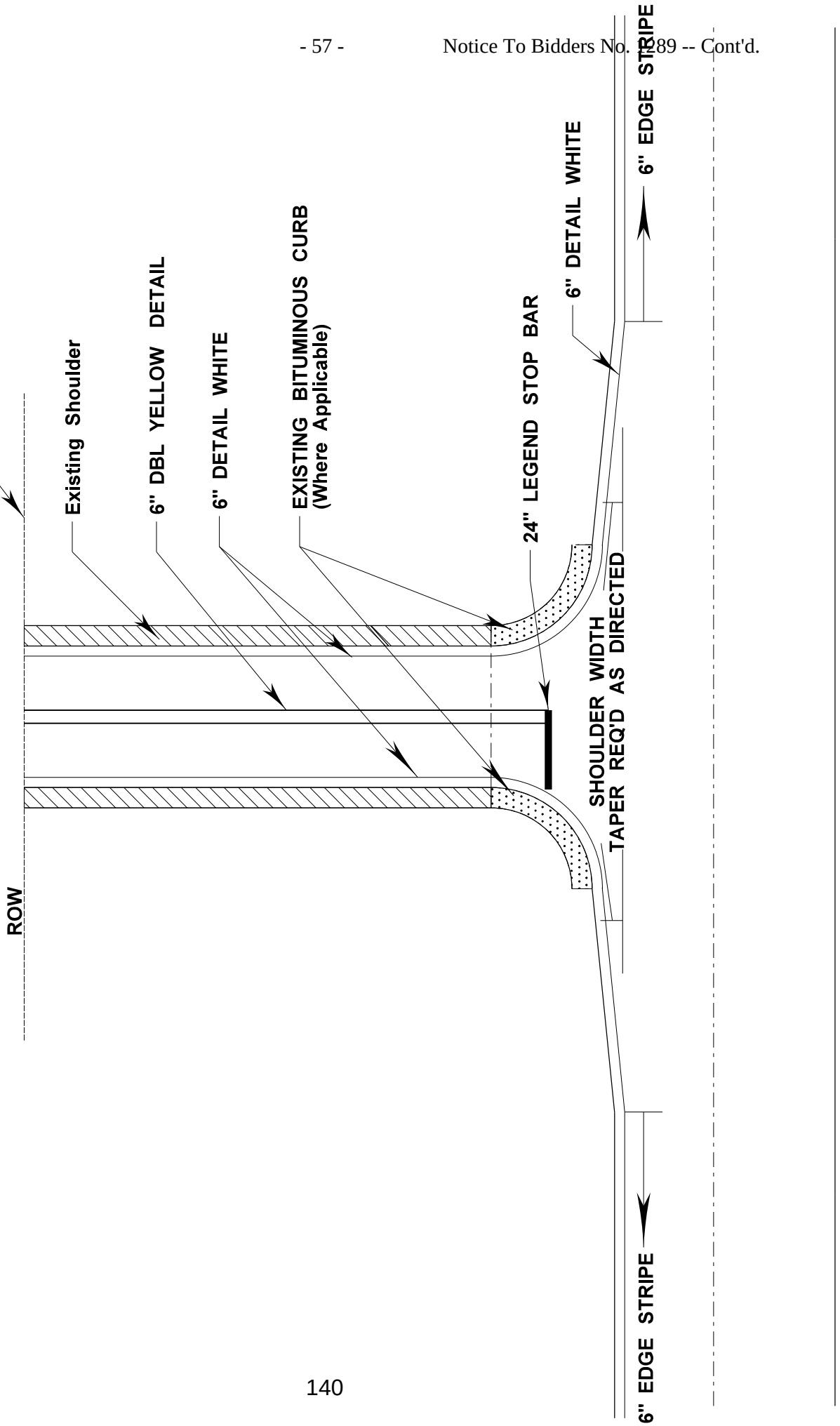


PLAN

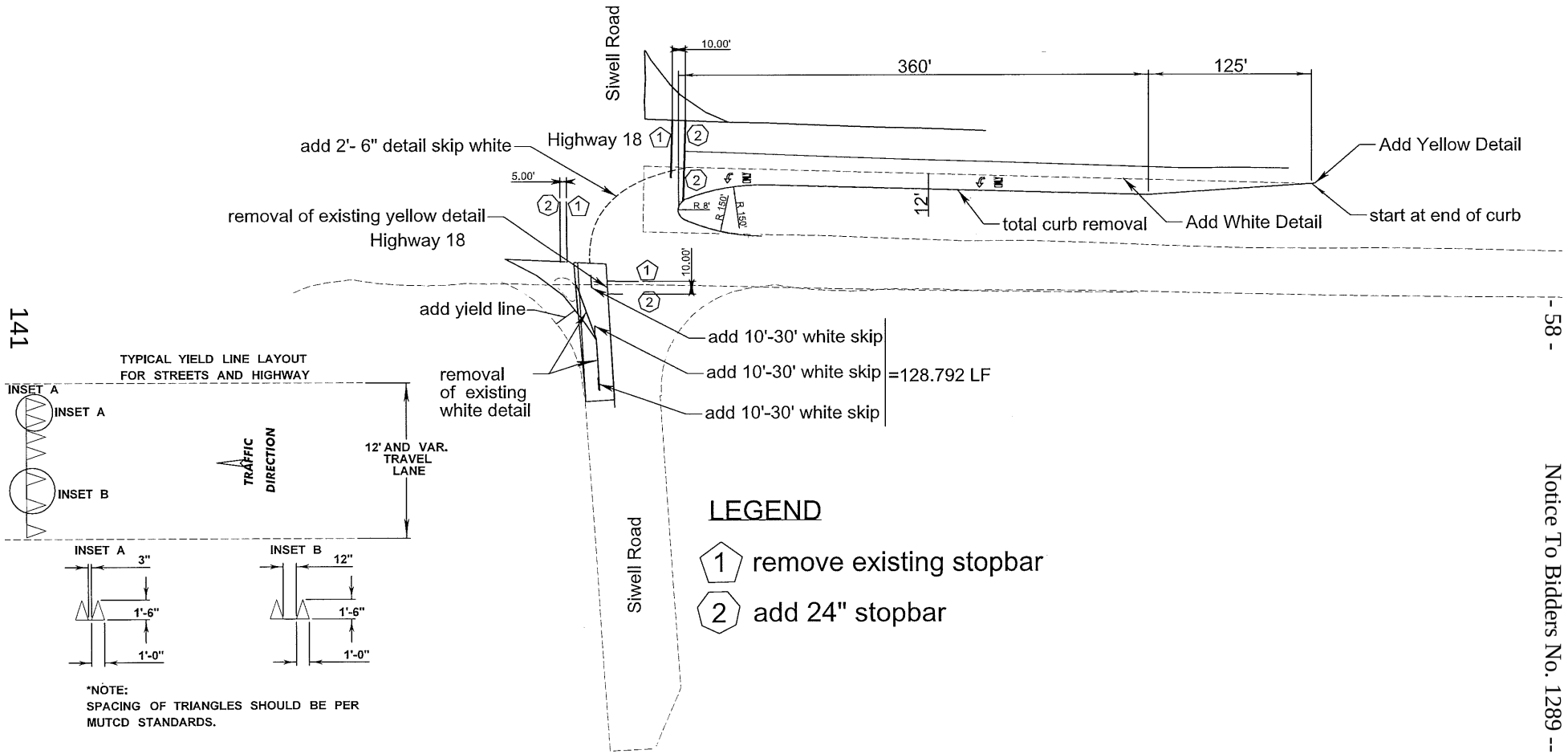
NOT TO SCALE

HINDS COUNTY
STP-0039-02(053)
107631/301000
HIGHWAY 18

STRIPE DETAIL - COUNTY ROADS



HINDS COUNTY
STP-0039-02 (053) /107631/301000
PROPOSED TURN LANE ON MEDIAN
AT SIWELL ROAD

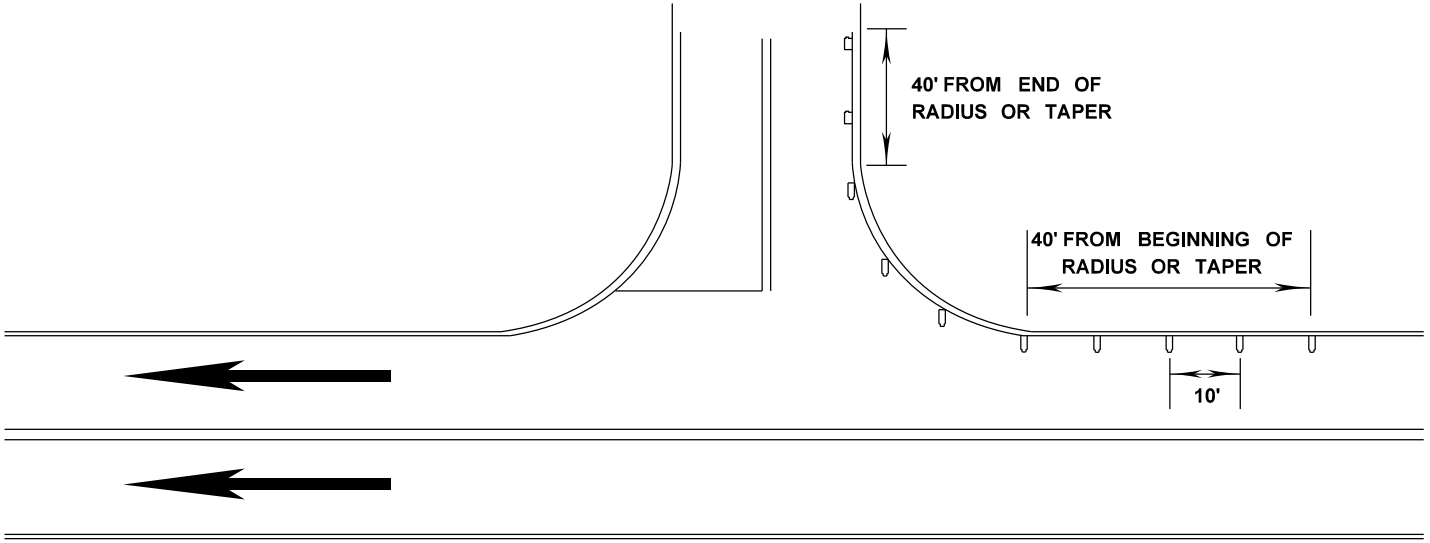


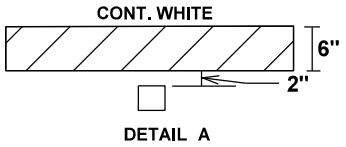
TYPICAL YIELD LINE LAYOUT
FOR STREETS AND HIGHWAY

*NOTE:
SPACING OF TRIANGLES SHOULD BE PER
MUTCD STANDARDS.

HINDS COUNTY
STP-0039-02(053)
107631/301000
HIGHWAY 18

TYPICAL FOR RAISED PAVEMENT MARKERS PLACED ON SIDE ROAD RADIUS





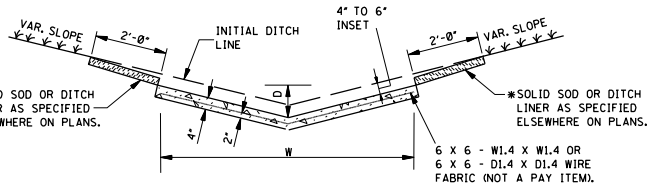
NOTE 1. MARKERS SHALL BE PLACED EVERY 10 FEET.

NOTE 2. MARKERS SHALL BE VISIBLE FROM THE TRAVELING MOTORIST ON STATE DESIGNATED HIGHWAYS.

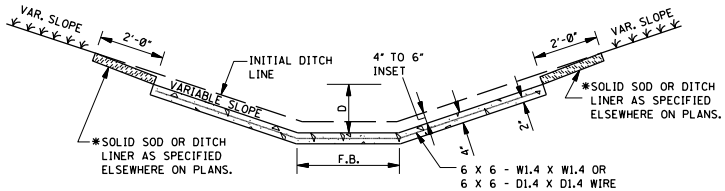
NOTE 3. MARKERS SHALL BE HIGH PERFORMANCE TWO WAY CLEAR.

NOTE 4. FIVE (5) MARKERS SHALL BE PLACED ALONG MAINLINE EDGE STRIPE.

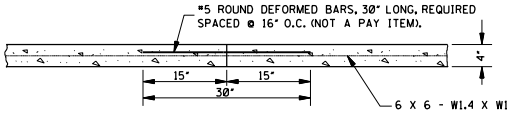
NOTE 5. MARKERS FOR COUNTY ROADS SHALL CONTINUE DOWN THE EDGE STRIPE A DISTANCE OF 40 FEET.



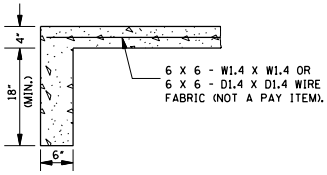
"V" TYPE SECTION



FLAT BOTTOM SECTION



DETAIL OF CONSTRUCTION JOINT



DETAIL OF TOE WALL

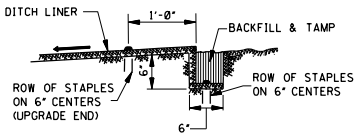
NOTE: TOE WALL REQUIRED UPSTREAM AND DOWNSTREAM.

CONCRETE PAVED DITCH

NOTES:

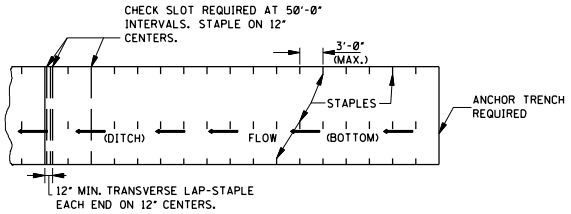
1. CONCRETE PAVED DITCHES SHALL BE GROOVED AT 20'-0" INTERVALS. THE GROOVES SHALL BE CUT TO A DEPTH OF NOT LESS THAN 1".
2. DIMENSIONS D & W ARE AS FOLLOWS:
   D(MINIMUM) = 6"
   D(NOMINAL) = 9"
   W(MINIMUM) = 24"
3. CHAIR SUPPORTS FOR THE WIRE MESH WILL NOT BE REQUIRED. HOWEVER, THE CONTRACTOR SHALL PLACE THE WIRE MESH IN A SATISFACTORY AND WORKMANLIKE MANNER TO ENSURE THAT THE FINAL POSITION IS REASONABLY NEAR THE POSITION INDICATED.

*4. CENTER ROW OF STAPLES MAY BE OMITTED ON DITCH LINER.

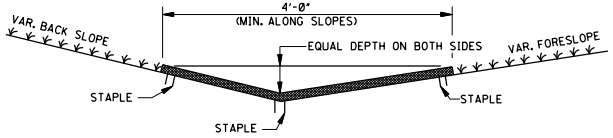


ANCHOR TRENCH DETAIL

NOTE: ANCHOR TRENCH REQUIRED AT THE BEGINNING AND ENDING OF EACH AREA TO BE COVERED, EXCEPT DOWNSTREAM END ADJOINING A STRUCTURE.



PLAN

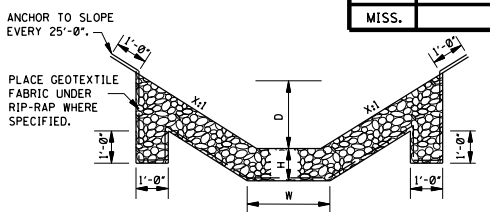


SECTION

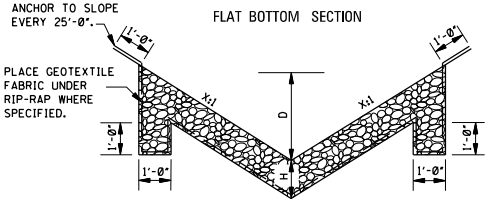
DITCH LINER TREATMENT

(EXCELSIOR BLANKET, JUTE MESH OR EROSION CONTROL FABRIC)

NOTE: DITCHES TREATED WITH DITCH LINER WILL BE VEGETATED PRIOR TO TREATMENT, UNLESS OTHERWISE INDICATED.



FLAT BOTTOM SECTION



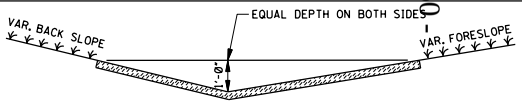
"V" TYPE SECTION

RIP-RAP TREATMENT

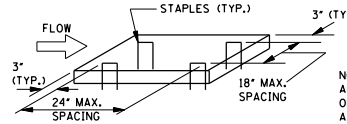
NOTES:

1. DIMENSIONS D, W AND X ARE VARIABLE AND ARE SHOWN ELSEWHERE ON THE PLANS.
2. THE RIP-RAP SIZE AND MINIMUM DEPTH "H" FOR RIP-RAP TREATMENT ARE AS FOLLOWS.

RIP-RAP SIZE & MINIMUM DEPTH "H"	
H (In)	RIP-RAP SIZE (lbs)
12"	100
18"	300



SOLID SOD TREATMENT



NOTE: SOLID SOD (STAPLES OR BLOCKS) ARE TO BE STAPLED, PINNED, PEGGED OR STAKED AT THE FOUR CORNERS OR AT THE MAXIMUM SPECIFIED SPACING.

GENERAL NOTE:

1. FOR LOCATION OF APPROPRIATE DITCH TREATMENTS, SEE PLAN SHEETS AS DENOTED BY THE FOLLOWING LEGEND OR AS DIRECTED BY THE ENGINEER:

DITCH LINER
SOLID SOD
CONCRETE PAVED DITCH
RIP-RAP

STATE	PROJECT NO.
MISS.	

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

DETAILS OF TYPICAL DITCH TREATMENTS

PRELIMINARY
NOT FOR CONSTRUCTION

COUNTY: HINDS
PROJ. NUM.: STP-0039-02(053)/107631/301000

WORKING NUMBER DT-1

FILENAME: DT-1.DGN

SHEET NUMBER

DESIGN TEAM _____ CHECKED _____ DATE 07/01/2016

BY: DATE: REVISION:

Notice To Bidders No. 2289 -- Cont'd

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1290 **CODE: (SP)**

DATE: 1/23/2019

SUBJECT: Lane Closure Restrictions

PROJECT: STP-0039-02(053) / 107631301 – Hinds County

Bidders are hereby advised that lane closure restrictions on the above project shall be as follows:

Lane closures will NOT be allowed From Maddox Rd to the EOP between the hours of 6:00 AM to 7:00 PM.

Exception: -- Only for full depth concrete punchout operations, a lane closure will be allowed to remain in place from 7:00 PM Friday to 6:00 AM Monday.

No exceptions to the above restrictions will be allowed unless specifically approved by the Project Engineer.

Also, no lane closures will be permitted on the following holidays or the day preceding them: New Year's Day, Memorial Day, Easter, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. In the event that one the above mentioned holidays falls during the weekend or on a Monday, no lane closures will be allowed during that weekend or the Friday immediately preceding that holiday. In addition, no lane closures will be allowed the Friday, Saturday, and Sunday following Thanksgiving.

If the lane closure restriction listed above is violated, the Contractor will be charged a fee of **$500.00** for each full or partial five minute period until the roadway is back in compliance with the lane closure restriction requirement.

For the purposes of this contract, official time shall be the announced time available at the Jackson area telephone number (601) 355-9311.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1291 **CODE: (SP)**

DATE: 01/25/2019

SUBJECT: Temporary Construction Signs

PROJECT: STP-0039-02(053) / 107631301 – Hinds County

Bidders are hereby advised of the following regarding the Temporary Construction Signs required:

Should the Bidders elect to install Temporary Construction Signs by first driving short u-channel sections and then bolting the longer, correct height u-channel sections to them, the Bidders are advised that these short sections shall be a minimum of five (5) feet from the ground level when driven and the splice must consist of a minimum of eighteen (18) inches of overlap with a total of four (4) bolts. Bidders are also advised that it is mandatory that these short sections be removed at the completion of the project.

General Decision Number: MS190134 01/04/2019 MS134

Superseded General Decision Number: MS20180238

State: Mississippi

Construction Type: Highway

County: Hinds County in Mississippi.

HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.60 for calendar year 2019 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/04/2019

* ELEC0480-010 07/01/2018

	Rates	Fringes
TRAFFIC SIGNALIZATION		
Electrician	$ 25.10	9.13

SUMS2010-057 08/04/2014

	Rates	Fringes
CARPENTER (Form Work Only)	$ 13.73	0.00
CEMENT MASON/CONCRETE FINISHER	$ 13.93	0.00
ELECTRICIAN	$ 24.04	5.87

HIGHWAY/PARKING LOT STRIPING: Truck Driver (Line Striping Truck)	$ 11.81	0.00
INSTALLER - GUARDRAIL	$ 12.07	0.00
INSTALLER - SIGN	$ 12.13	0.00
IRONWORKER, REINFORCING	$ 15.47	0.00
LABORER: Common or General, Including Asphalt Raking, Shoveling, Spreading; and Grade Checking	$ 10.32	0.00
LABORER: Flagger	$ 9.69	0.00
LABORER: Luteman	$ 12.88	0.00
LABORER: Mason Tender - Cement/Concrete	$ 12.11	0.00
LABORER: Pipelayer	$ 13.44	0.00
LABORER: Laborer-Cones/ Barricades/Barrels - Setter/Mover/Sweeper	$ 10.39	0.00
OPERATOR: Asphalt Spreader	$ 14.71	0.00
OPERATOR: Backhoe/Excavator/Trackhoe	$ 16.01	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader	$ 11.64	0.00
OPERATOR: Broom/Sweeper	$ 9.75	0.00
OPERATOR: Bulldozer	$ 13.87	0.00
OPERATOR: Concrete Saw	$ 14.38	0.00
OPERATOR: Crane	$ 21.33	0.00
OPERATOR: Distributor	$ 10.25	0.00
OPERATOR: Grader/Blade	$ 14.31	0.00
OPERATOR: Grinding/Grooving Machine	$ 15.90	0.00
OPERATOR: Loader	$ 11.96	0.00
OPERATOR: Mechanic	$ 15.20	0.00
OPERATOR: Milling Machine	$ 14.68	0.00
OPERATOR: Mixer	$ 14.25	0.00

OPERATOR: Oiler.....$ 12.13 0.00

OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....$ 11.59 0.00

OPERATOR: Roller (All Types)....$ 11.53 0.00

OPERATOR: Scraper.....$ 12.25 0.00

OPERATOR: Tractor.....$ 11.81 0.00

TRUCK DRIVER: Flatbed Truck.....$ 14.06 0.00

TRUCK DRIVER: Lowboy Truck.....$ 12.56 0.00

TRUCK DRIVER: Mechanic.....$ 13.00 0.00

TRUCK DRIVER: Water Truck.....$ 10.00 0.00

TRUCK DRIVER: Dump Truck (All Types).....$ 11.39 0.00

TRUCK DRIVER: Semi/Trailer Truck.....$ 14.60 0.00

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

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

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

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the

cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of

each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

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

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

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

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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

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

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

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

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

SUPPLEMENT TO FORM FHWA-1273

DATE: 12/17/2018

SUBJECT: Federal **Contract Provisions for Subcontracts** and Cargo Preference Act

Federal Contract Provisions for Subcontracts

All subcontracts shall be in writing and contain all pertinent provisions and requirements of the prime contract.

Each "Request for Permission to Subcontract" (Mississippi Department of Transportation Form CAD-720) shall include a copy of the subcontract. The federal contract provisions (FHWA-1273, SUPPLEMENT TO FORM FHWA-1273, NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246), DAVIS-BACON AND RELATED ACT PROVISIONS (WAGE RATES)) must be physically incorporated as part of the subcontract. A completed Mississippi Department of Transportation Form CAD-521 and Form CAD-725 must be attached to the CAD-720.

Cargo Preference Act

The Contractor is hereby advised of the requirements set forth in the following Attachment (Title 46 - Shipping) as it pertains to the implementation of Cargo Preference Act (CPA) requirements in the Federal-aid Highway Program.

By signing this contract, the Contractor agrees to conform to the requirements of the CPA.

Attachment

Title 46- Shipping

Volume: 8
Date: 2014-10-01
Original Date: 2014-10-01
Title: Section 381.7 - Federal Grant, Guaranty, Loan and Advance at Funds Agreements.
Context: Title 46- Shipping. CHAPTER II- MARITIME ADMINISTRATION, DEPARTMENT OF TRANSPORTATION. SUBCHAPTER J - MISCELLANEOUS. PART 381 - CARGO PREFERENCE-U.S.-FLAG VESSELS.

§ 381.7 Federal Grant, Guaranty, Loan and Advance of Funds Agreements.

In order to insure a fair and reasonable participation by privately owned United States-flag commercial vessels in transporting cargoes which are subject to the Cargo Preference Act of 1954 and which are generated by U.S. Government Grant, Guaranty, Loan and/or Advance of Funds Programs, the head of each affected department or agency shall require appropriate clauses to be inserted in those Grant. Guaranty$_1$ Loan and/or Advance of Funds Agreements and all third party contracts executed between the borrower/grantee and other parties, where the possibility exists for ocean transportation of items procured, contracted for or otherwise obtained by or on behalf of the grantee, borrower, or any of their contractors or subcontractors. The clauses required by this part shall provide that at least 50 percent of the freight revenue and tonnage of cargo generated by the U.S. Government Grant, Guaranty, Loan or Advance of Funds be transported on privately owned United States-flag commercial vessels. These clauses shall also require that all parties provide to the Maritime Administration the necessary shipment information as set forth in § 381.3. A copy of the appropriate clauses required by this part shall be submitted by each affected agency or department to the Secretary, Maritime Administration, for approval no later than 30 days after the effective date of this part. The following are suggested acceptable clauses with respect to the use of United States-flag vessels to be incorporated in the Grant, Guaranty, Loan and/or Advance of Funds Agreements as well as contracts and subcontracts resulting therefrom:

(a) *Agreement Clauses.* "Use of United States-flag vessels:

"(1) Pursuant to Pub. L 664 (43 U.S.C. 1241(b)) at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned United States-flag commercial vessels, if available.

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

(b) *Contractor and Subcontractor Clauses.* "Use of United States-flag vessels: The contractor agrees --

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

"(2) To furnish within 20 days following the date of loading for shipments originating within the United

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

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

(Reorganization Plans No.21 of 1950(64 Stat. 1273) and No. 7 of 1961 (75 Stat. 840) as amended by Pub. L 91.469 (84 Stat 1036) and Department of Commerce Organization Order 10-8 (38 FR 19707, July 23, 1973)) (42 FR 57126, Nov. 1, 1977]

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

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

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

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

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

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

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

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

II. NONDISCRIMINATION

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

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

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

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

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

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

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

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

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

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

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

1. Minimum wages

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

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

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

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

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

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

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

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

the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

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

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

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

2. Withholding

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

3. Payrolls and basic records

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

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

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

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

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

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

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

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

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

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

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

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

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

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

b. Trainees (programs of the USDOL).

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

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

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

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

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

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

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

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

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

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

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

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

10. Certification of eligibility.

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

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

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

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

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

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

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

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

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

VI. SUBLETTING OR ASSIGNING THE CONTRACT

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

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

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

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

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

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

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

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

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

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

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

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

VII. SAFETY: ACCIDENT PREVENTION

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

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

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

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

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

* * * * *

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

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

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

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

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

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

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

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

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

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

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

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

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

2. The goal for female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work, is 6.9%.

Until further notice	Goals for minority participation for each trade (percent)
SHSA Cities:	
Pascagoula - Moss Point	16.9
Biloxi - Gulfport	19.2
Jackson	30.3
SMSA Counties:	
Desoto	32.3
Hancock, Harrison, Stone	19.2
Hinds, Rankin	30.3
Jackson	16.9
Non-SMSA Counties:	
George, Greene	26.4
Alcorn, Benton, Bolivar, Calhoun, Carroll, Chickasaw, Clay, Coahoma, Grenada, Itawamba, Lafayette, Lee, Leflore, Marshall, Monroe, Montgomery, Panola, Pontotoc, Prentiss, Quitman, Sunflower, Tallahatchie, Tate, Tippah, Tishomingo, Tunica, Union, Washington, Webster, Yalobusha	26.5
Attala, Choctaw, Claiborne, Clarke, Copiah, Covington, Franklin, Holmes, Humphreys, Issaquena, Jasper, Jefferson, Jefferson Davis, Jones Kemper, Lauderdale, Lawrence, Leake, Lincoln, Lowndes, Madison, Neshoba, Newton, Noxubee, Oktibbeha, Scott, Sharkey, Simpson, Smith, Warren, Wayne, Winston, Yazoo	32.0
Forrest, Lamar, Marion, Pearl River, Perry, Pike, Walthall	27.7
Adams, Amite, Wilkinson	30.4

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

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4.2(d). Compliance with the goals will be measured against the total work hours performed.

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

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is to the county and city (if any), stated in the advertisement.

5. The notification required in Paragraph 3 shall be addressed to the following:

Contract Compliance Officer
Mississippi Department of Transportation
P.O. Box 1850
Jackson, Mississippi 39215-1850

(12/04/2018)

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-102-2 **CODE: (IS)**

DATE: 11/22/2017

SUBJECT: Bidding Requirements and Conditions

Section 102, Bidding Requirements and Conditions, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-102.01--Prequalification of Bidders. Delete the last sentence of the third paragraph of Subsection 102.01 on page 13, and substitute the following.

The Bidder's Certificate of Responsibility number must be on file with the Department's Contract Administration Division prior to request for permission to bid.

907-102.02--Contents of Proposal Forms. Delete the fourth paragraph in Subsection 102.02 on page 13, and substitute the following.

Prospective bidders must complete an online request for permission to be eligible to bid a project. Upon approval, the bidder will be authorized to submit a bid electronically using Bid Express at http://bidx.com.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-103-2 **CODE: (SP)**

DATE: 06/22/2017

SUBJECT: Award and Execution of Contract

Section 103, Award and Execution of Contract, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-103.01--Consideration of Proposal. Delete the second and third paragraphs of Subsection 103.01 on page 19, and substitute the following.

907-103.01.1--For Projects Constructed Without Federal Funds. Resident Contractors actually domiciled in Mississippi are to be granted preference over nonresidents in awarding of Contracts financed 100% with State funds.

In consideration of proposals that are equal to or in excess of $50,000 and financed 100% with State funds, a nonresident bidder domiciled in a state having laws granting preference to local Contractors will be considered for such contracts on the same basis as the nonresident bidder's state awards contracts to Mississippi Contractors bidding under similar circumstances. When a nonresident Contractor submits a bid equal to or in excess of $50,000 on a contract financed 100% with State funds, a copy of the current laws from the state of domicile and an explanation thereof pertaining to treatment of nonresident Contractors shall be attached. If no preferential treatment is provided for Contractors in the state of domicile and contracts are awarded to the lowest responsible bidder, a statement to this effect shall be attached. Should the attachment not accompany the bid when submitted, the Contractor shall have 10 days following the opening of the bids to furnish the required information to the Contract Administration Director for attachment to the bid. Failure to provide the attachment within 10 days will result in the nonresident Contractor’s bid being rejected and not considered for award. As used herein, the term "resident Contractor" includes a nonresident person, firm or corporation that has been qualified to do business in this State and has maintained a permanent full-time office in the State of Mississippi for two years prior to the submission of the bid, and the subsidiaries and affiliates of such a person, firm or corporation.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-515-1 **CODE: (SP)**

DATE: 05/22/2018

SUBJECT: Fiber Reinforced Polymer Patching Material

Section 907-515, Fiber Reinforced Polymer Patching Material, is hereby added and made a part of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction as follows.

SECTION 907-515 -- FIBER REINFORCED POLYMER PATCHING MATERIAL

907-515.01--Description. This item shall govern for the repair of spalled areas, potholes, and joints on concrete decks, concrete pavements, and asphalt pavements using a fiber reinforced polymer patching material (hereafter referred to as the patching material), bulking and surface course aggregates as specified below**.**

907-515.02--Material. The patching material shall be a hot applied binder consisting of 36% bitumen and polymers mixed in the factory with graded fillers, granite aggregates, metal fibers, glass fibers, and recycled tire rubber that provide an impermeable, voidless mass solid at ambient temperatures. The binder shall be formulated according to climatic conditions to provide a durable pavement repair with good fluidity at process temperature, low temperature flexibility and ambient temperature flow resistance.

907-515.02.1--Binder Properties. The binder shall meet the following requirements.

Binder Properties	Requirement	Method
Bond, 3 cycles @ -20ºC, 50% extension	Pass	ASTM D 1190
Cone Penetration, @ 39.2ºF, pen units	15	ASTM D 5329
Ductility, @ 25ºC, cm min	40	ASTM D 113
Flow, @ 60ºC @ 5 hours, mm max	3	ASTM D 5329
Resilience, @ 25ºC, % min	40	ASTM D 5329
Softening Point, ºC min	82	ASTM D 36
Cleveland Open Cup (COC), ºF	410	ASTM D 92

907-515.02.2--Aggregate Properties. Bulking aggregate and final surface aggregate shall meet the following.

Bulking Aggregate. The single sized bulking aggregate shall be a crushed, double washed, and dried 1-inch Trap Rock - Basalt or granite, or approved equivalent.

Percent Passing	
1"	100
3/4"	5 - 15
1/2"	0 - 5
3/8"	0 - 1
No. 4	0 - 1

Final Surface Aggregate. The final surface aggregate shall be a crushed, double washed, and dried No. 4 Trap Rock – Basalt, granite or bauxite, or approved equivalent.

Percent Retained	
No. 4	9.8
No. 10	99.3

907-515.02.3--Warranty. The materials supplier and applicator shall warrant that the work performed and materials furnished shall perform for two (2) years from date of installation when installed by the materials supplier's certified applicator and installed to the manufacturers specifications.

907-515.03--Construction Requirements. The patching material installation will encompass the damaged/spalled areas as shown on the plans. Variations in depth and width of the repair area can be adjusted in the field by the Engineer.

The repair/replacement procedure will include the following:

1. All work will be performed by an applicator certified by the material supplier.
2. Remove all loose and damaged pavements. The repair area will be removed to a depth and width, which will allow the patching material to be properly seated and installed as shown on the plans.
3. A milling machine or jackhammer will be used to develop the depressed seat. If a jackhammer is used, the jackhammer size shall be approved by the Engineer prior to use and will perform the required removal of the existing material without further damage to surrounding pavement. Concrete and asphalt substrate faces must be thoroughly cleaned and dried using a hot-compressed air lance
4. For concrete pavement, the area will be primed using a primer determined by the manufacturer to prevent moisture intrusion.
5. The patching material shall be mixed and heated on site in a horizontal mixing unit equipped with electronically controlled thermostats. The bulking and final surface aggregates shall also be heated.
6. The patching material shall be applied to the area to be repaired. If the area to be repaired is deeper than 1½ inches, a bulking aggregate will be added at a minimum rate of 15% and maximum rate of 30% by volume as directed by the Engineer. When the repair extends deeper than 1½ inches, the heated repair material will be installed in layers and the heated bulking aggregates will be added to the repair material at the rate directed above.
7. The patching will be built in successive layers until level with the existing pavements.

8. A final coat of the heated patching material will be applied to level the repair area and will overlap the edges of the repair area approximately ½" to ensure a tight waterproof seal. The surface of the patch will then be dressed with heated surface aggregate.
9. The area will be swept and all debris removed from the site.

Traffic will be allowed over the material after it has cooled to the point that it does not permanently deform under pressure as directed by the Engineer and the patching material manufactures instructions.

907-515-04--Method of Measurement. Fiber reinforced polymer patching material will be measured by the pound of fiber reinforced patching material binder installed.

907-515.05--Basis of Payment. Fiber reinforced polymer patching material, measured as prescribed above, will be paid for at the unit price bid per pound, which price shall be full compensation for furnishing materials, including bulking and final surface aggregates, patching material binder, and primer; for heating and mixing; for removal/disposal of existing pavement material; placing and finishing; and for all labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

907-515-A: Fiber Reinforced Polymer Patching Material - per pound

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-632-1 **CODE: (IS)**

DATE: 11/15/2017

SUBJECT: Traffic Signal Cabinet Assemblies

Section 632, Traffic Signal Cabinet Assemblies, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

Delete Section 632 on pages 517 thru 538, and substitute the following.

SECTION 907-632 - TRAFFIC SIGNAL CABINET ASSEMBLIES

907-632.01--Description. This work consists of furnishing, assembling, configuring and installing all component materials and software required to form completed traffic signal controller assemblies, closed loop master controller assemblies and signal system installation of the types specified, in conformity with these specifications, to ensure fully operational traffic signal installations as shown on the plans.

907-632.02--Materials.

907-632.02.1--Cabinet Assembly. Cabinet Assemblies shall meet the NEMA 3R requirements and be constructed principally of 0.125-inch thick, 5052-H32 aluminum. The aluminum shall have a mill finish per NEMA TS 2 7.7.3. Intermittent welds may be used for construction and any un-welded cabinet seams shall be sealed with clear RTV silicone. All external fasteners shall be stainless steel and no holes will be allowed in top of cabinet.

The door handles shall be stainless steel or cast aluminum. Door hinges shall be of the continuous type with a stainless steel hinge pin. Rivets are not be used to attach the hinge. The main door stop rod shall be constructed using stainless steel. The door stop mechanism shall be adjustable and capable of being securely latched in multiple opened positions including 90 degrees and a maximum of 120 degrees. The brackets attaching the stop rod to the door and cabinet shall be aluminum and welded in place. The main door cylinder lock shall be a #2 key type lock. Two (2) traffic industry standard No. 2 keys shall be provided with each cabinet and shall be made using heavy duty key blanks.

Extruded aluminum channels permanently attached to the right and left cabinet sides shall be provided for attaching adjustable shelving and mounting of other component panels. The cabinet shall have two (2) shelves installed. Both shelves shall be provided with the front edge pre-drilled with 0.25-inch holes located twelve (12) inches apart.

907-632.02.2--Physical Features.

907-632.02.2.1--Pull Out Drawer. A pull out drawer shall be installed and centered under the

bottom shelf. The drawer shall be made of 0.080-inch thick, 5052-H32 aluminum and come out on full extension drawer slides. The pull out drawer shall provide an approximate 16-inch x 14-inch working area and have the ability to bear a constant 25 pound burden. There shall be a compartment for document storage. The lid shall be hinged at the rear, to gain access to the storage area. The drawer will be used to store documents as well as support a notebook computer. The drawer slides shall be of the full extension ball bearing type. Dimensions of the drawer shall be large enough to support a notebook computer and a drawer of sufficient size to hold at least two (2) copies of the cabinet drawings and other related cabinet documentation. The surface of the lid shall have a non-slip surface.

907-632.02.2.2--Cabinet Lighting. Cabinets shall be provided with a minimum of two (2) white light LED modules. One (1) lighting module shall be installed along the front top section of the cabinet and the second lighting module shall be installed underneath the bottom cabinet shelf in such a location as to provide direct lighting of the load bay area of the cabinet but must not interfere with the cabinet drawer operation.

Both LED lighting modules shall be controlled by a NEMA rated, commercial quality, pushbutton door switch. The cabinet lighting shall turn on when the cabinet main door is opened and shall turn off when the main door is closed or an ON/OFF NEMA rated, commercial quality, toggle switch mounted on the inside cabinet door service panel shall be provided to turn both LED lighting modules on or off.

907-632.02.2.3--Police Panel Switches. Police panel switches shall be provided with all controller cabinets. All switches shall be hard wired and labeled as to their function.

NORMAL-FLASH: When this switch is in the FLASH position, all signal indications shall transfer to the flashing mode. AC power shall be removed from the load switches when the signal indications transfer to the flashing mode.

The controller unit shall operate in accordance with appropriate specifications during the flashing mode. When the switch is placed in the NORMAL position, transfer from the flash mode to normal operation shall be made in accordance with uniform code flash requirements.

SIGNAL ON-OFF: AC power shall be removed from the signal heads and the intersection will become dark when this switch is in the OFF position.

MANUAL CONTROL ON-OFF: When this switch is in the ON position, a logic ground shall be applied to the manual control enable input of the controller unit.

INTERVAL ADVANCE INPUT JACK: A manual jack shall be installed on the police panel. The jack shall inter-mate with a 3-circuit, ¼-inch diameter phone plug. The tip and ring (middle) circuits of the jack shall be connected to the logic ground and the interval advance inputs of the controller unit. When the manual hand cord is plugged into the jack and the pushbutton is pressed, logic ground shall be connected to the interval advance input of the controller unit.

When specified in the contract documents, an interval advance cord shall be provided. The cord

shall have a minimum length of three (3) feet. It shall have a ¼-inch diameter, three circuit plug connected to one end and a manual pushbutton enclosed in a hand-held enclosure at the other end. A complete cycle (push-release) of the manual pushbutton shall terminate the controller unit interval which is active except the vehicular yellow and red clearance intervals. Cycling the push-button during the vehicular yellow or all red clearance intervals shall not terminate the timing of those intervals.

907-632.02.2.4--Service Panel Switches. Service panel switches shall be hard wired and clearly labeled to identify as to their functions. Service panel switches shall be mounted on the service panel located on the inside of the main cabinet door. Alternate switch locations may be described in the plans or contract documents but final switch design and location shall be approved by the Engineer prior to cabinet fabrication.

NORMAL-FLASH: When this switch is in the FLASH position, all signal indications shall transfer to the flashing mode. AC power shall be removed from the load switches when the signal indications transfer to the flashing mode.

The controller unit shall operate in accordance with appropriate specifications during the flashing mode. When the switch is placed in the NORMAL position transfer from the flash mode to normal operation shall be made in accordance with uniform code flash requirements.

CONTROLLER ON-OFF: When this switch is in the OFF position, AC power shall be removed from the controller. When this switch is returned to the ON position, the controller unit shall perform normal start up functions and resume normal operation in accordance with the applicable specification.

STOP TIME-RUN-NORMAL: A 3-position manual switch shall be provided which places the controller into Stop Time mode manually or through remote input.

VEHICLE DETECTORS: A 3-position switch shall be provided for each vehicle and pedestrian detector circuit. All switches shall be located on a panel mounted on the inside of the main cabinet door. The switch panel shall be labeled CALL SWITCH. Labeling of phase number and intended function (vehicles or pedestrian calls) shall be provided for each switch.

The vehicle detector switch functions are defined as follows:

Locked Call	Call is continually placed into the controller unit.
Off (center)	Vehicle detector is connected to the controller unit vehicle detector input, i.e. normal detector operation.
Momentary Call	Call is continuous as long as the switch is manually held in this position.

907-632.02.2.5--Police and Service Panel Locations. The police and service panels shall be constructed of 5052-H32 0.125-inch thick aluminum.

The police panel shall be located behind the police door which is enclosed within the main door.

The police door shall be hinged and provided with a neoprene gasket seal. Access to any portion or equipment contained behind the main cabinet door shall not be accessible through any part of the police panel. The police panel shall be of appropriate dimensions to accommodate all switch or devices described within this specification, the plans or contract document. The police door shall be provided with a treasury #2 key type lock and two (2) keys for the police door lock shall be provided with each cabinet.

The service panel shall be mounted on the inside portion of the main cabinet door, adjacent to the back side of the police panel or on the left hand side of the cabinet.

907-632.02.2.6--Cabinet Ventilation. Cabinets shall be vented to allow dissipation of the heat generated by the equipment contained within. All cabinets shall have a thermostatically controlled exhaust fan located at the top of the cabinet that is capable of 100 cubic feet per minute air displacement. The thermostat shall be mounted on the inside top of the cabinet and shall have a nominal temperature range from 80°F to 170°F.

The intake vent shall be louvered or equivalent design to prevent rain infiltration. The vent area will be located along the bottom portion of the cabinet door. A 16-inch x 12-inch x 1-inch disposable pleated air filter shall be provided on the inside portion of the cabinet and shall fully cover the vent area.

907-632.02.2.7--Air Filter Assembly. Air filters shall be one piece and shall be held firmly in place against the cabinet door in order to prevent dust from bypassing the perimeter of the filter and shall fully cover the vent area. Wing nuts or thumbscrews are preferred. Air filter shall be a 16-inch x 12-inch x 1-inch disposable pleated filter.

907-632.02.2.8--Cabinet Sizes.

907-632.02.2.8.1--Type I Cabinet. A Type I cabinet, 51"H x 30"W x 18"D, may be used for both pole and base mounted cabinets that require a maximum eight (8) position load bay. Pole mounted cabinets do not require rear access.

907-632.02.2.8.2--Type II Cabinet. A Type II cabinet, 51"H x 36"W x 18"D, may be used for both pole and base mounted cabinets that require a maximum twelve (12) position load bay. Pole mounted cabinets do not require rear access.

907-632.02.2.8.3--Type III Cabinet. A Type III cabinet, 56"H x 44"W x 27"D, shall be used for base mount installations and shall require a sixteen (16) position load bay and rear access door.

907-632.02.2.8.4--Type IV Cabinet. A Type IV dual chamber cabinet, 56"H x 57"W x 29"D, shall be used for base mount installations and shall require a sixteen (16) position load bay, rear access door, and external generator plug. When called for in the plans, a UPS shall be housed inside this cabinet.

907-632.02.2.8.5--Type V Cabinet. A Type V cabinet, 77"H x 44"W x 27"D, shall be used for base mount installations and shall require a sixteen (16) position load bay and rear access door.

907-632.02.3--Power Distribution Panel. The power panel shall be wired to provide the necessary power to all equipment. It shall be manufactured from 0.125-inch thick, 5052- H32 aluminum. The power panel shall house the following components: Main Breaker, Auxiliary Breakers, and Terminal Block. The panel shall be of such design so as to allow a technician to easily access the main and auxiliary breakers.

A 3-position terminal block with a removable insulated cover accepting up to AWG #4 stranded wire shall be supplied for accepting only the incoming power lines. This terminal block shall be in advance of and supply only the 30-amp main breaker, 10-amp and 5-amp Auxiliary breakers, AC neutral buss and earth ground buss.

907-632.02.3.1--Ground and Neutral Busbars. Cabinet grounding shall meet the requirements set forth in Subsection 722.09 for grounding and ground rods. A solid copper ground busbar shall be mounted on the side of the cabinet wall adjacent to the power panel for the connection of chassis ground wires. If more than one (1) ground busbar is used in a cabinet, a minimum of an AWG #6 copper wire shall be used to bond them.

The copper ground busbar shall have a minimum of thirteen (13) connector points, each capable of securing at least one (1) AWG #6 conductor.

A solid copper neutral busbar shall be mounted on the side of the cabinet wall adjacent to the power panel for the connection of AC neutral wires.

The copper neutral busbar shall have a minimum of thirteen (13) connector points, each capable of securing at least one (1) AWG #6 conductor.

907-632.02.3.2--Terminal Strips. Conductors shall be terminated on terminal strips with insulated terminal lugs. When two (2) or more conductors are terminated on field wiring terminal strip screws, a terminal ring lug shall be used for termination of those conductors. The voltage and current rating of terminal strips shall be greater than the voltage and current rating of the wire which is terminated on the terminal strip.

907-632.02.3.3--Cabinet Receptacles. A 3-wire 115 Volt AC (15A) Ground Fault Circuit Interrupt (GFCI) duplex receptacle shall be provided in the cabinet for maintenance use. It shall be securely mounted near the bottom right side of the cabinet and easily accessible.

Two (2) 3-wire 115 Volt AC (15A) non-GFCI protected outlets shall be installed, one on each side of the cabinet. These two (2) outlets are used for communication or other auxiliary equipment.

907-632.02.3.4--Operating Line Voltage. All equipment shall be designed to operate from a 120 volt, 60 cycle AC supply. Operation shall be satisfactory at voltages from 105 volts to 130 volts. All operating voltages into and out of the controller shall be NEMA level DC voltages except for the controller AC power source (Connector A, Pin p – AC-Control and Pin U – AC Common).

907-632.02.3.5--Circuit Breakers. Circuit breakers shall meet the requirements set forth in

Subsection 722.07. A 30-amp main breaker, with a minimum of 10,000 amp interrupting capacity, shall be provided for all cabinets to supply power to the controller, MMU, signals, and rack power supply.

Two (2) auxiliary breakers shall be provided. The first breaker, 10-amp, shall supply power to the fan, light, GFCI utility receptacle and two (2) auxiliary standard receptacles. The second breaker, 5-amp, shall be installed to supply power for the Controller Unit and MMU2. The above circuit breakers line side shall be jumpered together and will be fed from an external main circuit. A third 5-amp breaker shall be required if an ITS camera panel is called for in the plans.

907-632.02.3.6--Main Line Arrestors. Surge protection shall be provided that meets the requirements set forth in Subsection 722.12. A main line arrestor shall be provided to reduce the effects of voltage transients on the AC power line. It shall be installed after the circuit breaker. The main line arrestor shall be sufficient to protect all equipment and devices as per the plans and the following minimum specifications.

- Multi-stage Hybrid Design
- Series induction filtering
- Thermally protected Metal Oxide Varistors (TMOV's)
- Operating Voltage: 120 VAC
- Clamping Voltage: 395 VAC
- Operating Current: 15 A
- Peak Surge Current: 50 kA/Mode, 100 kA/Phase
- Operating Frequency: 47-63Hz
- EMI Attenuation: 40 dB Typ
- SPD Technology: TMOV's w/ W-C Filter
- Modes of Protection: L-N, L-G, N-G
- Status Indication: Power On & TMOV's Functional
- Connection Type: ¼-20 Stainless Steel Stud
- Operating Temperature: -40°F to +185°F

907-632.02.3.7--Solid State Main Line Relay (SSR). A normally-open, 75-amp, hybrid SSR shall be provided on the power distribution panel. The relay shall include a LED indicator to verify circuit power.

907-632.02.4--Terminal Facilities Board. The Terminal Facility shall be a hardwired load bay for NEMA TS 2 Type 1 actuated controllers. The load bay shall include either eight (8), twelve (12) or sixteen (16) load switch positions, as specified by the plans, and shall be centered along the back of the cabinet below the bottom shelf.

All wires terminated behind the backboard, as well as any additional panels, shall be soldered. No pressure or solderless connectors shall be used, unless they are soldered to the wire and tab after connection.

907-632.02.4.1--Load Switches and Flashers. Solid State Load Switches, compatible with low

wattage LED signals, shall be provided for the sequence called for on the plans. The load switch sockets shall be wired for triple-signal load switches conforming to NEMA TS 1-1994 and NEMA TS 2-2003 requirements.

The flasher socket shall be wired for and provided with a Type 3, two (2) circuit Solid State Flasher conforming to NEMA TS 1-1994 and NEMA TS 2-2003 requirements. It shall be possible to flash either the amber or red indication on any load switch outputs. It shall be possible to easily change the flash indication from the front side of the panel using readily available tools such as a screwdriver. A nominal flash rate of 50 to 60 FPM shall be provided. Flash rate shall be stable when used with generators or inverters.

Support(s) shall be provided to support the Flasher and Load Switches at some point approximately half of the total length from the panel surface. Sufficient area beneath the Load Switch or Flasher shall be clear in order to allow for free flow of air across the Load Switches or Flasher. Load Switches and Flashers must be provided with LED indicator lights on the side facing the cabinet door.

907-632.02.4.2--Flash Transfer Relay. All flash transfer relays, as a minimum, shall meet NEMA TS 1 requirements. The number of relays that shall be supplied with each cabinet shall accommodate the number of signal phases as indicated in the project plans. The coil of the flash transfer relay must be de-energized for flash operation.

907-632.02.5--Cabinet Wiring. Controller cabinets shall be wired in accordance with the signal phasing plans. If phases are indicated as omitted for future use, or if phases are not shown to be used in the plans, the cabinet shall be wired for use of the phases shown as future or unused. Load Switches shall not be provided for future or unused phases.

Wiring in the cabinets shall conform to the requirements of the National Electrical Code (NEC) and all of these specifications. All conductors in the cabinet shall be stranded copper. All wiring shall be laced. All wiring shall be in accordance as specified by Section 636 and Subsection 722.03 for Electric Cable and IMSA Specification 19 and/or 20 for Signal Wiring.

Connector harnesses for controller, conflict monitor, vehicle detectors, and accessory equipment (including NEMA defined Card Rack with power supply and pre-wired optical detection slots) shall be provided and wired into the cabinet circuitry. Connecting cables for controller and conflict monitor harnesses shall be sleeved in a braided mesh. All wires shall be securely terminated on terminal strips. The lay of the interconnect cable between the components must be such that when the door is closed, it does not press against the cables or force the cables against the various components inside the cabinets.

All communication wiring shall be bundled and routed independently of all other wiring. All live conductors shall be covered with suitable insulating material. All equipment grounds shall run directly and independently to the grounding bus.

All wires shall be cut and terminated as close as possible to the proper length before assembly. Consideration of equipment location adjustments must be made when determining appropriate

wire lengths. Excessive lengths of wire or cable shall not be allowed. All line voltage conductors used in controller cabinet shall conform to the following color code:

AC Neutral: White
AC Hot: Black
Safety Ground: Green

907-632.02.5.1--Signal Terminal Arrestor Grounding Bar. A field terminal arrestor grounding bar shall be provided along the back portion of the cabinet for the installation of signal arrestors. This bar shall be attached using an AWG #10 stranded copper to the earth ground circuitry.

907-632.02.5.2--Signal Terminal Arrestors. The field terminal arrestor shall be a three (3) circuit protective device intended for use on traffic control load relay outputs. The arrestor shall be furnished with three (3) leads and a grounding stud which will be used to attach the arrestor to the grounding bar. The field terminal arrestor shall meet the following minimum specifications:

- Operating Voltage: 120 VAC
- Clamping Voltage: 475 VAC
- Peak Surge Current: 10 kA
- Operating Frequency: 47 – 63 Hz
- SPD Technology: MOV's
- Connection Type: Wire Leads
- Lead Wire: 14 AWG 12" Length
- Ground Stud: 10 x 32 5/8" Length
- Operating Temperature: -40°F to +185°F

907-632.02.6--Accessory Components.

907-632.02.6.1--Traffic Actuated Controller Unit. The fully actuated controller unit shall, at a minimum, meet the requirements of both NEMA TS 1–1989 and NEMA TS 2-2003 requirements for actuated controller units. The controller shall be of the TS 2 Type 2 configuration. The controller shall be provided with the multiple communication interface devices or properties as defined below.

- 10 Base-T Ethernet with front panel RJ-45 connector
- IEEE defined MAC address
- EIA-232 port
- External Serial Fiber options for both single and multi-mode (optional as per plans)
- External FSK 1200 bps modem (optional as per plans)
- D connector with 37 pin configuration for TS 1 compatibility
- USB port for signal controller database upload/download to the controller flash
- Controller
- ECOMM Compatible

The controller unit must have an alphanumeric backlit LCD display with a minimum of sixteen

(16) lines at 40 characters per line. The controller must be air-cooled with sufficient ventilation openings and capable of operating between -30°F and 165°F. The controller unit must be provided with a time-of-day clock, automatic daylight savings time adjustment and a power supply for maintaining SRAM during a power outage. The controller unit shall be capable of being used in a Closed-Loop System and must be capable of operating in the role of master controller in a Closed Loop System. The controller unit firmware shall be fully compatible with the Department's existing Traffic Signal Management Software. The Contractor shall ensure all controller firmware versions are compatible with the existing Traffic Signal Management Software that the Regional Department staff currently utilizes prior to submitting the controller for approval. The Contractor shall notify the Department if any special controller configuration or firmware is needed prior to submitting the controller for approval based on project requirements.

Where Flashing Yellow Arrow (FYA) operations are being used, all traffic signal controller firmware shall be capable of delaying the onset of the flashing yellow arrow.

All operator entered data shall be stored and backed up on to a flash memory device provided with the controller unit at no cost. This flash memory device shall require no battery to support value storage. No internal components of circuitry shall require battery support. The database shall be able to be backed up to a USB drive via the USB drive on the controller.

Traffic Actuated Controllers shall be of the Type shown on the plans. Type 1 Controllers shall have a Linux based processor and a minimum of one (1) USB port. Type 2 Controllers shall have the same features as Type 1 Controllers with the addition of an ATC backplane.

Type 3 Controllers shall have all features of the Type 2 Controller with the addition of the ATC module. All three (3) types of actuated controllers shall have Master controller capability, and if required shall be designated with 'M' in the plans.

907-632.02.6.2--Closed Loop Master Controller Unit. When called for in the plans, this work also consists of furnishing, installing and configuring the equipment, software and accessories necessary to connect one (1) traffic Closed-Loop Master Controller to its corresponding central or portable PC-based Traffic Computer Facility Control System via a communications connection. The communications or network connection device will be either existing or provided by the Contractor.

907-632.02.6.2.1--General. The Master shall monitor intersections in the system, display status and operational state and provide traffic flow data from intersection vehicle detectors. The Master shall include all communications equipment and software necessary to provide reporting to a remote terminal as well as upload/download of all local intersection data and provide timing synchronization. Communications to local controllers from the Master and from the Master to the central-office computer facility shall be by FSK, 900 MHz Radio, Broadband Radio, Serial Fiber, Ethernet, Fiber, Cell Modem or Leased Line, as indicated in the plans. The Master shall be able to run on the same controller simultaneously operating the intersection, with the local signal control software, on any given controller unit.

907-632.02.6.2.2--System Configuration. The system architecture shall be designed to minimize

the effect of equipment failures on system operation and performance. The system consists of four (4) principal elements:

- Local System Intersection Controllers
- Communication (Telemetry Links)
- On-Street Master(s)
- Central-Office Computer Software

907-632.02.6.2.3--Local System Intersection Controller. The local system intersection controllers connected to the Master controller unit shall be capable of controlling a fully actuated two (2) to sixteen (16) phase intersection and shall meet or exceed NEMA TS 1-1989 and TS 2-2003 standards for fully actuated traffic control units. The local controller shall have internal communication capability with direct access to the data memory. The local system controller shall be capable of processing controller and detector data and provide all necessary intersection control functions. The local system intersection controller shall meet the requirements of the Traffic Actuated Controller Unit.

907-632.02.6.2.4--Communications (Telemetry) Links. The communications links for the "Closed-Loop" System shall perform the following functions:

- Provide the medium (radio/fiber/hardwire/etc.) for two-way communications between the On-Street Master and the local intersection controllers.
- Provide the medium for two-way communication between the On-Street Master and the central-office computer facility.
- Error checking shall be included in both mediums to assure transmission and reception of valid data.

907-632.02.6.2.5--On-Street Master. The On-Street Master may be located at an intersection and connected via the communication network to at least 32 local intersection controllers. The Master shall be capable of implementing Traffic Responsive Control, Time Base Control, Manual Control or Remote Control modes of operation.

Analysis of sampling sensor data from at least 64 system detectors and corresponding selection of the best Traffic Responsive timing pattern shall be provided by the On-Street Master during the Traffic Responsive mode of operation.

Automatic and continuous monitoring of system activity shall be provided by the On-Street Master to include both Master and intersection alarm conditions.

System parameter entry shall be provided via the On-Street Master including all Master and local intersection assignment and group parameters. Master parameters shall include:

- System coordination setup and pattern data entry by group
- System time base event scheduler
- System traffic responsive computational and pattern selection setup by group
- Intersection system group and detector assignments

The On-Street Master shall provide comprehensive system report generation including, as a minimum: system, intersection, detector and failure status and history reports in addition to system performance reporting.

A RS-232C interface shall be provided on the On-Street Master to allow for printing of reports or for interconnecting to a remote central site.

To enhance overall system operation and increase system management flexibility, the On- Street Master shall also support two-way dial-up communications to a central office computer for control, monitoring, data collection and for timing pattern updating purposes, all from a remote central office location. Continuous, seven (7) days/week - 24 hours/day, system monitoring shall be enhanced by the On-Street Master's capability to automatically dial-up the central office computer upon detection of user defined critical alarm conditions.

907-632.02.6.2.6--System Functional Requirements.

907-632.02.6.2.6.1--Operator Interface. In order to provide ease in programming and operation, the system shall provide a simplified user-friendly menu format at each local, master and central office facility. No special programming skills shall be required for the user to fully access and operate this control and monitoring system at any level.

All programming, both of the local intersection controllers and the On-Street Master(s) shall be via a front panel keyboard and display, driven by English Language menus. All data change entries will be automatically verified against established ranges prior to acceptance to prevent programming data errors. Data access shall be controlled by user- definable access controls.

907-632.02.6.2.6.2--System Traffic Control. The system shall have the capability of controlling a minimum of sixteen (16) vehicle phases and eight (8) pedestrian phases. The system shall have the capability of implementing a minimum of four (4) timing rings, fifteen (15) alternate sequences, and sixteen (16) offsets.

The system shall provide the capability of selecting any of the following operational modes on a group basis:

- Traffic Responsive
- Time Base (Time-of-Day/Day-of-Week)
- Remote (External Command)
- Manual (Operator Entry)

The system shall be capable of implementing system FLASH and system FREE operation. The system shall have the capability to command, on/off based on time, up to eight (8) independent special functions.

907-632.02.6.2.6.3--Detectors. The system shall have the capability of accepting and processing data from at least 632 system detectors for Traffic Responsive program selection.

907-632.02.6.2.6.4--Pattern Selection. In addition to providing Manual and Remote program selection capability, the Master shall provide for Traffic Responsive and Time Base modes of operation for timing pattern selection.

907-632.02.6.2.6.4.1--Traffic Responsive Mode. Traffic plan selection in the Traffic Responsive mode shall be user-enabled and supplied with the controller, per the plans and specifications. The pattern selection shall be based on sampling detector volume and occupancy analysis by the On-Street Master.

907-632.02.6.2.6.4.2--Time Base Mode. The system shall provide the capability of implementing time-of-day, day-of-week and week-of-year control for each of the two (2) groups using an internal time clock referenced to the 60-Hz AC power line frequency for its time base. The Time Base mode shall contain automatic adjustment for leap year and daylight savings time changes.

The system Time Base mode shall provide, as a minimum, 100 events each capable of requesting any of the 48 traffic control patterns along with Traffic Responsive override enable or auxiliary events consisting of enable/disable any of up to four (4) system-wide special functions and setting sample and log interval time periods.

907-632.02.6.2.6.5--System Control Priority. The system coordination control (program-in-effect) for each group shall be selected on a priority basis. The priority from highest to lowest shall be as follows:

- Manual Control Entry
- External Control (Remote Command)
- Time Base Control (Time-of-Day/Day-of-Week) (Traffic Responsive control will prevail whenever Traffic Responsive Override Enable is active and the selected cycle length is greater than that being commanded by Time Base)
- Traffic Responsive Control

907-632.02.6.2.6.6--Measures of Effectiveness. The system shall have the capability to report selected Measures of Effectiveness (MOE's) on an intersection basis. MOE calculations shall be made on all phases by the local system intersection controller and as a minimum shall include measures such as: volume, number of stops, delays and green utilization. These measures shall be calculated on the basis of the active timing plan. Alternate ways of reporting MOE'S may be approved on a case-by-case review.

907-632.02.6.2.6.7--Uploading and Downloading. The system shall provide, for any selected local system intersection controller, the capability of uploading and downloading any or all, new or modified local intersection parameters from the central-office computer and the Department Central Traffic Signal Management Software, and shall include, as a minimum, all: Phase Timing and Unit Data; Coordination Data, Time Base Data; Preemption Data, System Communication Parameters, System Traffic Responsive Data, and any other System Data residing at the intersection such as Detector Diagnostic Values, Report Parameters and Speed Parameters.

During either uploading or downloading operations, normal traffic control operations shall not be suspended. All data shall be continually accessible and may be displayed at the On- Street Master or the central office computer.

907-632.02.6.2.6.8--System Monitoring and Diagnostics. The system shall automatically and continually monitor system activity and log/report occurrences of Master and intersection alarm conditions. All alarm condition events shall include at the intersection, (Master and central-office computer) an alpha-numeric description of the event as well as the time and date of occurrence.

As a minimum, monitored master alarms conditions shall include:

- Insufficient or Improper Data
- Failed Computational Channels
- Failed System Detectors
- Intersection Communication Failure
- Failed Controllers
- Minimum of six (6) special user defined alarms for user application flexibility
- Monitored intersection alarms conditions shall include as a minimum:
- Cycle Faults and Failures
- Coordination Failures
- Voltage Monitor
- Conflict, Local and Remote Flash Conditions
- Preempt
- Local Free
- Minimum of six (6) special user defined alarms for additional user flexibility.

When the Master detects a critical alarm condition, as defined by the user, it shall automatically dial-up the central office computer and report the condition. On a BUSY or NO ANSWER, the system may be programmed, at user option, to alert a secondary computer.

The system shall also automatically and continually monitor, verify and attempt to correct Sync Pulse, Time Base Clock and Pattern-In-Effect. The system shall provide capabilities to perform diagnostics on system and local detectors, communications and intersection operations. When a fault has been detected, an indication shall be provided. It shall be possible to isolate the fault to the failed unit from controls and indicators available on the Master unit. Auxiliary equipment such as a data terminal or CRT shall not be required to identify the failure.

907-632.02.6.2.6.9--Real Time Display. The Master shall provide for any selected local system intersection controller, real-time status information on its front panel. Real-time intersection status information shall include simultaneous display of: vehicle and pedestrian signal and detector status by phase, overlap signal status and cars waiting count by phase. Real-time controller status information shall include simultaneous display of: two (2) Ring Active timers, On/Next, Call/Recall and Hold/Omit Status by phase, Coordination, Preempt and Stop Time Status.

907-632.02.6.2.6.10--System Management. The system, without hardware changes but with its

ability to directly modify Master and intersection parameters, shall provide the user system configuration and operational controls of the following functions: add/delete controllers and system detectors, enable Traffic Responsive mode, assign intersections to groups, assign system detectors to computational channels and channels to pattern select routines, and assign special and/or standard detectors as system detectors for use with computational channels or to track activity.

907-632.02.6.2.6.11--System Logging and Reports. The system shall automatically and continually process system data and log/report on occurrence of changes in intersection status, system detector status, communications status, controller status and local detector status in addition to system program changes, Traffic Responsive computations, measures of effectiveness and performance.

907-632.02.6.2.6.12--Security. The On-Street Master shall provide for a user-specified security code entry before any data may be altered. In order to view any parameter, security code entry shall not be required. Security access shall be automatically rescinded approximately ten (10) minutes after either access was gained or the last parameter change was entered. The Master and local controller shall have the ability via keyboard to disable security code requirements, allowing for perpetual access without requiring hardware changes.

907-632.02.6.2.7--Design Characteristics. The On-Street Master shall be designed to operate in either an office or field environment and shall be suitably housed in a separate enclosure or in a local intersection cabinet. The Master shall be designed to meet the following electrical and mechanical requirements:

907-632.02.6.2.7.1--Programming and Security. Operator programmable data entry shall be accomplished through panel keyboard(s). The Master shall prevent the alteration of keyboard set variables prior to the user having entered a specific access code through the keyboard. The Master shall maintain user-programmable variables in non-volatile memory with a battery-backed RAM to assure continued efficient system operation.

907-632.02.6.2.7.2--Test and Repair. To enhance maintenance and trouble-shooting activities, On-Street Masters shall include resident diagnostics as a standard. No extender- cards, special tools or PROMs shall be necessary to fully maintain these components. The Master unit design shall ensure that all printed circuit boards be readily accessible for maintenance testing purposes. All fuses, connectors and controls shall be accessible from the front of the Master unit.

907-632.02.6.2.8--Traffic Signal System Software. All Traffic Signal System Software shall be compatible with the latest version of the Department's existing Master and local controllers and existing Traffic Signal Management Software for the Department region.

907-632.02.6.2.8.1--Traffic Signal Closed Loop Software. The Traffic Signal Closed-Loop Software shall provide the ability to manage Master and local controller databases including the uploading and downloading of data parameters. The software shall provide status information and provide reporting capabilities for Master and local controller data, alarms and logs.

907-632.02.6.2.8.2--Traffic Signal System Workstation Software. The Traffic Signal System Workstation shall provide the ability to manage Master and local controller databases including the uploading and downloading of data parameters. The software shall provide status information and provide reporting capabilities for Master and local controller data, alarms and logs.

The Traffic Signal System Workstation Software shall also be capable of operating as a network-connected user workstation to existing centralized signal systems and their associated databases.

When disconnected from the centralized signal system, the software shall be capable of running as a standalone system similar to the Closed-Loop Software. Under this mode, the software shall provide management, report and status functions for Master and local controllers. Under Standalone Mode of operation the software shall allow for its own database(s) for data management without the need for connecting to a centralized signal system database.

907-632.02.6.2.9--Services. Technical services shall be provided, as required, to assist in installation and initial setup of the Closed-Loop Master System and its sub-components. Technical assistance with database migration and/or setup, as well as the development of graphics (such as master maps and local intersection depictions) and the assignment of associated attributes such as detectors, phasing, signals, etc., shall be provided as required. Additionally, training shall be provided on a basic or advanced target user level, as required.

907-632.02.6.3--Malfunction Management Unit (MMU2). The Malfunction Management Unit (MMU2) shall be a shelf-mountable, sixteen (16) channel, solid-state, IP addressable MMU. The MMU2 shall accomplish the detection of, and response to, improper and conflicting signals and improper operating voltages in a traffic signal controller assembly, including support for four (4) section Flashing Yellow Arrow (FYA) left turn displays. The MMU2 shall be capable of running a minimum of twelve (12) different modes of FYA operation.

The MMU2 shall meet or exceed Section 4 requirements of the NEMA Standards Publication No. TS 2-2003 including NEMA TS 2 Amendment #4-2012 and provide downward compatibility to NEMA Standards Publication No. TS 1-1989: Type 12 Operation, in addition to those specifications set forth in this document.

The MMU2 shall include a graphics based Liquid Crystal Display (LCD) to view the current monitor status and navigate the unit's menus. An RJ-45 Ethernet Port shall be provided for communications.

A built-in Diagnostic Wizard shall be provided that displays detailed diagnostic information regarding the fault being analyzed. This mode shall provide a concise view of the signal states involved in the fault, pinpoint faulty signal inputs and provide guidance on how the technician should isolate the cause of the malfunction. The Diagnostic Wizard shall be automatically invoked when the MMU2 is in the fault mode and the HELP button is pressed. It shall also be automatically invoked when the MMU2 is in the Previous Fail (PF) event log display and the HELP button is pressed.

A built-in Setup Mode shall be provided that automatically configures the Dual Indication Enable, Field Check Enable, Red Fail Enable and Minimum Yellow Plus Red Clearance Enable parameters from user input consisting only of channel assignment and class (vehicle, ped, pp-turn, FYA, etc.) responses.

The MMU2 shall be capable of operating in the Type 12 mode with SDLC communications enabled on Port 1. The Channel Status display shall operate in the Type 12 configuration and provide the Field Check function for up to four (4) Pedestrian Walk inputs.

In the interest of reliability and repair ability, printed circuit board mounted MS connectors shall not be acceptable. Internal MS harness wire shall be a minimum of nineteen (19) strand AWG 22 wire.

907-632.02.6.4--NEMA defined Card Rack and Power Supply. A minimum of one (1) NEMA compliant detector card rack with five (5) slot positions (first slot for power supply and four (4) available slots) shall be provided in each cabinet. The detector rack shall be installed on the bottom shelf of the cabinet. The power supply for the NEMA defined card slots shall be provided as a 175W minimum with four (4) independent regulated channels of 24 VDC each rated at 0.75 amps over the full NEMA operating temperature range of -30°F to +165°F. The output should be regulated to 24 VDC +/- 15%. Each of the four (4) outputs shall be independently fused, each with a separate LED for displaying output and fuse status for each of the four (4) outputs. Each of the four (4) outputs shall be protected against voltage transients by a minimum 1500 watt suppressor. All card racks shall be wired for the type detection shown in the plan sheets.

Card Guides shall be provided on the top and bottom of the card rack for each connector position.

907-632.02.6.5--In-Cabinet Network.

907-632.02.6.5.1--Communications Arrestor. The Controller Cabinet network shall consist of an SDLC connection between the Controller Unit and MMU2. Surge suppression for this network shall meet the requirements set forth in Subsection 722.12 and the following minimum requirements below:

- Operating Voltage: 5 VDC
- Clamping Voltage: 8 VDC
- Operating Current: 1.5 A
- Peak Surge Current: 47 A (10x1000 μs)
- Frequency Range: 0 to 20 MHz
- Insertion Loss: < 0.1 dB at 20 MHz
- SPD Technology: SAD
- Connection Type: DB-15
- Operating Temperature: -40°F to +185°F

907-632.02.6.6--System Communications.

907-632.02.6.6.1--Traffic Signal Ethernet Switch. When specified in the plans or contract

documents, a traffic signal Ethernet switch shall be installed in the cabinet assembly. It shall meet the requirements for the type specified in Section 907-663. Ethernet patch cables of sufficient length shall be provided for all supplied Ethernet ready cabinet components. The switch and all components shall be connected and configured.

907-632.02.6.6.2--Fiber Optic Patch Panel. When specified in the plans or contract documents, fiber optic attenuator patch cords shall be installed in the cabinet assembly as specified in Section 907-661.

907-632.02.6.6.3--Wireless Communications. When specified in the plans or contract documents, wireless communication components shall be installed in the cabinet assembly and shall be as specified in Section 907-662.

907-632.02.6.6.4--Serial Port Server or Terminal Server. When specified in the plans or contract documents, serial port servers shall be installed in the cabinet assembly and shall be as specified in Subsection 907-663.02.2.

907-632.02.6.6.5--GPS Clock. This work includes furnishing a Global Positioning System (GPS) Synchronization clock that can be used to sync the internal clocks in traffic signal controllers when coordination is desired, but communication is not necessary. The GPS Clock System shall provide GPS based time and date synchronization to provide coordination of traffic controllers to a common time base. The system shall process GPS Time data using a tamper/vandal resistant GPS antenna and correct for Time Zone, Daylight Savings Time, Leap Years, and GPS Leap Seconds. The processed time information shall be sent to the traffic controller in the native format for the respective controller. A contact closure synchronization pulse with variable pulse width shall be available for a once per day update. If the GPS antenna is blocked for up to one (1) hour prior to scheduled time of synchronization, the system shall synchronize the traffic controllers with less than 0.4 seconds variance from the accuracy provided under normal operation with GPS satellites in view.

- The GPS Clock shall also meet the following minimum specifications:
- Input Voltage: 9-24 VDC
- Current Draw: 150 mA (max) at 12 VDC: 125 mA (max) at 24 VDC
- Contact Closure: 750 mA at 30 VDC
- Temperature Rating: -29.4°F to +167°F

GPS unit shall be mounted to the traffic signal controller cabinet as per the manufacturer's recommendation. Any and all holes created in the cabinet for the purpose of mounting the GPS unit shall be sealed to the satisfaction of the Engineer at no direct pay.

907-632.02.6.6.6--Power-Over-Ethernet Arrestor. Surge suppression that meets the requirements set forth in Subsection 722.12 shall be provided. In addition, the following minimum specifications shall be supplied for loads that require Power-Over-Ethernet with isolated shielded or non-shielded cable:

- Operating Voltage: 48 VDC
- Clamping Voltage: 68 VDC
- Operating Current: 0.75 A per Pin Continuous
- Peak Surge Current: 10 kA
- Insertion Loss: < 0.1 dB
- SPD Technology: GDT, SAD, with series PTC
- Modes of Protection: All Lines (1-8) Protected (L-L) and (L-G): Signal High- Low; High-Ground; Low-Ground
- Transmission Speeds: 10BaseT; 100BaseT; 1000BaseT
- Connection Type: RJ-45
- Operating Temperature: -40°F to +185°F

907-632.02.7--Detector Panel. A vehicle detector harness shall be provided to connect the detector panel to the card rack. The detector panel shall accept the connection of sixteen (16) field loop inputs and four (4) pedestrian detector inputs.

907-632.02.7.1--Detector Input Arrestors. Field Loop and Pedestrian input arrestors shall meet the requirements set forth in Subsection 722.12. Field loop arrestors shall have differential and common mode protection and be provided with the following minimum specifications:

- Operating Voltage: 75 VDC
- Clamping Voltage: 130 VDC
- Peak Surge Current: 250 A
- SPD Technology: Silicon Break-Over
- Operating Temperature: -40°F to +185°F

Pedestrian input arrestors shall be a four (4) circuit device provided with the following minimum specifications:

- Operating Voltage: 30 VDC
- Clamping Voltage: 36 VDC
- Operating Current: 0.15 A
- Peak Surge Current: 10 kA (8 x 20 μs)
- Frequency Range: 0 to 20 MHz
- Insertion Loss: < 0.1 dB at 20 MHz
- SPD Technology: GDT, SAD, with Series PTC
- Connection Type: Terminal Block with compression lugs; Terminals accept up to
- 10 AWG
- Operating Temperature: -40°F to +185°F

907-632.02.8--System Detectors. The controller shall have the ability to receive input data from up to eight (8) special system detectors in addition to the normal actuated controller unit phase detectors. The user shall have the option to assign any of the phase detectors as "system detectors".

907-632.02.9--Preemption. The cabinet shall be completely wired to accept and service calls from preemption phase selector modules, associated optical detector units and GPS units. Optical detector units and GPS unit cabinet components shall be as specified in Section 639. Provision for two (2) standard card modules shall be accommodated in a separate card rack for preemption. The preemption card rack shall provide a minimum of eight (8) channels.

Provisions shall also be made in the cabinet to accommodate Railroad Preemption when specified in the plans or contract documents. Railroad Preemption shall meet the requirements set forth in Section 639. While it is not necessary that a Railroad Preemption interface board be provided with the cabinet, the cabinet and back panel shall be designed so that a Railroad Preemption interface panel that uses a relay to isolate the track switch from the controller cabinet circuitry can be installed. Preempt 1 and 2, in the case of gate down preemption, shall be reserved for Railroad Preemptions; all subsequent preemptions shall be reserved for Emergency Vehicle, Fire Station, or Police Preemption.

907-632.02.10--Uninterruptable Power Supply. When specified in the plans or contract documents an Uninterruptable Power Supply (UPS) System shall be installed in the cabinet assembly. The UPS shall be installed in the cabinet and meet the requirements set forth in Section 633.

907-632.02.11--Power Service Pedestal. A Power Service Pedestal shall be provided as described in Section 631.03.2.

907-632.03--Construction Requirements.

907-632.03.1--Mounting. Traffic Signal Cabinet Assemblies shall be wall or pole mounted, base mounted on a concrete cabinet pad, or base mounted using a composite enclosure as specified below and as shown in the plans.

Power Service Pedestal shall be base mounted on a concrete cabinet pad or on a composite enclosure as specified below and as shown in the plans.

907-632.03.1.1--Wall or Pole Mounted. Wall or pole mount hardware shall be provided for mounting cabinets in specific installations as indicated in the design plans. Wall or pole mounted cabinets shall be manufactured with rigid tabs, rigid brackets or other acceptable configuration for attachment of the cabinet to the wall or pole support. Rigid attachment devices must allow for field alignment of cabinet to the wall or pole support.

907-632.03.1.2--Concrete Cabinet Pad. Concrete foundations shall be constructed of Class B concrete in specific installations as indicated in the design plans.

Cabinets for installation on a concrete base shall be manufactured with rigid tabs, rigid brackets or other acceptable configuration for attachment of the cabinet bottom to its flat support structure. Rigid attachment devices must allow for field alignment of cabinet with the support base. Concrete base construction details shall be provided in the design plan drawings.

907-632.03.1.3--Composite Enclosure. Cabinets for installation on a composite enclosure base shall be manufactured with rigid tabs, rigid brackets or other acceptable configuration for attachment of the cabinet bottom to its' flat support structure. Rigid attachment devices must allow for field alignment of cabinet with the composite enclosure. Composite enclosure attachment details shall be provided as shown in the plans.

907-632.03.2--Documentation. Documentation packages shall be delivered for each unit at the same time as the equipment to which it pertains.

A minimum of two (2) sets of complete schematic drawings and equipment documentation shall be supplied with each cabinet. The first copy shall be placed in a clear re-sealable print pouch of sufficient size to accommodate one (1) complete set of folded cabinet prints and placed in the pull-out drawer of the cabinet and the second copy shall be provided to the Department. Comprehensive controller data shall be included as part of the cabinet documentation package and shall be placed in the cabinet drawer pouch. Digital copies of all cabinet documentation shall be provided to the Department before final acceptance.

The documentation packages shall contain a schematic wiring diagram of the controller cabinet assembly and all auxiliary equipment. The schematic wiring diagram, including a symbols legend, shall show in detail all integrated circuits, transistors, resistors, capacitors, inductors as well as switches and indicators. All parts shown shall be easily identified on both in the cabinet and on the schematic diagram. Model numbers shall be used on schematic diagram when available.

A complete physical description of the signal cabinet assembly shall be provided to include at least the physical dimensions of the unit, weight, temperature ratings, voltage requirements, power requirements, material of construction, and complete performance specifications.

A complete set of operation guides, user manuals, and performance specifications shall be provided.

Detailed programming instructions, preventative maintenance requirements, and troubleshooting procedures shall also be provided for the controllers. These documents shall fully cover all programming procedures and programmable options capable of being made to the controllers and associated traffic control equipment. Instructions for modifications within the range of the capabilities of the unit such as changes in phases or sequences and programming matrix boards shall be included.

An intersection diagram shall be provided on the cabinet door showing geometric configuration, lane use assignments, controller cabinet and signal pole locations, vehicle and pedestrian signal head locations, vehicle and pedestrian detector zone locations, ring-barrier phasing diagram, and detector channel assignments. The intersection diagram shall be labeled with, at a minimum, a North Arrow, main street name(s), side street name(s), signal pole numbers, vehicle and pedestrian head type(s), detector zone designations, volume density and phase recall requirements, flash sequence. All field wires within the cabinet shall be labeled to coincide with those shown on the intersection diagram.

907-632.04--Method of Measurement. Traffic Signal Cabinet Assembly will be measured as a unit per each.

Remove and Replace Existing Traffic Signal Cabinet Assembly will be measured as unit per each.

Modify Existing Traffic Signal Cabinet will be measured as a unit per each.

Solid State Traffic Actuated Controller, of the type specified in the project plans, will be measured as a unit per each.

Signal Software License, of the type specified in the project plans, will be measured as a unit per each.

Malfunction Management Unit, of the type specified in the project plans, will be measured as a unit per each.

Card Rack, of the type specified in the project plans, will be measured as a unit per each.

GPS Clock, as specified in the project plans, will be measured as a unit per each.

Power Service Pedestal, as specified in the project plans, will be measured as a unit per each.

All pay items shall be inclusive of all materials, work, system integration, testing and incidentals necessary for a complete and operable unit in place and accepted. All removal, turn on, and acceptance of equipment, devices, traffic signals, and traffic signal assemblies shall follow Section 631 - Traffic Signal Systems-General prior to payment.

907-632.05--Basis of Payment. Traffic Signal Cabinet Assembly, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for furnishing, installing, configuring, wiring, testing, and mounting foundation construction, cabinets, relays, terminals, circuit breakers, modules, coordination and time base control programs, connectors wiring, overlap equipment, load switches, power cables, power supplies, controller mechanism and housing, MMU2, mounting material, all other materials, and all equipment, labor, tools, and incidentals necessary to complete the work.

Remove and Replace Existing Traffic Signal Cabinet Assembly, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for furnishing, installing, configuring, wiring, testing, cabinets, relays, terminals, circuit breakers, modules, coordination and time base control programs, connectors wiring, overlap equipment, load switches, power cables, power supplies, controller mechanism and housing, MMU2, mounting material, all other materials, removal, disposal, transfer, storage, and/or resetting of components that are existing, all other components included in the traffic signal cabinet, and all equipment, labor, tools, and incidentals necessary to complete the work.

Modify Existing Traffic Signal Cabinet, measured as prescribed above, will be paid for at the

contract unit price per each, which price shall be full compensation for furnishing, installing, configuring, and mounting all components, wiring, and devices; rewiring, reconfiguring, removal, disposal, transfer, storage, and/or resetting of existing components and devices, installing or changing coordination and time base control programs in the traffic signal cabinet assemblies, testing, final cleanup, all equipment, labor, tools, and incidentals necessary to complete the work.

Solid State Traffic Actuated Controller, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for all labor, equipment, tools, materials inclusive of the controller mechanism(s) and housing(s), all power cables, power supplies, wiring, factory and manufacturing inspection, attachment hardware, testing, storage, packaging, shipping, warranty, and all work, equipment, and appurtenances, and all incidentals necessary to provide a fully functional traffic controller ready for use. It shall also include all documentation including operations and maintenance manuals and other material necessary to document the operation of the traffic controller.

Signal Software Licenses, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for all labor, equipment, tools, materials inclusive of furnishing, installing and configuring the Signal Software, all power cables, power supplies, wiring, factory and manufacturing inspection, testing, storage, packaging, shipping, warranty, appurtenances, and all incidentals necessary to provide fully functional Signal Software ready for use. It shall also include all documentation including operations and maintenance manuals and other material necessary to document the operation of the Signal Software.

Malfunction Management Unit, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for all labor, equipment, tools, materials inclusive of furnishing, installing and configuring the Malfunction Management Unit (MMU2), all power cables, power supplies, wiring, attachment hardware, factory and manufacturing inspection, testing, storage, packaging, shipping, warranty, and all work, equipment, and appurtenances, and all incidentals necessary to provide a fully functional Malfunction Management Unit (MMU2) ready for use. It shall also include all documentation including operations and maintenance manuals and other material necessary to document the operation of the Malfunction Management Unit (MMU2).

Card Rack, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for all labor, equipment, tools, materials inclusive of furnishing, installing and configuring the Card Rack, all power cables, power supplies, wiring, attachment hardware, factory and manufacturing inspection, testing, storage, packaging, shipping, warranty, and all work, equipment, and appurtenances, and all incidentals necessary to provide a fully functional Card Rack ready for use. It shall also include all documentation including operations and maintenance manuals and other material necessary to document the operation of the Card Rack.

GPS Clock, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for all labor, equipment, tools, materials inclusive of furnishing, installing and configuring the Global

Positioning System (GPS) Clock(s), all power cables, power supplies, wiring, attachment hardware, factory and manufacturing inspection, testing, storage, packaging, shipping, warranty, and all incidentals necessary to provide a fully functional GPS Clock ready for use. It shall also include all documentation including operations and maintenance manuals and other material necessary to document the operation of the GPS Clock.

Power Service Pedestal, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for furnishing, installing, configuring, wiring, testing, and mounting foundation construction, cabinets, circuit breakers, connectors wiring, mounting material, all other materials, and all equipment, labor, tools, and incidentals necessary to complete the work.

Payment will be made under:

907-632-A:	Solid State Traffic Signal Cabinet Assembly, Type __ Cabinet, Type __ Controller	- per each
907-632-B:	Remove and Replace Existing Traffic Signal Cabinet Assembly, Type __ Cabinet, Type __ Controller	- per each
907-632-C:	Modify Existing Traffic Signal Cabinet Assembly	- per each
907-632-D:	Solid State Traffic Actuated Controller, Type ____	- per each
907-632-E:	Single-user Workstation Signal Software License	- per each
907-632-F:	Single-user Server Signal Software License	- per each
907-632-G:	Malfunction Management Unit	- per each
907-632-H:	Card Rack, ___ Position	- per each
907-632-I:	GPS Clock	- per each
907-632-J:	Power Service Pedestal	- per each

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-641-1 **CODE: (IS)**

DATE: 11/15/2017

SUBJECT: Radar Vehicle Detection

Section 641, Radar Detection Systems, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

Delete the title of Section 641 on page 584 and substitute the following.

SECTION 907-641 - RADAR VEHICLE DETECTION

Delete Subsection 641.01 on page 584, and substitute the following.

907-641.01--Description. This work shall consist of providing all labor, materials, equipment, and incidentals necessary to furnish, install, test, train and operate Radar Vehicle Detection, including Signal Radar Vehicle Detection (SRVD) and Intelligent Transportation Systems (ITS) Radar Vehicle Detection (IRVD). These systems will provide roadway monitoring capabilities via electromagnetic microwave radar signals through the air. The signals bounce off vehicles in their paths and the signal is returned to the detector. The returned signals are processed to determine traffic parameters.

907-641.01.1--Signal Radar Vehicle Detection. SRVD provide traffic parameters necessary to the traffic signal controller operation for vehicle detection. All Signal Radar Vehicle Detection shall be supplied from the same manufacturer per construction project.

Type 1 SRVD shall be used for basic vehicle detection at signalized intersections as described below in this specification. Type 2 SRVD shall have all of the functionality of the Type 1 SRVD with additional features described below in this specification.

Type 2 SRVD shall utilize a matrix of radar signals for two-dimensional coverage and shall track vehicles through each type of detection's specified Area of Coverage. The Type 2 SRVD shall report real-time detection of both moving and stopped vehicles.

907-641.01.2--ITS Radar Vehicle Detection. IRVD shall provide data, including, but not limited to speeds, volume, lane occupancy and classification.

907-641.02--Materials.

907-641.02.1--Radar Design. Delete the first sentence of the first paragraph of Subsection 641.02.1 on page 584, and substitute the following.

The IRVD and the SRVD stop bar microwave shall operate in the 24.0 to 24.25 GHz frequency band.

907-641.02.1.1--Cabinet Interface Unit (CIU) Design. Delete the last paragraph of Subsection 641.02.1.1 on page 585, and substitute the following.

The CIU shall operate in the harsh conditions of a signal cabinet, and comply with the applicable standards stated in the NEMA TS 2-2003 standard for shock, vibration, and temperature.

Delete Subsection 641.02.2 and 641.02.3 on pages 585 and 586, and substitute the following.

907-641.02.2--Area of Coverage--SRVD.

907-641.02.2.1--Stop Bar Radar Vehicle Detection. Type 1 SRVD stop bar radar sensor shall track vehicles through a field of view that extends out a minimum of 100 feet

The Type 1 SRVD stop bar radar sensor shall be able to detect and report presence in lanes located within a minimum 100-foot from the face of the detector. Any variance of the detectable area shall be approved by the Engineer.

The Type 1 SRVD stop bar radar sensor shall be able to detect up to four (4) lanes with eight (8) or sixteen (16) individual zones as indicated in the plans.

Type 2 SRVD stop bar radar sensor shall have all the functionality of the Type 1 SRVD stop bar sensor with the addition of the following:

- Type 2 SRVD stop bar radar sensor shall detect true presence of vehicles whether in motion or still without using Locking or Latching Algorithms.
- Type 2 SRVD stop bar radar sensor shall report presence in lanes with a minimum 90 degree arc from the face of the detector.
- Type 2 SRVD stop bar radar sensor shall be able to detect a minimum of ten (10) lanes.

907-641.02.2.2--Advanced Radar Vehicle Detection. The Type 1 SRVD advanced radar sensor shall be able to detect and report vehicle information such as range and speed when mounted within 50 feet of the center of the lanes of interest. Variance of this distance shall be approved by the Engineer per the application.

The Type 1 SRVD advanced radar sensor shall be forward fired and be able to detect and report vehicle information when mounted at heights above the road surface, as per manufacturer's recommendations.

The Type 1 SRVD advanced radar sensor shall be able to detect and report vehicles on the roadway up to 600 feet from the detector.

The Type 2 SRVD advanced radar sensor shall have all the functionality of the Type 1 SRVD advanced radar sensor with the following additions:

- Type 2 SRVD advanced radar sensor shall be able to detect and report heavy vehicles on the roadway up to 900 feet from the detector.
- Type 2 SRVD advanced radar sensor shall be able to detect Estimated Time of Arrival (ETA) for vehicles. The advanced radar sensors shall support user configurable upper and lower ETA filters for each zone. The sensors shall support the configuring of ETA filters in increments of 0.1 seconds.

907-641.02.3--Area of Coverage-IRVD. The IRVD's field of view shall cover an area with a minimum detection range of six (6) feet from the IRVD and a maximum detection range of 250 feet from the IRVD.

Delete the title of Subsection 641.02.4 on page 586, and substitute the following.

907-641.02.4--Detection Zones--SRVD.

Delete the title of Subsection 641.02.4.1 on page 586, and substitute the following.

907-641.02.4.1--Stop Bar Radar Vehicle Detection.

After the last sentence of the second paragraph of Subsection 641.02.4.1 on page 586, add the following.

A minimum of one (1) separate detection zone per lane is required.

Delete the title of Subsection 641.02.4.2 on page 586, and substitute the following.

907-641.02.4.2--Advanced Radar Vehicle Detection.

Delete the third paragraph of Subsection 641.02.4.2 on page 586, add the following.

The advanced radar sensors shall provide vehicle call and extend data on up to eight (8) channels that can connect to contact closure modules compliant with NEMA TS 1, NEMA TS 2, and 170/2070 controller cabinets.

Delete the title of Subsection 641.02.5 on page 586, and substitute the following.

907-641.02.5--Detection Zones--IRVD.

Delete the title of Subsection 641.02.6 on page 586, and substitute the following.

907-641.02.6--Capabilities--SRVD.

Delete the title of Subsection 641.02.6.1 on page 587, and substitute the following.

907-641.02.6.1--Stop Bar Radar Vehicle Detection.

Delete the title of Subsection 641.02.6.2 on page 587, and substitute the following.

907-641.02.6.2--Advanced Radar Vehicle Detection.

After item 2) of Subsection 641.02.6.2 on page 587, add the following.

3) Maintain a detection accuracy of 95% for each detection zone set-up on the graphical user interface.

Delete the title of Subsection 641.02.7 on page 587, and substitute the following.

907-641.02.7--Capabilities--IRVD.

Delete the first sentence of the first paragraph of Subsection 641.02.7 on page 587, and substitute the following.

The IRVD shall detect true presence of vehicles whether in motion or still without using Locking or Latching Algorithms.

Delete item 5) in Subsection 641.02.7 on page 587, and substitute the following.

5) IRVD in forward-looking configuration shall monitor traffic in one lane and be capable providing the following data: Volume, occupancy, average speed and travel direction in the lane.

907-641.02.8--Environmental Conditions and Protection. Delete the last sentence of the first paragraph of Subsection 641.02.8 on page 588, and substitute the following.

Except as stated otherwise herein, the equipment shall meet all its specified requirements during and after subjecting to any combination of the NEMA TS 2-2003 standard and the following:

907-641.02.10--Electrical. Delete the first paragraph of Subsection 641.02.10 on page 588, and substitute the following.

The radar sensors shall consume less than 10 W and shall operate with a DC input between 12 VDC and 28 VDC for IRVD and 9 VDC and 32 VDC for SRVD, or POE. POE injectors shall be approved by the Engineer.

Delete the title of Subsection 641.02.11 on page 589, and substitute the following.

907-641.02.11--Radar Design.

907-641.02.12--Communication Ports. Delete the second sentence of the first paragraph of Subsection 641.02.12 on page 589, and substitute the following.

The IRVD shall be upgradable (optional) to include integral 10/100 Base-T Ethernet supporting TCP, UDP, IP, ARP, ICMP.

Delete the second sentence of the second paragraph of Subsection 641.02.12 on page 589, and substitute the following.

For SRVD, any external device needed to convert serial to IP Ethernet within the cabinet for remote communications shall be provided with the radar sensor unit at no additional cost.

Delete Subsection 641.02.13 on page 589, and substitute the following.

907-641.02.13--Radar Detection Cabling. All Radar Detection cable shall be paid per the unit cost of the pay item for Radar Detection Cable, as shown on the plans or details. The manufacturer is responsible for obtaining plan sets and ensuring cable lengths are properly measured and accounted for in the bid price for each sensor unit and as shown on the plans.

The cable shall have a single continuous run with no splices, unless inside a manufacturer supplied junction box. The cable shall be terminated only on the two (2) farthest ends of the cable. The cable shall meet the requirements of the manufacturer.

Delete the title of Subsection 641.02.15 on page 590, and substitute the following.

907-641.02.15--Configuration--SRVD.

Delete the title of Subsection 641.02.15.1 on page 590, and substitute the following.

907-641.02.15.1--Stop Bar Radar Vehicle Detection.

Delete the title of Subsection 641.02.15.2 on page 590, and substitute the following.

907-641.02.15.2--Advanced Radar Vehicle Detection.

907-641.03--Construction Requirements. Delete the first sentence of the first paragraph of Subsection 641.03 on page 590, and substitute the following.

Radar Detection System shall be constructed to withstand and operate in sustained winds of up to 90 mph and a 30% gust factor.

Delete the title of Subsection 641.03.1 on page 590, and substitute the following.

907-641.03.1--SRVD Installation Requirements.

Delete the first sentence of the third paragraph of Subsection 641.03.1 on page 590, and substitute the following.

Unused conductors in the cable shall be ground or terminated in the cabinet in accordance with the manufacturer's recommendations.

Delete the last sentence of the third paragraph of Subsection 641.03.1 on page 590, and substitute the following.

If required by the plans and installation methods, impedance termination and testing of multi drop runs shall be required per RS485 multi-drop standards.

Delete the title of Subsection 641.03.2 on page 591, and substitute the following.

907-641.03.2--IRVD Installation Requirements.

Delete Items 1) and 2) of Subsection 641.03.2 on page 591, and substitute the following.

1) The IRVD shall be mounted in side-fired or front facing configuration on poles as shown in the plans, using mounting brackets. The brackets shall be attached with approved 3/4-inch wide stainless steel bands.
2) The Contractor shall install the detector unit on a pole at the manufacturer's recommended height above the road surface so that the masking of vehicles is minimized and that all detection zones are contained within the specified elevation angle as suggested by the manufacturer.

Delete Items 4) and 5) of Subsection 641.03.2 on page 591, and substitute the following.

4) The IRVD mode of operation, detection zones and other calibration and set up will be performed using a MS Windows™ based software and a Notebook PC. The software shall allow verification of correct setup and diagnostics. It shall include facilities for saving verification data and collected data as well as saving and retrieving sensor setup from disk file.
5) Unused conductors in the ITS Radar Vehicle Detector Cable shall be grounded or terminated in the cabinet in accordance with the manufacturer's recommendations. Terminated conductors shall be individually doubled back and taped, then loosely bundled and secured.

Delete Item 7) of Subsection 641.03.2 on page 591, and substitute the following.

7) Any new, additional or updated drivers required for the existing ATMS software to communicate and control new IRVD installed by the Contractor shall be the responsibility of the Contractor.

Delete Subsection 641.03.3 on pages 591 and 592, and substitute the following.

907-641.03.3--Blank.

Delete Subsection 641.03.4 on page 592, and substitute the following.

907-641.03.4--Blank.

907-641.04--Method of Measurement. Delete the paragraphs of Subsection 641.04 on page 593, and substitute the following.

The Radar Vehicle Detection Sensors, of the type specified, will be measured as a unit per each.

Radar Vehicle Detection Cable will be measured by the linear foot, measured horizontally along the conduit, messenger cable or mast arm and vertically along the pole.

Radar Vehicle Detection Training will be measured per lump sum.

907-641.05--Basis of Payment. Delete the paragraphs of Subsection 641.05 on pages 593 & 594, and substitute the following.

Radar Vehicle Detection Sensor, of the type specified, measured as prescribed above, will be paid for at the contract unit price bid per each, which price shall be full compensation for furnishing all materials, construction installation, connecting, testing, for all equipment, tools, labor and incidentals required to complete the work. Work shall include furnishing, installing, system integration, testing and training (if required) of complete radar sensor system that includes the unit, cabling between the unit and the cabinet, surge protection devices, communication converters (if required), all conduit, risers and weatherhead between the radar sensors and the cabinet, interconnection wiring, power supply, connections to support structures (includes all incidental components, attachment hardware, mounting brackets, mounting arms, bolts, or any other items to mount the radar sensor as intended), satisfactory completion of testing and training requirements and all work, equipment and appurtenances as required to effect the full operation including remote and local control of the radar site complete in place and ready to use. The price bid shall also include all system documentation including: shop drawings, operations and maintenance manuals, wiring diagrams, block diagrams and other material necessary to document the operation of the radar sensor. Cabinet Interface Units shall be provided, and installed as specified in the plans, which shall be inclusive of any testing, connections, terminations, and testing required for interfacing the radar sensors and signal controller within the signal cabinet environment.

Radar Vehicle Detection Cable will be paid at the contract unit price per linear foot, which price shall be full compensation for all labor, materials, equipment tools, furnishing, installing, system integration, connections, testing, and all incidentals necessary to complete the work.

Radar Vehicle Detection Training, measured as prescribed above, will be paid for as a lump sum unit price.

Delete the pay items listed on page 594, and substitute the following.

907-641-A: Signal Stop Bar Radar Vehicle Detection Sensor, Type _____ - per each

907-641-B:	Signal Advanced Radar Vehicle Detection Sensor, Type _____	- per each
907-641-C:	ITS Radar Vehicle Detection Sensor	- per each
907-641-D:	Radar Vehicle Detection Cable	- linear foot
907-641-E:	Radar Vehicle Detection Training	- lump sum

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-701-1 **CODE: (SP)**

DATE: 10/23/2018

SUBJECT: Hydraulic Cement

Section 701, Hydraulic Cement, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-701.01--General. In the first sentence of the third paragraph of Subsection 701.01 on page 718, change "mills" to "plants."

In the second sentence of the seventh paragraph of Subsection 701.01 on pages 718 and 719, change "shall" to "will."

907-701.02--Portland Cement.

907-701.02.1-General.

907-701.02.1.2--Alkali Content. Delete the sentence in Subsection 701.02.1.2 on page 719, and substitute the following.

The Equivalent alkali content for all cement types in this Subsection shall not exceed 0.60%.

907-701.02.2--Replacement by Other Cementitious Materials. Delete the paragraph in Subsection 701.02.2 on page 719, and substitute the following.

The maximum replacement of cement by weight is 25% for fly ash or 50% for ground granulated blast furnace slag (GGBFS). Replacement contents below 20% for fly ash or 45% for GGBFS may be used, but will not be given any special considerations, such as the maximum acceptance temperature for portland cement concrete containing pozzolans in Subsection 804.02.13.1.5. Special considerations shall only apply for replacement of cement by fly ash or GGBFS.

Delete Subsection 701.02.2.1 on pages 719 and 720, and substitute the following.

907-701.02.2.1--Portland Cement Concrete Exposed to Soluble Sulfate Conditions or Seawater.

When portland cement concrete is exposed to moderate or severe soluble sulfate conditions, or to seawater, cement types and replacement of cement by Class F fly ash or GGBFS shall be as follows in Table 1. Class C fly ash shall not be used as a replacement for cement in any of the sulfate exposure conditions listed in Table 1.

Table 1- Cementitious Materials for Soluble Sulfate Conditions or Seawater

Sulfate Exposure	Water-soluble sulfate (SO_4) in soil, % by mass	Sulfate (SO_4) in water, ppm	Cementitious material required
Moderate and Seawater	0.10 - 0.20	150 - 1,500	Type I cement with one of the following replacements of cement by weight: 24.5 - 25.0% Class F fly ash, or 49.5 - 50.0% GGBFS or Type II*,** cement
Severe	0.20 - 2.00	1,500 - 10,000	Type I cement with a replacement by weight of 49.5 - 50.0% GGBFS, or Type II* cement with one of the following replacements of cement by weight: 24.5 - 25.0% Class F fly ash, or 49.5 - 50.0% GGBFS

* Type III cement conforming to AASHTO M85 with a maximum 8% tricalcium aluminate (C_3A) may be used in lieu of Type II cement as allowed in Subsection 701.02.1; this cement is given the designation "Type III(MS)."

** Class F fly ash or GGBFS may be added as a replacement for cement as allowed in Subsection 907-701.02.2.

Delete Subsection 701.02.2.2 on page 720, and substitute the following.

907-701.02.2.2--Portland Cement for Soil Stabilization Exposed to Soluble Sulfate Conditions or Seawater. When portland cement for use in soil stabilization is exposed to moderate or severe soluble sulfate conditions, or to seawater, cement types and replacement of cement by Class F fly ash or GGBFS shall meet the requirements of Subsection 701.02.2.1.

907-701.04--Blended Hydraulic Cement.

907-701.04.1--General. Delete Subsection 701.04.1.1 on page 720, and substitute the following.

907-701.04.1.1--Types of Blended Hydraulic Cement. Blended hydraulic cements (blended cements) shall be of the following types and conform to AASHTO M 240:

Type IL – Portland-limestone cement
Type IP – Portland-pozzolan cement
Type IS – Portland blast-furnace slag cement

Blended cement Types IL, IP, and IS meeting the "MS" sulfate resistance requirement listed in AASHTO M 240, Table 3 shall have the "(MS)" suffix added to the type designation.

907-701.04.1.2--Alkali Content. Delete the sentence in Subsection 701.04.1.2 on page 720, and substitute the following.

All blended cement types shall be made with clinker that would result in cement meeting the requirements of Subsection 701.02.1.2 when used in the production of AASHTO M 85, Type I or Type II cement.

907-701.04.2--Replacement by Other Cementitious Materials. Delete the paragraph in Subsection 701.04.2 on page 720, and substitute the following.

The maximum replacement of blended cement Type IL by weight is 35% for fly ash or 50% for GGBFS. Replacement contents below 20% for fly ash or 45% for GGBFS may be used, but will not be given any special considerations, such as the maximum acceptance temperature for blended cement concrete containing pozzolans in Subsection 804.02.13.1.5. Special considerations shall only apply for replacement of blended cement by fly ash or GGBFS.

No additional cementitious materials, such as portland cement, blended cement, fly ash, GGBFS, or others, shall be added to or as a replacement for blended cement Types IP and IS.

Delete Subsection 701.04.2.1 on pages 720 and 721, and substitute the following.

907-701.04.2.1--Blended Cement Concrete Exposed to Soluble Sulfate Conditions or Seawater. When blended cement concrete is exposed to moderate or severe soluble sulfate conditions, or to seawater, cement types and replacement of cement by Class F fly ash or GGBFS shall be as follows in Table 2. Class C fly ash shall not be used as a replacement for cement in any of the sulfate exposure conditions listed in Table 2.

Table 2- Cementitious Materials for Soluble Sulfate Conditions or Seawater

Sulfate Exposure	Water-soluble sulfate (SO_4) in soil, % by mass	Sulfate (SO_4) in water, ppm	Cementitious material required
Moderate and Seawater	0.10 - 0.20	150 - 1,500	Type IL (MS)* cement, Type IL cement with one of the following replacements of cement by weight: 24.5 - 35.0% Class F fly ash, or 49.5 - 50.0% GGBFS, Type IP (MS) cement, or Type IS (MS) cement
Severe	0.20 - 2.00	1,500 - 10,000	Type IL cement with a replacement of cement by weight of 49.5 - 50.0% GGBFS, or Type IL (MS) cement with one of following replacements of cement by weight: 24.5 - 35.0% Class F fly ash, or 49.5 - 50.0% GGBFS

* Class F fly ash or GGBFS may be added as a replacement for cement as allowed in Subsection 907-701.04.2.

Delete Subsection 701.04.2.2 on page 721, and substitute the following.

907-701.04.2.2--Blended Cement for Soil Stabilization Exposed to Soluble Sulfate Conditions or Seawater. When blended cement for use in soil stabilization is exposed to moderate or severe soluble sulfate conditions, or to seawater, cement types and replacement of cement by Class F fly ash or GGBFS shall meet the requirements of Subsection 701.04.2.1.

Delete Subsection 701.04.3 on page 721.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-702-4 **CODE: (IS)**

DATE: 09/11/2018

SUBJECT: Bituminous Materials

Section 702, Bituminous Materials, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-702.04--Sampling. Delete the sentence in Subsection 702.04 on page 722, and substitute the following.

Sampling of bituminous materials shall be as set out in AASHTO R 66.

907-702.07--Emulsified Asphalt. Delete the last sentence in Subsection 702.07 on page 724, and substitute the following.

Asphalt for fog seal shall conform to the requirements of Subsection 907-702.12, Table V.

907-702.12--Tables. Delete Table V in Subsection 702.12 on page 729, and substitute the following.

TABLE V
SPECIFICATION FOR FOG SEAL

	LD-7		CHPF-1		
Test Requirements	**Min.**	**Max.**	**Min.**	**Max.**	**Test Method**
Viscosity, Saybolt Furol, @ 25°C, Sec.	10	100	-	100	AASHTO T 72
Storage Stability Test, 24 hr, %	-	1	-	1	AASHTO T 59
Settlement, 5 day, %	-	5	-	-	AASHTO T 59
Oil Distillate, %	-	1	-	-	AASHTO T 59
Sieve Test, % *	-	0.3	-	0.1	AASHTO T 59
Residue by Distillation, %	40	-	40	-	AASHTO T 59
Test on Residue from Distillation					
Penetration @ 25°C, 100g, 5 sec	-	20	40	90	AASHTO T 49
Softening Point, °C	65	-	-	-	ASTM D 36
Solubility in trichloroethylene, %	97.5	-	-	-	AASHTO T 44
Elastic Recovery @ 25°C, %	-	-	40	-	AASHTO T 301
Original DSR @ 82° (G*/Sinδ, 10 rad/sec)	1	-	-	-	AASHTO T 111

* The Sieve Test result is tested for reporting purposes only and may be waived if no application problems are present in the field.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-703-1 **CODE: (IS)**

DATE: 06/13/2018

SUBJECT: Gradation

Section 703, Aggregates, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-703.03--Course Aggregates for Hydraulic Cement Concrete.

907-703.03.2--Detail Requirements.

907-703.03.2.4--Gradation. In the table in Subsection 703.03.2.4 on page 734, add 100 for the percent passing by weight on the 1½-inch sieve for Size No. 67 aggregates.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-705-1 **CODE: (IS)**

DATE: 06/13/2018

SUBJECT: Stone Riprap

Section 705, Stone Blanket Protection and Filter Blanket Materials, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-705.04--Stone Riprap. Delete the last sentence of the first paragraph of Subsection 705.04 on page 750, and substitute the following.

Quality requirements for rock to be furnished under these specifications will come from a pre-approved source and be visually approved prior to use.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-711-2 **CODE: (IS)**

DATE: 09/11/2018

SUBJECT: Plain Steel Wire

Section 711, Reinforcement and Wire Rope, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-711.02--Deformed and Plain Carbon-Steel Bars for Concrete Reinforcing.

907-711.02.3--Steel Welded and Non-Welded Wire Reinforcement, Plain and Deformed, for Concrete.

907-711.02.3.1--Plain Steel Wire. Delete the sentence in Subsection 711.02.3.1 on pages 780 and 781, and substitute the following.

Plain steel wire and plain steel welded wire shall conform to the requirements of AASHTO M 336.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-720-2 **CODE: (IS)**

DATE: 09/11/2018

SUBJECT: Acceptance Procedure for Glass Beads

Section 720, Pavement Marking Materials, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-720.01--Glass Beads.

907-720.01.4--Acceptance Procedures. Delete the last sentence of the paragraph in Subsection 720.01.4 on page 841, and substitute the following.

Acceptance sampling and testing of glass beads will be in accordance with the Department's Materials Division Inspection, Testing, and Certification Manual, Section 2.9.2 -- Glass Beads.

SPECIAL PROVISION NO. 906-8

Training Special Provision

This Training Special Provision supersedes subparagraph 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," (Attachment 1), and is in implementation of 23 U.S.C. 140(a). Additional information regarding On the Job Training (OJT), Forms, and *Exhibits* are available at the following website.

http://www.gomdot.com/Divisions/CivilRights/Resources.aspx

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

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

The number of trainee hours to be trained under this special provision will be as indicated in the bid schedule of the contract.

In the event that a Contractor subcontracts a portion of the contract work, the Contractor shall determine how many, if any, of the trainee hours are to be trained by the Subcontractor, provided, however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The Contractor shall also insure that this training special provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment. Prior to commencing construction, the Contractor shall submit to the State transportation agency for approval an OJT Trainee Schedule Form indicating the number of trainees to be trained in each selected classification, training program to be used and start date of training for each classification. Furthermore, the Contractor shall provide a Trainee Enrollment Form for each trainee enrolled. The Contractor will be credited for each trainee employed on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeymen status is a primary objective of this Training Special Provision. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps that they take in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he/she has successfully completed a training course leading to journeyman status or in which he/she has been employed as a journeyman. The Contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the Contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by the State highway agency and the

Federal Highway Administration. The State transportation agency and the Federal Highway Administration shall approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the division office.

Except as otherwise noted below, the Contractor will be reimbursed $5.00 per hour of training given an employee on this contract in accordance with an approved training program. As approved by the engineer, reimbursement will be made for training persons in excess of the number specified herein.

No payment shall be made to the Contractor if failure to provide the required training is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirements of this Training Special Provision. It is normally expected that a trainee will begin training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in the work classification or until the trainee has completed the training program. It is not required that all trainees be on board for the entire length of the contract. A Contractor's responsibility will have been fulfilled under this Training Special Provision if the Contractor has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The Contractor shall furnish the trainee a copy of the program being followed in providing the training. The Contractor shall provide each trainee with a certification showing the type and length of training satisfactorily completed.

The Contractor will provide for the maintenance of records and furnish periodic reports to include an OJT Trainee Monthly Report form and an OJT Trainee Termination Report form when appropriately documenting performance under this Training Special Provision.

Contractor's Responsibility

1. Provide On-the-Job Training aimed at developing full journeymen in the type of trade or job classification involved. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g., conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment.

2. Contractors are expected to fulfill their obligations under the Training Special Provisions. Those obligations will be considered fulfilled if Contractors have provided acceptable training to the number of trainees specified in the OJT Plan.

3. Upon deciding to sub-contract out a portion of the contract work, determine how many, if any, of the trainees are to be trained by the sub-Contractor. The Contractor however, shall retain the primary responsibility for meeting the training requirements imposed by the special provision. Additionally, the Contractor will ensure that the Training Special Provision is made applicable to such sub-contract. Training and upgrading of minorities and women toward journeymen status is a primary objective of the Training Special Provision.

4. Prior to commencing construction (no more than 60 days from the date of the Notice to Proceed), the Contractor shall submit to the State Transportation Agency (STA) (MDOT) for approval the Trainee Schedule Form indicating the number of trainees to be trained in each selected classification and any appropriate attachments representing their training program or OJT Plan *(See Exhibit 1)* to be used. The Contractor shall also submit Trainee Enrollment Forms for each trainee to be trained *(See Exhibit 2).* Contractors should submit the above-mentioned forms as their OJT Plan to the Project Engineer who will in turn forward on to the Office of Civil Rights for Approval.

5. Designate and make known at the preconstruction conference to the Office of Civil Rights and the Project Engineer the name of the company **Equal Employment Officer (EEO Officer)/Designated Representative** who will have the responsibility for and must be capable of effectively administering and promoting an active Contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so. These individuals should have the authority to sign monthly trainee enrollment/time reports.

6. **Implement the EEO policy** and contractual responsibilities to provide equal employment opportunity in each grade and classification of employment. To assure that the preceding policy is adhered to, the following actions will be taken as a minimum:

   a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six (6) months.

   b. Ensure that supervisors brief all employees which include trainees on company EEO Policies.

7. Utilize the following procedures to request additional training classifications not presently approved by the STA for assignment to the OJT for training.

   a. Initially, for a "trainee" to be trained, there must be a "journeyman" on the project site to train the employee. The "trainer" can be a supervisor, foreman or another employee in the "trainee classification" who already is a "journeyman".

b. If a classification is not on the "Wage Determination" included in the contract, a written request for an additional classification should be submitted by the Contractor to the Project Engineer.

c. Preferably, the request (written) should originate in the Project Office so that they will know that the Contractor has applied for the needed classification and that payrolls will not be delayed. The Project Office will ensure that they have been given the project number, Contractor, subcontractor, craft and rate and will submit to the Office of Civil Rights.

For documentation purposes it is recommended to the Contractor that the request for additional classifications should be written and addressed to the Office of Civil Rights that states in concise manner the need for the new classification in lieu of using an existing classification within the OJT Manual. In addition, the training program with required hours and job description similar to the OJT Manual.

d. After receipt of the Request for Additional Classification, the OJT Coordinator will:

1. Review for preliminary approval and submit a new Trainee Schedule Form to the Contractor for signature.

2. Upon receipt of the signed form from the Project Office/Contractor, a cover letter is attached to the appropriate documentation. The cover letter and documentation are transmitted to Department of Labor (DOL) in Washington D.C. requesting concurrence of the new classification.

e. If an individual is hired for the requested classification during the time frame when the STA (OJT Coordinator) is awaiting approval, the individual will be paid at the proposed wage rate.

f. If the DOL does not agree with the proposed classification and wage rate, the DOL will make a determination on the appropriate wage rate for the classification. The Labor Compliance Officer will make a copy of the letter and attach a cover letter which cites the recommendation and rationale for the disapproval.

g. If the DOL approves the request, a letter will be sent to the STA (OJT Coordinator) citing approval and the accompanying wage rate. The OJT Coordinator will make a copy of the approval letter and attach a cover letter which cites the approval of the classification and wage rate. This letter is sent to the Contractor and all "paper copies" listed at the end of the cover letter.

8. Begin training as soon as possible after the start date indicated on the Trainee Schedule Form for work utilizing the skill involved. In addition, if training does not begin at the preceding time, a written explanation will be given to the Project Engineer citing the rationale and time frame when training will commence on the project. The trainee should be briefed (furnished a copy) at this juncture on the training program for which he/she has started to ensure understanding of the phases of work and wage rates within each section of the program.

9. After commencement of work at the project site, the Contractor shall implement the following **Trainee Wage Rates** according to the Davis Bacon rules.

Normally, trainees are paid a percentage of journeyman's wages (Davis Bacon rates). The following payment plan is required in the FHWA Training Special Provision;

a. Sixty percent (60%) of the journeyman's wages for the first half of the training period;

b. Seventy-five percent (75%) of the journeyman's wages for the third quarter of the training period; and

c. Ninety percent (90%) of the journeyman's wages for the last quarter of the training period.

10. Indicate on the payroll records the trainer i.e. roller operator trainer for a given classification.

11. Recruit a replacement for the trainee when training obligations have not been met on a project provided that there are enough work hours remaining on the project as well as time within the work phase to complete training. Contractors will document in writing all Good Faith Efforts (GFE) in accordance with FHWA Form 1273 Section II 4a- 4e Recruitment and 6a-6d Training and Promotions) *(See Exhibit 9)*. The Contractor must submit documentation of GFE i.e. efforts made to hire replacements for trainees who terminated their training program to the Office of Civil Rights. The GFE will be complied into a letter which is attached to the MDOT Monthly Training Report and submitted to the along a MDOT Termination Report *(See Exhibit 4)* that includes the names/reasons of individuals who separated from the company during the respective reporting period. The GFE will be evaluated to determine if it is sufficient or insufficient. The Project Engineer will forward documentation to the Office of Civil Rights within five (5) days of receipt.

12. Transferring trainees from one federal-aid project to another.

a. Contractors are to make written requests for transferring trainees from one federal-aid project to another federal aid project and submit to the Project Engineer to be forwarded to the Office of Civil Rights for review and approval.

b. In addition, if trainees are approved for transfer, the gaining project must have the same training classification approved for that project. The Contractor must provide documentation i.e. written letter that the gaining project will have sufficient work time to complete training requirements.

c. All hours trained by employees on a project other than their originally assigned project without the proper transfer approval will not be counted towards the OJT obligation for that project. If the OJT obligation is not met, the prime Contractor will have to show good faith efforts in fulfilling this portion of the contract requirement.

13. Utilize and submit monthly trainee reports *(See Exhibit 3)* to document training activities to the respective Project Engineer. Monthly training reports should be accurate, concise and include the following items:

a. Report Period (month) – the date at the top of the training report reflects the month and year the trainee received the training (not the date the report was completed by the Contractor)

b. Project Number – project number on the certified payroll and training report should match

c. Contractor Name

d. County

e. Trainee Name

f. Job Classification/Hours Required – obtained from OJT Manual - certified payrolls and training reports should match

g. Hours required – obtained from OJT Manual should match the Job Classification

h. Date Training Started/Terminated – inserted by the Contractor

i. Hours trained for the month – training performed this month on federal aid projects and inserted by a respective week ending date i.e. Sunday

j. Hours to date – all training annotated on report for previous and current month

k. Hours training remaining – subtraction of total training hours to date from training hours required

l. Trainee wage rate – Contractor cite the appropriate wage rate for phase of training

m. Original signatures and dates for respective training period citing trainee, trainer, and Company EEO Officer/Designated Representative

n. Every applicable field on the training report is completed

14. Monthly training reports intended for submission to the MDOT Central Office should cite activities illustrated in the individual training forms received from project personnel. Failure of the Contractor to submit monthly trainee reports may result in the estimate not being processed and paid. Monthly Training Reports should be submitted to the Project Engineer within fifteen (15) days of the current month with data covering the previous month's activities. However, if monthly training reports are not submitted within this time frame, the Contractor will provide written explanation to the Project Engineer citing the reason for the delay. In addition, a copy of this documentation will be provided to the MDOT Office of Civil Rights within ten (10) days of receipt by the Project Engineer.

15. Provide the trainee with a certification *(See Exhibit 7)* showing the type and length of training satisfactorily completed.

16. Retain all EEO records, i.e. employment breakdown by race and craft on a project, recruitment and hiring of minority and females for a period of three (3) years following the completion of contract work and shall be available at reasonable times and places for inspection by authorized representatives of the STA and the FHWA.

17. Submit an annual report to the STA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form PR 1391 *(See Exhibit 8)*. Contractors are provided an annual notice for this reporting requirement.

18. Periodically evaluate the effectiveness of their OJT Programs and trainees' progress within the training program. Based on these evaluations, forward comments / recommendations through the Project Engineer to the Office of Civil Rights for improving or correcting deficiencies in the training program.

S E C T I O N 9 0 5 - P R O P O S A L

Date _____

Mississippi Transportation Commission
Jackson, Mississippi

Sirs: The following proposal is made on behalf of _____
_____ of _____
_____
for constructing the following designated project(s) within the time(s) hereinafter specified.

The plans are composed of drawings and blue prints on file in the offices of the Mississippi Department of Transportation, Jackson, Mississippi.

The Specifications are the current Standard Specifications of the Mississippi Department of Transportation approved by the Federal Highway Administration, except where superseded or amended by the plans, Special Provisions and Notice(s) to Bidders attached hereto and made a part thereof.

I (We) certify that I (we) possess a copy of said Standard and any Supplemental Specifications.

Evidence of my (our) authority to submit the Proposal is hereby furnished. The proposal is made without collusion on the part of any person, firm or corporation. I (We) certify that I (we) have carefully examined the Plans, the Specifications, including the Special Provisions and Notice(s) to Bidders, herein, and have personally examined the site of the work. On the basis of the Specifications, Special Provisions, Notice(s) to Bidders, and Plans, I (we) propose to furnish all necessary machinery, tools, apparatus and other means of construction and do all the work and furnish all the materials in the manner specified. I (We) understand that the quantities mentioned herein are approximate only and are subject to either increase or decrease, and hereby propose to perform any increased or decreased quantities of work at the unit prices bid, in accordance with the above.

I (We) acknowledge that this proposal will be found irregular and/or non-responsive unless a certified check, cashier's check, or Proposal Guaranty Bond in the amount as required in the Advertisement (or, by law) is submitted electronically with the proposal or is delivered to the Contract Administration Engineer prior to the bid opening time specified in the advertisement.

INSTRUCTION TO BIDDERS: Alternate and Optional Items on Bid Schedule.

1. Two or more items entered opposite a single unit quantity WITHOUT DEFINITE DESIGNATION AS "ALTERNATE ITEMS" are considered as "OPTIONAL ITEMS". Bidders may or may not indicate on bids the Optional Item proposed to be furnished or performed WITHOUT PREJUDICE IN REGARD TO IRREGULARITY OF BIDS.
2. Items classified on the bid schedule as "ALTERNATE ITEMS" and/or "ALTERNATE TYPES OF CONSTRUCTION" must be preselected and indicated on bids. However, "Alternate Types of Construction" may include Optional Items to be treated as set out in Paragraph 1, above.
3. Optional items not preselected and indicated on the bid schedule MUST be designated in accordance with Subsection 102.06 prior to or at the time of execution of the contract.
4. Optional and Alternate items designated must be used throughout the project.

I (We) further propose to perform all "force account or extra work" that may be required of me (us) on the basis provided in the Specifications and to give such work my (our) personal attention in order to see that it is economically performed.

I (We) further propose to execute the attached contract agreement (Section 902) as soon as the work is awarded to me (us), and to begin and complete the work within the time limit(s) provided for in the Specifications and Advertisement. I (We) also propose to execute the attached contract bond (Section 903) in an amount not less than one hundred (100) percent of the total of my (our) part, but also to guarantee the excellence of both workmanship and materials until the work is finally accepted.

I (We) shall submit electronically with our proposal or deliver prior to the bid opening time a certified check, cashier's check or bid bond for **five percent (5%) of total bid** and hereby agree that in case of my (our) failure to execute the contract and furnish bond within Ten (10) days after notice of award, the amount of this check (bid bond) will be forfeited to the State of Mississippi as liquidated damages arising out of my (our) failure to execute the contract as proposed. It is understood that in case I am (we are) not awarded the work, the check will be returned as provided in the Specifications.

SECTION 905 -- PROPOSAL (CONTINUED)

I (We) hereby certify by digital signature and electronic submission via Bid Express of the Section 905 proposal below, that all certifications, disclosures and affidavits incorporated herein are deemed to be duly executed in the aggregate, fully enforceable and binding upon delivery of the bid proposal. I (We) further acknowledge that this certification shall not extend to the bid bond or alternate security which must be separately executed for the benefit of the Commission. This signature does not cure deficiencies in any required certifications, disclosures and/or affidavits. I (We) also acknowledge the right of the Commission to require full and final execution on any certification, disclosure or affidavit contained in the proposal at the Commission's election upon award. Failure to so execute at the Commission's request within the time allowed in the Standard Specifications for execution of all contract documents will result in forfeiture of the bid bond or alternate security.

Respectfully Submitted,

DATE _____

_____
Contractor

BY _____
Signature

TITLE _____

ADDRESS _____

CITY, STATE, ZIP _____

PHONE _____

FAX _____

E-MAIL _____

(To be filled in if a corporation)

Our corporation is chartered under the Laws of the State of _____ and the names, titles and business addresses of the executives are as follows:

_____
President Address

_____
Secretary Address

_____
Treasurer Address

The following is my (our) itemized proposal.

Mill & Overlay approximately 12 miles of SR 18 from the beginning of the 4-lane South of Raymond to I-20, known as Federal Aid Project No. STP-0039-02(053) / 107631301 in Hinds County.

Line no.	Item Code	Adj Code	Quantity	Units	Description[Fixed Unit Price]
				Roadway Items	
0010	202-B007		575	Square Yard	Removal of Asphalt Pavement, All Depths
0020	202-B009		45	Square Yard	Removal of Asphalt Pavement, Failed Areas
0030	202-B045		208	Square Yard	Removal of Cement Treated Base, All Depths
0040	202-B047		11,960	Square Yard	Removal of Cement Treated Shoulders w/ Variable Depth Overlay
0050	202-B051		595	Linear Feet	Removal of Concrete Curb
0060	202-B063		264	Square Yard	Removal of Concrete Paved Ditch
0070	202-B068		885	Square Yard	Removal of Concrete Pavement Punchouts, 9" Depth
0080	202-B158		1,573	Linear Feet	Removal of Guard Rail, Including Rails, Posts and Terminal Ends
0090	202-B240		1,332	Linear Feet	Removal of Traffic Stripe
0100	203-A001	(E)	310	Cubic Yard	Unclassified Excavation, FM, AH
0110	203-EX040	(E)	175	Cubic Yard	Borrow Excavation, AH, LVM, Class B9
0120	203-G002	(E)	185	Cubic Yard	Excess Excavation, LVM, AH
0130	209-A005		850	Square Yard	Geotextile Stabilization, Type V, Non-Woven
0140	216-A001		1,800	Square Yard	Solid Sodding
0150	219-A001		1	Thousand Gallon	Watering ($20.00)
0160	221-A001	(S)	22	Cubic Yard	Concrete Paved Ditch
0170	237-A001		100	Linear Feet	Wattles, 12"
0180	304-A004	(GY)	1,070	Cubic Yard	Granular Material, LVM, Class 5, Group C
0190	305-B002	(GY)	50	Cubic Yard	Size I Stabilizer Aggregate, Coarse
0200	403-A002	(BA1)	50,939	Ton	12.5-mm, MT, Asphalt Pavement
0210	403-A003	(BA1)	2,037	Ton	12.5-mm, ST, Asphalt Pavement
0220	403-B002	(BA1)	95	Ton	12.5-mm, MT, Asphalt Pavement, Leveling
0230	406-D001		449,894	Square Yard	Fine Milling of Bituminous Pavement, All Depths
0240	407-A001	(A2)	33,742	Gallon	Asphalt for Tack Coat
0250	413-B001		200	Linear Feet	Cleaning and Sealing Joints
0260	413-D002		975	Linear Feet	Cleaning and Filling Joints
0270	413-E001		3,200	Linear Feet	Sawing and Sealing Transverse Joints in Asphalt Pavement
0280	423-A001		15	Mile	Rumble Strips, Ground In
0290	501-D001		155	Linear Feet	Expansion Joints, With Dowels
0300	503-A003	(C)	1,380	Square Yard	9" and Variable Reinforced Concrete Pavement, Broom Finish
0310	503-B001		1,022	Linear Feet	Saw Cut, Longitudinal Joints
0320	503-C004		228	Linear Feet	Saw Cut, 3-inch
0330	503-C010		570	Linear Feet	Saw Cut, Full Depth
0340	503-D001		33	Cubic Yard	Concrete for Base Repair

Line no.	Item Code	Adj Code	Quantity	Units	Description[Fixed Unit Price]
0350	503-E002		505	Each	Tie Bars, No. 5 Deformed Drilled and Epoxied or Grouted
0360	601-B001	(S)	1	Cubic Yard	Class "B" Structural Concrete, Minor Structures
0370	603-CB004	(S)	1	Each	24" Reinforced Concrete End Section
0380	603-RA002	(S)	24	Linear Feet	18" Pipe Removed and Relaid
0390	603-RA003	(S)	8	Linear Feet	24" Pipe Removed and Relaid
0400	603-RB002	(S)	1	Each	18" End Section Removed and Relaid
0410	606-B003		943	Linear Feet	Guard Rail, Class A, Type 1, 'W' Beam, Metal Post
0420	606-B007		150	Linear Feet	Guard Rail, Class A, Type 1, Double Faced, Metal Post
0430	606-D012		6	Each	Guard Rail, Bridge End Section, Type D Modified
0440	606-D019		2	Each	Guard Rail, Bridge End Section, Type H
0450	606-E003		2	Each	Guard Rail, Terminal End Section, Double Faced
0460	606-E005		5	Each	Guard Rail, Terminal End Section, Flared
0470	606-E007		1	Each	Guard Rail, Terminal End Section, Non-Flared
0480	609-D008	(S)	428	Linear Feet	Combination Concrete Curb and Gutter Type 3A
0490	618-A001		1	Lump Sum	Maintenance of Traffic
0500	619-A1001		60	Mile	Temporary Traffic Stripe, Continuous White
0510	619-A2001		30	Mile	Temporary Traffic Stripe, Continuous Yellow
0520	619-A3001		70	Mile	Temporary Traffic Stripe, Skip White
0530	619-A5001		155,060	Linear Feet	Temporary Traffic Stripe, Detail
0540	619-A6001		500	Square Feet	Temporary Traffic Stripe, Legend
0550	619-A6002		9,035	Linear Feet	Temporary Traffic Stripe, Legend
0560	619-D1001		24	Square Feet	Standard Roadside Construction Signs, Less than 10 Square Feet
0570	619-D2001		1,390	Square Feet	Standard Roadside Construction Signs, 10 Square Feet or More
0580	619-F3001		28	Each	Delineators, Guard Rail, White
0590	619-F3002		28	Each	Delineators, Guard Rail, Yellow
0600	619-G4001		36	Linear Feet	Barricades, Type III, Double Faced
0610	620-A001		1	Lump Sum	Mobilization
0620	626-A001		23	Mile	6" Thermoplastic Double Drop Traffic Stripe, Skip White
0630	626-B002		19	Mile	6" Thermoplastic Double Drop Traffic Stripe, Continuous White
0640	626-E001		14	Mile	6" Thermoplastic Double Drop Traffic Stripe, Continuous Yellow
0650	626-G004		95,560	Linear Feet	Thermoplastic Double Drop Detail Stripe, White
0660	626-G005		57,860	Linear Feet	Thermoplastic Double Drop Detail Stripe, Yellow
0670	626-H001		7,677	Square Feet	Thermoplastic Double Drop Legend, White
0680	626-H002		9,035	Linear Feet	Thermoplastic Double Drop Legend, White
0690	627-J001		481	Each	Two-Way Clear Reflective High Performance Raised Markers
0700	627-K001		5,433	Each	Red-Clear Reflective High Performance Raised Markers
0710	627-L001		589	Each	Two-Way Yellow Reflective High Performance Raised Markers

Line no.	Item Code	Adj Code	Quantity	Units	Description[Fixed Unit Price]
0720	630-G004		8	Each	Type 3 Object Markers, OM-3R or OM-3L
0730	647-A001		1	Lump Sum	Removal of Existing Traffic Signal Equipment
0740	907-515-A001		72,780	Pounds	Fiber Reinforced Polymer Patching Material
0750	907-632-D001		2	Each	Solid State Traffic Actuated Controller, Type 1
0760	907-641-A002		46	Each	Signal Stop Bar Radar Vehicle Detection Sensor, Type 2
0770	907-641-D001		8,950	Linear Feet	Radar Vehicle Detection Cable
0780	907-906001		520	Hours	Trainees ($5.00)
				ALTERNATE GROUP AA NUMBER 1	
0790	304-F001	(GT)	360	Ton	3/4" and Down Crushed Stone Base
				ALTERNATE GROUP AA NUMBER 2	
0800	304-F002	(GT)	360	Ton	Size 610 Crushed Stone Base
				ALTERNATE GROUP AA NUMBER 3	
0810	304-F003	(GT)	360	Ton	Size 825B Crushed Stone Base

CONDITIONS FOR COMBINATION BID

If a bidder elects to submit a combined bid for two or more of the contracts listed for this month's letting, the bidder must complete and execute these sheets of the proposal in each of the individual proposals to constitute a combination bid. In addition to this requirement, each individual contract shall be completed, executed and submitted in the usual specified manner.

Failure to execute this Combination Bid Proposal in each of the contracts combined will be just cause for each proposal to be received and evaluated as a separate bid.

It is understood that the Mississippi Transportation Commission not only reserves the right to reject any and all proposals, but also the right to award contracts upon the basis of lowest separate bids or combination bids most advantageous to the State.

It is further understood and agreed that the Combination Bid Proposal is for comparison of bids only and that each contract shall operate in every respect as a separate contract in accordance with its proposal and contract documents.

I (We) agree to complete each contract on or before its specified completion date.

* *

COMBINATION BID PROPOSAL

This proposal is tendered as one part of a Combination Bid Proposal utilizing option ___* of Subsection 102.11 on the following contracts:

* Option to be shown as either (a), (b), or (c).

	Project No.	County		Project No.	County
1.	____________	____________	6.	____________	____________
2.	____________	____________	7.	____________	____________
3.	____________	____________	8.	____________	____________
4.	____________	____________	9.	____________	____________
5.	____________	____________	10.	____________	____________

(a) If Combination A has been selected, your Combination Bid is complete.

(b) If Combination B has been selected, then complete the following page.

SECTION 905 - COMBINATION BID PROPOSAL (Continued)

Project Number	Pay Item Number	Unit	Unit Price Reduction	Total Item Reduction	Total Contract Reduction
1. _____	_____	_____	_____	_____	
2. _____	_____	_____	_____	_____	
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
5. _____	_____	_____	_____	_____	
6. _____	_____	_____	_____	_____	
7. _____	_____	_____	_____	_____	
8. _____	_____	_____	_____	_____	

Project Number	Pay Item Number	Unit	Unit Price Reduction	Total Item Reduction	Total Contract Reduction
9. _____	_____ _____	_____ _____	_____ _____	_____ _____	
10. _____	_____ _____	_____ _____	_____ _____	_____ _____	

(c) If Combination C has been selected, then initial and complete ONE of the following.

_____ I (We) desire to be awarded work not to exceed a total monetary value of $ _____.

_____ I (We) desire to be awarded work not to exceed _____ number of contracts.

Certification with regard to the Performance of Previous Contracts or Subcontracts subject to the Equal Opportunity Clause and the filing of Required Reports

The Bidder hereby certifies that he has ____, has not ____, participated in a previous contract or subcontract subject to the Equal Opportunity Clause, as required by Executive Orders 10925, 11114, or 11246, and that he has ____, has not ____, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

_____
(COMPANY)

DATE: _____

NOTE: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7 (b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the Equal Opportunity Clause. Contracts and Subcontracts which are exempt from the Equal Opportunity Clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of $10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime Contractors and Subcontractors who have participated in a previous contract or subcontract subject to the Executive orders and have not filed the required reports should note that 41 CFR 60-1.7 (b) (1) prevents the award of contracts and subcontracts unless such Contractors submit a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U. S. Department of Labor.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

CERTIFICATION

I,_____,
(Name of person signing bid)

individually, and in my capacity as_____ of
(Title of person signing bid)

_____do hereby certify under
(Name of Firm, partnership, or Corporation)

penalty of perjury under the laws of the United States and the State of Mississippi that_____

_____, Bidder
(Name of Firm, Partnership, or Corporation)

on Project No. **STP-0039-02(053)/ 107631301000**

in **Hinds** County(ies), Mississippi, has not either

directly or indirectly entered into any agreement, participated in any collusion; or otherwise taken any action in restraint of free competitive bidding in connection with this contract; nor have any of its corporate officers or principal owners.

Except as noted hereafter, it is further certified that said legal entity and its corporate officers, principal owners, managers, auditors and others in a position of administering federal funds:

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

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

c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in (b) above; and

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

Do exceptions exist and are made a part thereof? Yes / No

Any exceptions shall address to whom it applies, initiating agency and dates of such action.

Note: Exceptions will not necessarily result in denial of award but will be considered in determining bidder responsibility. Providing false information may result in criminal prosecution or administrative sanctions.

The bidder further certifies that the certification requirements contained in Section XI of Form FHWA 1273, will be or have been included in all subcontracts, material supply agreements, purchase orders, etc. except those procurement contracts for goods or services that are expected to be less than the Federal procurement small purchase threshold fixed at 10 U.S.C. 2304(g) and 41 U.S.C. 253(g) (currently $25,000) which are excluded from the certification requirements.

The bidder further certifies, to the best of his or her knowledge and belief, that:

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

2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this contract, Standard Form-LLL, Disclosure Form to Report Lobbying, in accordance with its instructions will be completed and submitted.

The certification contained in (1) and (2) above is a material representation of fact upon which reliance is placed and a prerequisite imposed by Section 1352, Title 31, U.S. Code prior to entering into this contract. Failure to comply shall be subject to a civil penalty of not less than $10,000 and not more than $100,000. The bidder shall include the language of the certification in all subcontracts exceeding $100,000 and all subcontractors shall certify and disclose accordingly.

All of the foregoing is true and correct.

Executed on _____ _____

Signature

(01/2016 F)

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SAM.GOV Registration and DUNS Number

Bidders are advised that the Prime Contractor must maintain current registration in the **System for Award Management** (http://www.sam.gov) at all times during the project. A Dun and Bradstreet Data Universal Numbering System (DUNS) Number (http://www.dnb.com) is one of the requirements for registration in the System for Award Management.

Bidders are advised that prior to the award of this contract, they MUST be registered in the System for Award Management.

I (We) acknowledge that this contract cannot be awarded if I (We) are not registered in the System for Award Management prior to the award of this contract. _____ (Yes / No)

I (We) have a DUNS Number . _____ (Yes / No)

DUNS Number: _____

Company Name: _____

Company e-mail address: _____

(6/2015F)

SECTION 902

CONTRACT FOR **STP-0039-02(053)/ 107631301000**

LOCATED IN THE COUNTY(IES) OF **Hinds**

STATE OF MISSISSIPPI,
COUNTY OF HINDS

This contract entered into by and between the Mississippi Transportation Commission on one hand, and the undersigned contractor, on the other witnesseth;

That, in consideration of the payment by the Mississippi Transportation Commission of the prices set out in the proposal hereto attached, to the undersigned contractor, such payment to be made in the manner and at the time of times specified in the specifications and the special provisions, if any, the undersigned contractor hereby agrees to accept the prices stated in the proposal in full compensation for the furnishing of all materials and equipment and the executing of all the work contemplated in this contract.

It is understood and agreed that the advertising according to law, the Advertisement, the instructions to bidders, the proposal for the contract, the specifications, the revisions of the specifications, the special provisions, and also the plans for the work herein contemplated, said plans showing more particularly the details of the work to be done, shall be held to be, and are hereby made a part of this contract by specific reference thereto and with like effect as if each and all of said instruments had been set out fully herein in words and figures.

It is further agreed that for the same consideration the undersigned contractor shall be responsible for all loss or damage arising out of the nature of the work aforesaid; or from the action of the elements and unforeseen obstructions or difficulties which may be encountered in the prosecution of the same and for all risks of every description connected with the work, exceptions being those specifically set out in the contract; and for faithfully completing the whole work in good and workmanlike manner according to the approved Plans, Specifications, Special Provisions, Notice(s) to Bidders and requirements of the Mississippi Department of Transportation.

It is further agreed that the work shall be done under the direct supervision and to the complete satisfaction of the Executive Director of the Mississippi Department of Transportation, or his authorized representatives, and when Federal Funds are involved subject to inspection at all times and approval by the Federal Highway Administration, or its agents as the case may be, or the agents of any other Agency whose funds are involved in accordance with those Acts of the Legislature of the State of Mississippi approved by the Governor and such rules and regulations issued pursuant thereto by the Mississippi Transportation Commission and the authorized Federal Agencies.

The Contractor agrees that all labor as outlined in the Special Provisions may be secured from list furnished by

It is agreed and understood that each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and this contract shall be read and enforced as though it were included herein, and, if through mere mistake or otherwise any such provision is not inserted, then upon the application of either party hereto, the contract shall forthwith be physically amended to make such insertion.

The Contractor agrees that he has read each and every clause of this Contract, and fully understands the meaning of same and that he will comply with all the terms, covenants and agreements therein set forth.

Witness our signatures this the____ day of _____,_____.

_____
Contractor(s)

By_____

Title_____

Signed and sealed in the presence of:
(names and addresses of witnesses)

_____

MISSISSIPPI TRANSPORTATION COMMISSION

By_____
Executive Director

_____
Secretary to the Commission

Award authorized by the Mississippi Transportation Commission in session on the ____ day of _____,_____, Minute Book No. _____, Page No. _____.

Revised 8/06/2003

SECTION 903
PERFORMANCE AND PAYMENT BOND

CONTRACT BOND FOR: **STP-0039-02(053)/ 107631301000**

LOCATED IN THE COUNTY(IES) OF: **Hinds**

STATE OF MISSISSIPPI,
COUNTY OF HINDS

Know all men by these presents: that we, _____
(Contractor)
_____ Principal, a _____

residing at_____ in the State of _____

and _____
(Surety)
residing at _____ in the State of _____,

authorized to do business in the State of Mississippi, under the laws thereof, as surety, effective as of the contract date shown below, are held and firmly bound unto the State of Mississippi in the sum of _____

_____

($_____) Dollars, lawful money of the United States of America, to be paid to it for which payment well and truly to be made, we bind ourselves, our heirs, administrators, successors, or assigns jointly and severally by these presents.

The conditions of this bond are such, that whereas the said _____

_____

principal, has (have) entered into a contract with the Mississippi Transportation Commission, bearing the date of _____ day of _____ A.D. _____ hereto annexed, for the construction of certain projects(s) in the State of Mississippi as mentioned in said contract in accordance with the Contract Documents therefor, on file in the offices of the Mississippi Department of Transportation, Jackson, Mississippi.

Now therefore, if the above bounden _____
_____in all things shall stand to and abide by and well and truly observe, do keep and perform all and singular the terms, covenants, conditions, guarantees and agreements in said contract, contained on his (their) part to be observed, done, kept and performed and each of them, at the time and in the manner and form and furnish all of the material and equipment specified in said contract in strict accordance with the terms of said contract which said plans, specifications and special provisions are included in and form a part of said contract and shall maintain the said work contemplated until its final completion and acceptance as specified in Subsection 109.11 of the approved specifications, and save harmless said Mississippi Transportation Commission from any loss or damage arising out of or occasioned by the negligence, wrongful or criminal act, overcharge, fraud, or any other loss or damage whatsoever, on the part of said principal (s), his (their) agents, servants, or employees in the performance of said work or in any manner connected therewith, and shall be liable and responsible in a civil action instituted by the State at the instance of the Mississippi Transportation Commission or any officer of the State authorized in such cases, for double any amount in money or property, the State may lose or be overcharged or otherwise defrauded of, by reason of wrongful or criminal act, if any, of the Contractor(s), his (their) agents or employees, and shall promptly pay the said agents, servants and employees and all persons furnishing labor, material, equipment or supplies therefor, including premiums incurred, for Surety Bonds, Liability Insurance, and Workmen's Compensation Insurance; with the additional obligation that such Contractor shall promptly make payment of all taxes, licenses, assessments, contributions, damages,

any liquidated damages which may arise prior to any termination of said principal's contract, any liquidated damages which may arise after termination of the said principal's contract due to default on the part of said principal, penalties and interest thereon, when and as the same may be due this state, or any county, municipality, board, department, commission or political subdivision: in the course of the performance of said work and in accordance with Sections 31-5-51 et seq. Mississippi Code of 1972, and other State statutes applicable thereto, and shall carry out to the letter and to the satisfaction of the Executive Director of the Mississippi Department of Transportation, all, each and every one of the stipulations, obligations, conditions, covenants and agreements and terms of said contract in accordance with the terms thereof and all of the expense and cost and attorney's fee that may be incurred in the enforcement of the performance of said contract, or in the enforcement of the conditions and obligations of this bond, then this obligation shall be null and void, otherwise to be and remain in full force and virtue.

_____	_____
(Contractors) Principal	Surety
By _____	By _____
	(Signature) Attorney in Fact
	Address _____
	_____
Title _____	_____
(Contractor's Seal)	(Printed) MS Agent
	_____
	(Signature) MS Agent
	Address _____
	_____
	_____
	(Surety Seal)
	_____
	Mississippi Insurance ID Number

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we_____
Contractor

_____
Address

_____
City, State ZIP

As principal, hereinafter called the Principal, and _____
Surety

a corporation duly organized under the laws of the state of _____

as Surety, hereinafter called the Surety, are held and firmly bound unto **State of Mississippi, Jackson, Mississippi**

As Obligee, hereinafter called Obligee, in the sum of **Five Per Cent (5%) of Amount Bid**

Dollars($_____)

for the payment of which sum will and truly to be made, the said Principal and said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for **Mill & Overlay approximately 12 miles of SR 18 from the beginning of the 4-lane South of Raymond to I-20, known as Federal Aid Project No. STP-0039-02(053) / 107631301 in Hinds County.**

NOW THEREFORE, the condition of this obligation is such that if the aforesaid Principal shall be awarded the contract, the said Principal will, within the time required, enter into a formal contract and give a good and sufficient bond to secure the performance of the terms and conditions of the contract, then this obligation to be void; otherwise the Principal and Surety will pay unto the Obligee the difference in money between the amount of the bid of the said Principal and the amount for which the Obligee legally contracts with another party to perform the work if the latter amount be in excess of the former, but in no event shall liability hereunder exceed the penal sum hereof.

Signed and sealed this _____day of _____, 20___

_____
(Principal) (Seal)

_____ By:_____
(Witness) (Name) (Title)

_____
(Surety) (Seal)

_____ By:_____
(Witness) (Attorney-in-Fact)

_____
(MS Agent)

_____
Mississippi Insurance ID Number

OCR-485

REV. 1/2016

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
OFFICE OF CIVIL RIGHTS
JACKSON, MISSISSIPPI

LIST OF FIRMS SUBMITTING QUOTES

I/we received quotes from the following firms on: Letting Date: **February 26, 2019**

Project No: **STP-0039-02(053)/ 107631301000**

County: **Hinds**

Disadvantaged Business Enterprise (DBE) Regulations as stated in 49 CFR 26.11 require the Mississippi Department of Transportation (MDOT) to create and maintain a comprehensive list of all firms quoting/bidding subcontracts on prime contracts and quoting/bidding subcontracts on federally-funded transportation projects. For every firm, we require the following information:

Firm Name: ________________________________
Contact Name/Title: ________________________________
Firm Mailing Address: ________________________________
Phone Number: ________________________________
_______ DBE Firm _______ Non-DBE Firm

Firm Name: ________________________________
Contact Name/Title: ________________________________
Firm Mailing Address: ________________________________
Phone Number: ________________________________
_______ DBE Firm _______ Non-DBE Firm

Firm Name: ________________________________
Contact Name/Title: ________________________________
Firm Mailing Address: ________________________________
Phone Number: ________________________________
_______ DBE Firm _______ Non-DBE Firm

Firm Name: ________________________________
Contact Name/Title: ________________________________
Firm Mailing Address: ________________________________
Phone Number: ________________________________
_______ DBE Firm _______ Non-DBE Firm

Firm Name: ________________________________
Contact Name/Title: ________________________________
Firm Mailing Address: ________________________________
Phone Number: ________________________________
_______ DBE Firm _______ Non-DBE Firm

____
S

____

FORM CSD-612
Rev. 1 / 2015

YEAR 2019 PROGRESS SCHEDULE YEAR 2020

PROJECT NUMBER STP-0039-02(053) - 107631/301000
COUNTY Hinds County

WORK PHASE NO.	DESCRIPTION	LINE NUMBERS	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOV	DEC	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOV	DEC	
1	Miscellaneous	10-170, 250,260,280-610, 690-780				0														201							
2	Mill, Pave, Granular Mat'l	180-240, 270, 790-810								87				138		156			184								
3	Permanent Stripe	620-680																184	194								
	LET:	02/26/2019																									
	NOA:	03/12/2019																									
	NTP/BCT:	4/11/2019																									
	W.D.:	201																									

MONTH	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOV	DEC	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOV	DEC	172 WORKING DAYS PER YEAR
ANTICIPATED WORKING DAYS PER MONTH	6	7	11	15	19	20	21	21	20	16	11	5	6	7	11	15	19	20	21	21	20	16	11	5	

NOTE: THE ANTICIPATED WORKING DAYS SHOWN ON THIS SCHEDULE ARE FOR INFORMATIONAL PURPOSES ONLY.
THE ACTUAL WORKING DAY TOTAL AS ASSESSED BY THE PROJECT ENGINEER ON FORM CSD-765 SHALL GOVERN.